

GOLD STANDARD VERIFICATION AND CERTIFICATION REPORT

CONSORCIO EOLICO AMAYO S.A.

AMAYO 40 MW WIND POWER PROJECT - NICARAGUA

Monitoring Period: 2012-04- 01 to 2013-04-30
(incl. both days)

Report No: 9655 - 13/0922

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Verification Report:	Report No.		Rev. No.	Date of 1st issue:	Date of this rev.
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Project:	Title:			UNFCCC Registration date:	Gold Standard Registration date:
	Amayo 40 MW Wind Power Project - Nicaragua			2009-04-12	2010-08-27
Project Participant(s):	Host party:			Other involved parties:	
	Consorcio Eolico Amayo S.A.			Shell Trading International Limited	
Applied methodology/ies:	Title:			No.:	Scope(s) / TA(s)
	Consolidated methodology for grid- connected renewable electricity generation			ACM0002 ver. 7	1/1.2
Monitoring:	Monitoring period (MP):			No. of days:	MP No.
	From:	To:		395	5
	2012-04-01	2013-04-30			
Carbon Monitoring report:	Title:			Draft version:	Final version:
	Amayo 40 MW Wind Power Project - Nicaragua			2013/05/06	2013/06/13
Sustainability Monitoring Report:	Title:			Draft version:	Final version:
	Gold Standard Amayo 40 MW Wind Power Project – Nicaragua			2013/05/29	2013/06/17
Verification team / Technical Review and Final Approval	Raul Gonzalez Mitre (TL)	Oliver Quireza (T)		Emilio Martin Alexandra Nebel	Alexandra Nebel
Emission reductions: [t CO_{2e}]	Verified amount			As per draft MR:	
	120,951			121,012	
Summary of Verification opinion	Consorcio Eolico Amayo S.A. has commissioned the TÜV NORD JI/CDM Certification Program to carry out the 5th periodic verification of the project: “Gold Standard Amayo 40 MW Wind Power Project – Nicaragua”, with regard to the relevant Gold Standard (GS) requirements for CDM project activities. As a result of this verification, the verifier confirms that: ☒ all operations of the project are implemented and installed as planned and described in the validated project design document and GS additional annexes to the PDD. ☒ the monitoring plan is in accordance with the the relevant GS requirements, ☒ the installed equipment essential for measuring parameters required for calculating emission reductions are calibrated appropriately, ☒ the monitoring plans as set out in the validated PDD and the validated additional annexes to the PDD has been followed. ☒ the project contributes to sustainability development. ☒ the GHG emission reductions are calculated without material misstatements in a conservative and appropriate manner. ☒ the monitoring system is in place and functional. The project has generated GHG emission reductions As the result of the periodic GS verification, the verifier confirms that the GHG emission reductions are calculated without material misstatements in a conservative and appropriate manner. TÜV NORD JI/CDM CP herewith confirms that the project has achieved emission reductions, which could be labeled Gold Standard in the				



	above mentioned reporting period as follows:	
	Total Emission reductions for the MP:	120,951 t CO _{2e}
Document information:	<i>Filename:</i>	<i>No. of pages:</i>
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Abbreviations:

AMAYO	Amayo Phase II Wind Power Project
AMELEC	“Asesoría y Materiales Eléctricos” Company authorized by the CNDC to perform audits to the Commercial Measurement System (SIMEC)
CA	Corrective Action / Clarification Action
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
CO₂	Carbon dioxide
CO₂eq	Carbon dioxide equivalent
CL	Clarification Request
ENATREL	National Company of Transmission of Electricity “Empresa Nacional de Transmisión eléctrica”
ER	Emission Reduction
FAR	Forward Action Request
GHG	Greenhouse gas(es)
INE	Nicaraguan Institute of Energy
MARENA	Ministry for the Environmental “Ministerio del Ambiente y los Recursos Naturales” (DNA)
MP	Monitoring Plan
MR	Monitoring Report
NIS	National Interconnected System
PDD	Project Design Document
PP	Project Participant
PPA	Power Purchase Agreement
QA/QC	Quality Assurance / Quality Control
SC-Commander	Software used for service operation and remote control on Suzlon SCS turbines
SCADA	Supervisory Control and Data Acquisition
SIMEC	Commercial Measurement System
S/N	Serial number
UNFCCC	United Nations Framework Convention on Climate Change

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1. INTRODUCTION

Consorcio Eólico Amayo S.A. has commissioned the TÜV NORD JI/CDM Certification Program (CP) to carry out the Gold Standard (GS) verification of the project

“Amayo 40 MW Wind Power Project - Nicaragua”

with regard to the relevant requirements for Gold Standard CDM project activities. The ‘Amayo 40 MW Wind Power Project - Nicaragua’ is a registered CDM project since 2009-04-12 (project number 2315)¹. On 2010-08-27 it was registered as a Gold Standard CDM project. The verification covers the monitoring period 2012-04-01 to 2013-04-30. The 5th periodic GS monitoring period is identical with the 5th monitoring period under CDM, which is also conducted by TÜV NORD JI/CDM CP. The GS verification is to be seen in conjunction with the results of the 5th periodic CDM verification.

GHG data was verified in detailed manner applying the set of requirements, audit practices and principles as required under the Validation and Verification Standard ^{/VVS/} of the UNFCCC.

This report summarizes the findings and conclusions of this Gold Standard verification of the above mentioned GS registered CDM project activity.

1.1. Objective

The objective of the verification is the review and ex-post determination by an independent entity of the GHG emission reductions and the contribution to sustainable development. It includes the verification of the:

- Implementation and operation of the project activity as given in the PDD,
- compliance of the actual monitoring systems and procedures with the provisions of the monitoring plan as a part of registered PDD, the GS monitoring matrix and the applied approved monitoring methodology;
- data given in the monitoring reports by checking the monitoring records, the emissions reduction calculation and supporting evidence
- accuracy of the monitoring equipment
- quality of evidence
- significance of reporting risks and risks of material misstatements.

1.2. Scope

The verification of this GS registered CDM project is based on the validated project design document ^{/PDD/}, the validated additional annexes to the PDD for retroactive GS registration ^{/PDD A/} the CDM monitoring report ^{/MR-CDM/}, the sustainability monitoring

¹ <http://cdm.unfccc.int/Projects/DB/SGS-UKL1227712726.26/view>

report ^{/MRsm/}, the registered GS validation report ^{/VAL-GS/}, supporting documents made available to the verifier and information collected through performing interviews and during the on-site assessment. Furthermore publicly available information was considered as far as available and required.

The verification is carried out on the basis of the following requirements, applicable for this project activity:

- Article 12 of the Kyoto Protocol ^{/KP/},
- guidelines for the implementation of Article 12 of the Kyoto Protocol as presented in the Marrakech Accords under decision 17/CP.7 ^{/MA/}, and subsequent decisions made by the Executive Board and COP/MOP,
- Gold Standard Version 1.0 ^{/GS/}
- the simplified modalities and procedures for small scale CDM project activities of annex II to decision 21/CP.8 ^{/SMP/}
- other relevant rules, including the host country legislation,
- CDM Validation and Verification Standard ^{/VVS/}
- monitoring plan as given in the registered PDD ^{/PDD/}
- Gold Standard Monitoring matrix as given in the registered additional annexes to the PDD for retroactive GS registration ^{/PDD A/}
- Approved CDM Methodology AMS I.D ver.16: Grid connected renewable electricity generation ^{/AMSID/}

2. GHG PROJECT DESCRIPTION

2.1 Project Characteristics

Essential data of the project is presented in the following Table 2-1.

Table 2-1: Project Characteristics

Item	Data
Project title	Amayo 40 MW Wind Power Project – Nicaragua
Project size	☒ Large Scale ☐ Small Scale
Project Scope (according to UNFCCC sectoral scope numbers for CDM)	☒ 1 Energy Industries (renewable- /non-renewable sources)
	☐ 2 Energy distribution
	☐ 3 Energy demand
	☐ 4 Manufacturing industries
	☐ 5 Chemical industry
	☐ 6 Construction
	☐ 7 Transport
	☐ 8 Mining/Mineral production
	☐ 9 Metal production
	☐ 10 Fugitive emissions from fuels (solid, oil and gas)
	☐ 11 Fugitive emissions from production and consumption of halocarbons and hexafluoride
	☐ 12 Solvents use
	☐ 13 Waste handling and disposal
	☐ 14 Afforestation and Reforestation
	☐ 15 Agriculture
Applied Methodology	ACM0002 – Grid-connected electricity generation from renewable sources – version 7

Item	Data
Technical Area(s)	1.2 Energy Industries (renewable-/non-renewable sources)
CDM registration No.	2315
GS registration No.	GS 567
Crediting period	☒ Renewable Crediting Period (7 y) ☐ Fixed Crediting Period (10 y)

2.2 Project Verification History

Essential events since the registration of the project are presented in the following Table 2-2.

Table 2-2: Project verification history (CDM)

#	Item	Time	Status
1	Date of registration	2009-04-12	-
2	Start of crediting period	2009-04-12	-
3	1 st Monitoring period	2009-04-12 to 2009-09-30	Issued
4	Date of GS registration	2010-08-27	-
5	2 nd Monitoring period	2009-10-01 to 2010-08-31	Issued
6	Request for revision of / deviation from the monitoring plan	2011-09-08	Approved
7	3 th Monitoring period	2010-09-01 to 2011-04-30	Issued
8	4 th Monitoring period	2011-05-01 to 2012-03-31	Issued

2.3 Involved Parties and Project Participants

The following parties to the Kyoto Protocol and project participants are involved in this project activity (Table 2-3).

Table 2-3: Project Parties and project participants

Characteristic	Party	Project Participant
Host party	Nicaragua	Consorcio Eólico Amayo S.A.
Annex 1 Party	Switzerland	Shell Trading International Limited

2.4 Project Location

The details of the project location are given in table 2-4:

Table 2-4: Project Location

No.	Project Location
Host Country	Nicaragua
Region:	Rivas
Project location address:	129 Km south of Managua, south west coast of Lake Nicaragua
Latitude:	11° 19' 32" N
Longitude:	85° 43' 05" W

2.5 Technical Project Description

The Project is a 39.9 MW wind power project, expected to produce 169.51 GWh per year. The minimum expected operational lifetime is 20 years. The project consists in the installation of 19 turbines provided by SUZLON. Those turbines are a three-bladed rotor machine with a single fed induction generator. The line to be connected to the INE transformer will be a 230 kV, running from the wind farm control house to the INE transformer. The Project is located in the province of Rivas, approximately 129 km south of Managua, Nicaragua.

The key parameters for the project are given in table 2-5:

Table 2-5: Technical data of the plant

Parameter	Unit	Value
Total Power	MW	39.9 MW
No. of turbines	-	19
Rated Power per wind-generator	MW	2.1
Number of blades		3
Rotor conus angle	°	5.0
Swept area	m ²	6,082
Tip speed (at rated power)	m/s	72.0
Rotor diameter	m	88
Rotational speed	rpm	15.0-17.6

3 METHODOLOGY AND VERIFICATION SEQUENCE

3.1 Verification Steps

The verification consisted of the following steps:

- Appointment of team members and technical reviewers
- A desk review of the carbon monitoring report including the claimed emission reductions and the sustainability monitoring report submitted by the client and additional supporting documents
- Verification planning
- On-Site assessment
- Background investigation and follow-up interviews with personnel of the project proponent and its contractors
- Draft verification reporting
- Resolution of corrective actions (if any)
- Final verification reporting
- Technical review
- Final approval of the verification.

The sequence of the verification is given in the table 3.1 below:

Table 3.1: Verification sequence

Topic	Time
Assignment of verification	2013-03-01
Uploading of Monitoring Report	2013-05-17
On-site visit	2013-06-10 to 2013-06-12
Draft reporting finalised	2013-06-12
Final reporting finalised	2013-06-28
Technical review finalised	2013-07-12

3.2 Contract review

To assure that

- the project falls within the scopes for which accreditation is held,
- the necessary competences to carry out the verification can be provided,
- Impartiality issues are clear and in line with the CDM and GS accreditation requirements

a contract review was carried out before the contract was signed.

3.3 Appointment of team members and technical reviewers

On the basis of a competence analysis and individual availabilities a verification team, consistent of one team leader was appointed. Furthermore also the personnel for the technical review and the final approval were determined.

The list of involved personnel, the tasks assigned and the qualification status are summarized in the table (3-2) below.

Table 3-2: Involved Personnel

	Name	Company	Function ¹⁾	Qualification Status ²⁾	Scheme competence ³⁾	Technical competence ⁴⁾	Verification competence ⁵⁾	Host country Competence	On-site visit
☒ Mr. ☐ Ms.	Raul Gonzalez Mitre	BRTUV	TL	SA	☒	1.2	☒	☒	☒
☒ Mr. ☐ Ms.	Oliver Quireza Campos	BRTUV	OT	T	☐	-	☐	☐	☐
☒ Mr. ☐ Ms.	Emilio Martin	TUV NORD CERT	TR ^{B)}	SA	☒	1.2	☒	☐	☐
☐ Mr. ☒ Ms.	Alexandra Nebel	TUV NORD CERT	TR/ FA ^{B)}	SA	☒	-	☒	☐	☐

¹⁾ TL: Team Leader; TM: Team Member, TR: Technical review; OT: Observer-Team, OR: Observer-TR; FA: Final approval

²⁾ GHG Auditor Status: A: Assessor; LA: Lead Assessor; SA: Senior Assessor; T: Trainee; TE: Technical Expert

³⁾ GHG auditor status (at least Assessor)

⁴⁾ As per S01-MU03 or S01-VA070-A2 (such as 1.1, 1.2, ...)

⁵⁾ In case of verification projects

A) Team Member: GHG auditor (at least Assessor status), Technical Expert (incl. Host Country Expert or Verification Expert), not ETE

B) No team member

3.4 Verification Planning

In order to ensure a complete, transparent and timely execution of the verification task the team leader has planned the complete sequence of events necessary to arrive at a substantiated final verification opinion.

Various tools have been established in order to ensure an effective verification planning.

Project specific periodic GS verification checklist

In order to ensure transparency and consideration of all relevant assessment criteria, a project specific GS verification protocol is developed. The protocol shows, in a transparent manner, criteria and requirements, means and results of the verification. The verification protocol serves the following purposes:

- It organises, details and clarifies the requirements a GS CDM project is expected to meet for verification
- It ensures a transparent verification process where the verifying DOE documents how a particular requirement has been proved and the result of the verification.

The basic structure of this project specific verification protocol for the GS verification is described in table 3-3.

Table 3-3: Structure of the project specific GS periodic verification checklist

Table A-1: Periodic verification checklist				
Checklist Item	Reference	Verification Team Comments	Draft Conclusion	Final Conclusion
<i>The checklist items in Table A-1 are linked to the various requirements the monitoring of the project should meet. The checklist is organised in various sections as per the requirements of the topic and the individual project activity. It further includes guidance for the verification team.</i>	<i>Gives reference to the information source on which the assessment is based on.</i>	<i>The section is used to elaborate and discuss the checklist item in detail. It includes the assessment of the verification team and how the assessment was carried out. The reporting requirements of the VVM and GS shall be covered in this section.</i>	<i>Assessment based on evidence provided if the criterion is fulfilled (OK), or a CAR, CL or FAR (see below) is raised. The assessment refers to the draft verification stage.</i>	<i>In case of a corrective action or a clarification the final assessment at the final verification stage is given.</i>

The GS verification checklist (verification protocol) is the backbone of the complete verification starting from the desk review until final assessment. Detailed assessments and findings are discussed within this checklist and not necessarily repeated in the main text of this report.

The completed verification protocol is enclosed in the annex (table A-1) to this report.

3.5 Desk review

During the desk review all documents initially provided by the client and publicly available documents relevant for the verification were reviewed. The main documents are listed below:

- the last revision of the carbon and sustainability^{/MRsm/} monitoring report, including the claimed emission reductions for the project^{/MR-CDM/},
- the registered version of the PDD and attached documents, including the monitoring plan^{/PDD/},
- the additional annexes to the PDD for retroactive GS registration including the GS monitoring matrix^{/VAL-GS/}
- the registered GS validation report^{/VAL-GS/},
- the emission reduction calculation spreadsheet (if applicable)

Other supporting documents, such as publicly available information on the Gold standard website, the UNFCCC website and background information were also reviewed.

3.6 On-site assessment

As most essential part of the verification exercise it is indispensable to carry out an inspection on site in order to verify that the project is implemented in accordance with the applicable criteria. Furthermore the on-site assessment is necessary to check the monitoring data with respect to accuracy to ensure the calculation of emission reductions. Changes to the key sustainable development indicators and the achievement and implementation of mitigation / compensation measures are other integral parts of the on-site assessment.

Keeping in mind the principles of materiality and quality of evidence, typical activities on-site include but are not limited to:

- The on-site assessment included an investigation of whether all relevant equipment is installed and works as anticipated.
- The operating staff was interviewed and observed in order to check the risks of inappropriate operation and data collection procedures.
- Information processes for generating, aggregating and reporting the selected monitored parameters were reviewed.
- The duly calibration of all metering equipment was checked.
- The operator has provided evidence that all metering equipment was duly calibrated.
- The monitoring processes, routines and documentations were audited to check their proper application.
- The monitoring data were checked completely.
- The data aggregation trails were checked via spot sample down to the level of the meter recordings.

Before and during the on-site visit the verification team performed interviews with the project participants to confirm selected information and to resolve issues identified in the document review.

Representatives of Consorcio Eólico Amayo S.A., were interviewed. The main topics of the interviews are summarised in Table 3-4.

Table 3-4 Interviewed persons and interview topics

Interviewed Persons / Entities	Interview topics
1. Projects & Operations Personnel, Consorcio Eólico Amayo S.A.	- General aspects of the project - Technical equipment and operation - Changes since last verification - Monitoring and measurement equipment - Calibration procedures - Quality management system - Involved personnel and responsibilities - Training and practice of the operational personnel - Implementation of the monitoring plan - Monitoring data management - Data uncertainty and residual risks - GHG emission reduction calculation - Procedural aspects of the verification - Maintenance - Environmental aspects - Sustainability indicators

3.7 Draft verification reporting

On the basis of the desk review, the on-site visit, follow-up interviews and further background investigation the verification protocol is completed. This protocol along with a general project and procedural description of the verification and a detailed list of the verification findings form the draft verification report. This report is sent to the client for resolution of raised CARs, CLs and FARs.

3.8 Resolution of CARs, CLs and FARs

Nonconformities raised during the verification can either be seen as a non-fulfilment of criteria ensuring the proper implementation of a project or where a risk to deliver high quality emission reductions is identified.

Corrective Action Requests (CARs) are issued, if:

- Non-conformities with the monitoring plan or methodology are found in monitoring and reporting, or if the evidence provided to prove conformity is insufficient;
- Mistakes have been made in applying assumptions, data or calculations of emission reductions which will impair the estimate of emission reductions;
- Issues identified in a FAR during validation or previous verifications requiring actions by the project participants to be verified during verification have not been resolved.

The verification team uses the term Clarification Request (CL), which is issued if:

- information is insufficient or not clear enough to determine whether the applicable GS requirements have been met.

Forward Action Requests (FAR) indicate essential risks for further periodic verifications. Forward Action Requests are issued, if:

- the monitoring and reporting require attention and / or adjustment for the next verification period.

For a detailed list of all CARs, CLs and FARs raised in the course of the verification pl. Refer to chapter 4.

3.9 Final reporting

Upon successful closure of all raised CARs and CLs the final verification report including a positive validation opinion can be issued. In case not all essential issues could finally be resolved, a final report including a negative validation opinion is issued.

The final report summarizes the final assessments w.r.t. all applicable criteria.

3.10 Technical review

Before submission of the final verification report a technical review of the whole verification procedure is carried out. The technical reviewer is a competent GHG auditor being appointed for the scope this project falls under. The technical reviewer is not considered part of the verification team and thus not involved in the decision making process up to the technical review.

As a result of the technical review process the verification opinion and the topic specific assessments as prepared by the verification team leader may be confirmed or revised. Furthermore reporting improvements might be achieved.

3.11 Final approval

After successful technical review an overall (esp. procedural) assessment of the complete verification will be carried out by a senior assessor located in the accredited premises of TÜV NORD.

After this step the verification team will submit the verification report including the verification opinion to the client via e-mail and to Gold Standard via the GS registry.

4 VERIFICATION FINDINGS

In the following paragraphs the findings from the desk review of the CDM monitoring report^{/MR-CDM/}, the sustainability report^{/MRsm/}, the PDD^{/PDD/} and additional annexes for GS registration^{/VAL-GS/}, the GS validation report^{/VAL-GS/} and other supporting documents, as well as from the on-site assessment and the interviews are summarised.

The summary of CAR, CL and FAR issued are shown in Table 4-1:

Table 4-1: Summary of CAR, CL and FAR

Verification topic	No. of CAR	No. of CL	No. of FAR
H - Project history	0	0	0
U - Update on Changes and Incidents	0	0	0
R - Monitoring Reports – General	0	0	0
P - Monitoring Parameters	1	0	0
C - Emission Reduction Calculation	0	0	0
Q - Quality Management	0	0	0
SUM	1	0	0

The following tables include all raised CARs, CLs and FARs and the assessments of the same by the verification team. For an in depth evaluation of all verification items it should be referred to the verification protocols (see Annex).

Finding	CAR 1		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	The manner to calculate the parameter " Differences between spot price for energy (short-run marginal costs) and the price Amayo receives" is correct, however the calculation in the MR was not updated until the year 2013 because the last information was not available on the websites at the time of publication the MR. Correction is necessary. Associated checklist question(s): A.6		

Finding	CAR 1
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	1. The calculation has been updated in section A.6 of the MR with current data of April 2013.
DOE Assessment #1 <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	It was checked that the updated calculation was included according the MR. The raw data and calculation sheet was reviewed in detail. The verification team confirm that the updated calculation is in line with the registered monitoring plan of the PDD and the GS Monitoring Matrix. <u>CAR 1 is closed</u>
Conclusion <i>Tick the appropriate checkbox</i>	☐ To be checked during the next periodic verification ☐ Additional action should be taken (finding remains open) ☒ The finding is closed

5 SUMMARY OF VERIFICATION ASSESSMENTS

The following paragraphs include the summary of the final verification assessments after all CARs and CLs are closed out. For details of the assessments pl. refer to the discussion of the verification findings in chapter 4 and the verification protocol (Annex 1).

5.1 Implementation of the project

During the verification a site visit was carried out. On the basis of this site visit and the reviewed project documentation it can be confirmed that w.r.t. the realized technology, the project equipment, as well as the monitoring and metering equipment, the project has been implemented and operated as described in the registered PDD.

5.2 Project History

The project activity has started the first crediting period on 2009/04/12. On 2011/09/08 a request of deviation from the monitoring plan was required and approved.

5.3 Special events

No special events with effect on the monitoring of the project have been observed during the monitoring period.

5.4 Compliance with the monitoring plan and GS monitoring matrix

The monitoring system and all applied procedures are completely in compliance to the registered monitoring plan. Evidences were available to the verification team to check the compliance of the monitoring plan and GS monitoring matrix.

The reporting procedures reflect the requirements of the monitoring plan. All relevant data is collected continuously and stored during the whole monitoring period.

5.5 Compliance with the monitoring methodology

The indicators stated in the validated monitoring plan, which is based on the monitoring methodology ACM0002 version 7, is monitored and reported appropriately and cross-verified by means of monthly reports of electricity dispatched to the grid by Amayo 40 MW Wind Power Project – Nicaragua.

GS requirements are the monitoring of social-environmental contributions, which are described in the monitoring matrix. Corresponding evidences were available to verification team.

5.6 Monitoring parameters

The monitoring parameters described in the monitoring plan and GS monitoring matrix are:

GHG emission parameters:

- Net energy delivered to the grid

Sustainability indicators:

- A.1. Soil
- A.2. Biodiversity
- A.3. Water quality and quantity
- A.4. Air quality
- A.5. Other pollutants
- A.6. Access to energy services
- A.7. Balance of payments
- A.8. Technology transfer
- A.9. Additional activities
- A.10 Additional information on the implementation of other items

During the verification all relevant monitoring parameters have been verified with regard to appropriateness of the applied measurement / determination method, the accuracy, the applied QA/QC measures as well as the correctness of the values applied for ER calculation. The results as well as the verification procedure are described parameter-wise in the project specific GS verification checklist.

After appropriate corrections were carried out by the project participant it can be confirmed that all monitoring parameters have been measured / determined without material misstatements and in line with all applicable standards and relevant requirements.

5.7 Monitoring reports

A draft Gold Standard Sustainability Monitoring Report was submitted to the verification team by the project participants.

During the verification, mistakes and needs for clarification were identified (see CAR and CLs above). The PP has carried out the requested corrections so that it can be confirmed that the both monitoring reports are complete and transparent and in accordance with the registered PDD and the GS requirements.

5.8 Deviations in GHG emission reduction

No deviation in GHG emission reduction has been identified.

5.9 Contribution to sustainable development

It was evidenced that the project contributes to reforestation/recuperation of the area/soil, employs local population, contributes to improve the livelihood of the poor, improved access to energy services through rural electrification, and contributes to human and institutional capacity.

It can be confirmed that no changes occurred with negative impact on sustainable development of the project.

For a detailed assessment of the sustainability indicators please refer also to the project specific GS verification checklist.

5.10 Quality Management

The Management System for the monitoring of the GS CDM Project is in place. The organizational structure with the responsibilities has been properly identified. The key parameters are measured /determined and reviewed periodically as per the procedures. The electricity meters are calibrated and the certificates were presented to the verification team.

5.11 Hints for next periodic Verification

In the course of this GS verification no FAR has been raised.

6 VERIFICATION OPINION

Consorcio Eolico Amayo S.A. has commissioned the TÜV NORD JI/CDM Certification Program to carry out the 5th periodic GS verification of the project: “Gold Standard Amayo 40 MW Wind Power Project – Nicaragua”, with regard to the relevant Gold Standard (GS) requirements for CDM project activities. The project reduces GHG emissions by displacement of conventional generated electricity in the Nicaraguan interconnected grid by renewable power from a wind power plant. This 5th periodic GS verification covers the period from 2012-04-01 to 2013-04-30 (both days included).

In the course of the verification 1 Correction Action Request (CAR) was raised and no Clarification Requests (CL) were raised. In this verification No Forward Action Request (FAR) was raised. The verification is based on the draft monitoring report (CDM and Sustainability), the revised monitoring reports, the monitoring plan as set out in the validated PDD, the validation report, the additional annexes to the PDD, the GS validation report, the CDM verification report for this project and supporting documents made available to the TÜV NORD JI/CDM CP by the project participants.

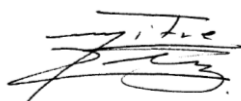
As a result of this periodic verification, the verifier confirms that:

- all operations of the project are implemented and installed as planned and described in the validated project design document and GS additional annexes to the PDD.
- the monitoring reports are in accordance with the relevant GS requirements.
- the monitoring plans as set out in the validated PDD and the validated additional annexes to the PDD has been followed.
- the project contributes to sustainability development
- the monitoring system is in place and functional. The project has generated GHG emission reductions.

As the result of the periodic GS verification, the verifier confirms that the GHG emission reductions are calculated without material misstatements in a conservative and appropriate manner. TÜV NORD JI/CDM CP herewith confirms that the project has achieved emission reductions, which could be labeled Gold Standard in the above mentioned reporting period as follows:

Emission reductions: 120,951 t CO_{2e}

Mexico, 2013-07-12



Raul Gonzalez Mitre

TÜV NORD JI/CDM Certification Program

Verification Team Leader

Hannover, 2013-07-12



Alexandra Nebel

TÜV NORD JI/CDM Certification Program

Senior Assessor

7 REFERENCES

Table 7-1: Documents provided by the project participant(s)

Reference	Document
/ACM/	<u>MARENA Cooperation Agreement (Acuerdo de Cooperación MARENA):</u> Evidence of the agreement established between MARENA and CEA for promoting the sale of the project CERS signed on 2008/05/08.
/Beach/	<u>Beach cleaning evidences:</u> - Beach cleanup report 2013/04/23 - Donation Agreement for the donation of resources for beach cleaning activities signed on 2013/03/21.
/CA/	Connection Agreement (transmission line) between ENATREL and CEA - “ <i>Convenio de conexión entre ENATREL y Consorcio Eólico Amayo S.A</i> ” - number 46397, issued 2007/08/17 (without validity date).
/Com_Mar/	Evidence letter issued by the MARENA on 2009/07/09 justifying that Amayo wind farm project does not requires performing the following tests: - Quality analysis of the sludge from the waste water treatment system. - CO2 emissions analysis
/downtime/	Downtimes excel spread sheet (evidence of all down times extracted by the SCADA system)
/EIA/	Environmental Impact Study, issued November 2006.
/EGL/	Energy Generation License – “ <i>Contrato de Licencia de Generación de energía eléctrica</i> ” – number 29498, issued 2008/08/05 (valid for 30 years).
/EL/	- Environmental License – “Permiso ambiental” – number 01-2007, issued 2007/01/08 (without expiration date). - Document part of the Environmental License – “<i>Resolución Administrativa</i>” – number 08-99, issued 1999/05/18. - Letter stamped and signed by MARENA 2008/10/21 (Evidence that the Environmental License is still valid).
/Fuel/	<u>Energy Services and Balance of Payments:</u> Excel spreadsheet “GS Monitoring diesel&Fueloil from 2010 to 2012 issued by Amayo. This document includes the following data:

Reference	Document
	• Calculation of the amount and value of fossil fuel avoided • Analysis of spot price energy and Amayo price
/IM/	Installation Manual – S88-2.1 MW – Suzlon Windkraft GmbH, Doberaner Str. 115, 18057 Rostock Germany.
/ISO/	ISO 9001:2008 NMX-0207/2012CRE00086 and ISO 14001:2004 NMX-0207/2012CRE00083 issued on 2012/12/21, both valid until 2015/12/21
/logbook/	Logbook of Operations Amayo (covering the monitoring period).
/MCL/	Turbine logbook: • Turbine specific data; • Maintenance Check List - S88-2.1 MW; • Service works & • Repairs
/MEP/	Monitoring Environmental Plan 2012 <i>“Plan de Monitoreo Ambiental”</i> and its prove of receipt by MARENA and (bird impact monitoring, water quality monitoring, residual domestic water quality monitoring, sludge quality monitoring of the water treatment system, air quality monitoring, noise and hearing monitoring).
/MEPRI/	Monthly Energy Production calculation spread sheet & Monthly Energy Production Report corresponding to the monitoring period (evidence of monthly energy generation).
/MoRe/	Monthly Reports Amayo (Evidence of the operation data such as energy generation, operation statistics, incidents, etc.)
/MR/	Draft Monitoring Report “Amayo 40 MW Wind Power Project – Nicaragua”, version 01, 2013/05/06.
/MS/	Turbines main specification S88, 60 Hz – Standard Temperature Version 80m, Tubular Tower.
/Mtto/	• Maintenance Program Amayo I, 2013-2014 by Suzlon. • Maintenance Program Amayo I, 2012-2013 by Suzlon.
/Noise/	Environmental Noise Analysis: • Environmental Noise Report

Reference	Document
/Nursery/	Invoices of trees and nursery materials donated to the municipality 2013/04/09
/O&M/	Technical documentation - Maintenance Manual - S88-2.1 MW, number WD00114, issued 2008/04/07.
/OPI/	AMAYO Operational Procedures (relevant for the project activity): • Procedure for discharge the SCADA files of turbine generation (AMY1-OPE-P14). • Procedure to up load data to the CNDC web page (AMY1-OPE-P06). • ION meter readings (AMY1-OPE-P02) • NEXUS meter file data generation (AMY1-OPE-P19)
/OPL/	Operational Procedures List by AMAYO.
/ORI/	Operational Regulation # 26-2000 “ <i>Normativa de Operación</i> ”, issued November 2000 by INE.
/PCC/	Procedures for carbon credits (procedures for monitoring parameters, troubleshooting procedures, and data management).
/PPA1/	Power Purchase Agreement – between (Empresa Distribuidora de electricidad del Sur (Dissur) and Consorcio Eólico Amayo, S.A. issued 2007/02/28 (valid for 15 years).
/PPA2/	Power Purchase Agreement – between (Empresa Distribuidora de electricidad del Norte (Disnorte) and Consorcio Eólico Amayo, S.A. issued 2007/09/03 (valid for 15 years).
/PPA_A2/	Power Purchase Agreement of Amayo Phase II – between (Empresa Distribuidora de Electricidad del Sur (Dissur) and Consorcio Eólico Amayo (Fase II), S.A. issued 2009/07/22 (valid for 15 years).
/Ref_Af/	<u>Reforestation/Afforestation activities:</u> • Invoices of trees and nursery materials donated to the municipality 2013/04/09 • Request of trees letter 2013/02/27 • Reforestation report 2012-2013
/SCI/	SC-Comander User Manual, date 2008/06/19
/SCSI/	Functional description SC-SCADA Reporting – Suzlon Energy A/S - issued 2009/04/01 Revision 00.

Reference	Document
/SR/	• Sustainability monitoring report “Amayo 40 MW Wind Power Project – Nicaragua”, version 01, 2013/05/29. • Sustainability monitoring report “Amayo 40 MW Wind Power Project – Nicaragua”, version 02, 2013/06/17.
/Tech/	<u>Technology Transfer activities. Visits from:</u> • Farem - Esteli University. Students of renewable energy May 31th, 2012 • University el Salvador. Students of Renewable energy, Oct 7th, 2012 • Upoli - Rivas University. Students of Systems Engineering. Apr 17th, 2013 • Colegio Raul Barrios. High school. Apr 22th, 2013
/Trees/	Trees maintenance report from contractor 2013/04/21
/TSP/	Alarm Description & Trouble Shooting S88 CSM88L28021, Version 01, issued 2008/09/30 by Suzlon.
/Water/	Evidence of lake and river water, and project waste water quality analysis: • Report of laboratory analysis 2013/04/05 of UNAN.
/Workers/	<u>Audiometric Exams General Summary:</u> • Audiometric Exams Report prepared by MEDLAB done on 2013/03/26
/45-94/	Environmental Impact Assessment Regulation number 45-94 “ <i>Reglamento de Permiso y Evaluación de Impacto Ambiental</i> ”, issued 1994/10/31. (Regulation that requires an EIA for any project implemented in Nicaragua)

Table 7-2: Background investigation and assessment documents

Reference	Document
/ACM0002/	Consolidated baseline methodology for grid-connected electricity generation from renewable sources ACM0002, version 07.
/CPM/	TÜV NORD JI / CDM CP Manual (incl. CP procedures and forms)
/IPPC/	1. 1996 IPCC Guidelines for National Greenhouse Gas Inventories: work book 2. 2006 IPCC Guidelines for National Greenhouse Gas Inventories: work

Reference	Document
	book
/KPI/	Kyoto Protocol (1997)
/MA/	Decision 3/CMP. 1 (Marrakesh – Accords)
/PDD/	Project Design Document for CDM project: “Amayo 40 MW Wind Power Project - Nicaragua” version 3, dated 2008/10/31
/PDD A/	Additional PDD Annex “Amayo 40 MW Wind Power Project - Nicaragua” as required for Gold Standard validation issued on August 2010, Version 07.
/VAL/	Gold Standard Validation Report for CDM project “Amayo 40 MW Wind Power Project - Nicaragua” version 02, dated 2010/03/26
/VVS/	CDM Validation and Verification Standard (Version 03.0, EB 70, Annex 3)
/VerGS/	GS Verification Report 4nd Monitoring Period version 01
/Ver CDM/	Final CDM Verification Report 5 th Monitoring period
/Water_Std/	American Public Health Association (APHA) (2005). <i>Standard Methods for the Examination of Water and Wastewater</i> . Ed. Washington: APHA

Table 7-3: Websites used

Reference	Link	Organisation
/cndc/	www.cndc.org.ni	Dispatch National Center web site: “Centro Nacional de Despecho de Carga - Nicaragua”
/dna-HP/	www.marena.gob.ni	DNA of Nicaragua
/GS/	http://www.cdmgoldstandard.org/	The Gold Standard
/INE/	http://ine.gob.ni	INE, Nicaraguan Institute of Energy “Instituto Nicaragüense de Energía” home site
	http://ine.gob.ni/DGE/estadis	INE, Nicaraguan Institute of Energy “Instituto

Reference	Link	Organisation
	ticas/2008/Estadisticas%20Electricas_2008_Resumen.pdf • http://ine.gob.ni/DGE/estadisticas/2009/anual/Resumen_2009_02.pdf • http://ine.gob.ni/DGE/estadisticas/2010/Insumos_2010.pdf	Nicaragüense de Energía” Fuel Consumption data
	• http://ine.gob.ni/DGE/estadisticas/2008/Estadisticas%20Electricas_2008_Resumen.pdf • http://ine.gob.ni/DGE/estadisticas/2009/anual/Generacion_Neta_2009_2.pdf • http://ine.gob.ni/DGE/estadisticas/2010/Resumen_2010.pdf	INE, Nicaraguan Institute of Energy “ <i>Instituto Nicaragüense de Energía</i> ” Generation Statistics
/unfccc/	http://cdm.unfccc.int	UNFCCC
/US_EIA/	http://www.eia.gov/	U.S. Energy Information Administration home site
	• http://www.eia.gov/dnav/pet/pet_pri_resid_dcu_R30_a.htm • http://www.eia.gov/dnav/pet/pet_pri_spt_s1_a.htm	U.S. Energy Information Administration Fuels Spot Prices (Residual Fuel Oil and Diesel)

Table 7-4: List of interviewed persons

Reference	Mol ¹		Name	Organisation / Function
/IM01/	V	☐ Mr. ☒ Ms.	Mariana Barrios S.	Environmental and CDM Coordinator – Amayo
/IM01/	V	☒ Mr. ☐ Ms.	Felipe René Flores	Wind Farm Leader Operator – Amayo
/IM01/	V	☒ Mr. ☐ Ms.	Felix Saldaña J.	Wind Farm Operator – Amayo
/IM01/	V	☒ Mr. ☐ Ms.	Javier Pentzke	Wind Farm Plant Manager – Amayo
/IM01/	V	☒ Mr. ☐ Ms.	Carlos Tapia	Wind Farm Operator – Amayo

¹⁾ Means of Interview: (Telephone, E-Mail, Visit)

ANNEX

Verification Protocol

ANNEX 1: VERIFICATION PROTOCOL

Table A-2: (Project specific) Periodic Verification Checklist

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
1. Project history				
1.1 Open issues from GS validation Check (esp. in case of 1 st periodic verification) whether there are any open issues indicated in the validation report (e.g. FAR)?	/VAL-GS/ /VER-GS/	Not applicable	OK	OK
1.2 Open issues from previous verification Check in case of further periodic verifications whether there are any open issues indicated in previous verification (FAR)?	/MR-CDM/ /MRsm/	No open issues from previous verification is to be considered	OK	OK
1.3 Requests for Deviations / Revisions of MP Check if there have been any requests for deviations from the registered CDM monitoring plan or requests for revisions of the CDM monitoring plan. If any, make sure that they are considered during verification?	/unfccc/ /VAL-GS/ /VER-GS/	<i>Description:</i> No request for deviation was done during the MP <i>Verifier's action:</i> It was verified (as CDM project) by TÜV NORD, according to verification report ^{/VER-CDM/} . <i>Conclusion:</i> No temporary change in the monitoring were performed during this MP.	OK	OK
1.4 Initial verification In case an initial verification has been carried out, check if all FARs, recommendations etc. have been addressed appropriately.		Not applicable.	n.a.	n.a
1.5 Initial project implementation		Not applicable.	n.a.	n.a

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
<i>In case of first GS verification: Assess whether the project has been implemented and operated as per the registered PDD and are all physical features of the project in place?</i> <i>In case of further periodic verifications: Go to next chapter.</i>				
2. Update on Changes and Incidents (during the Monitoring Period)				
2.1 Technical equipment <i>Check if relevant technical equipment of the project activity has been exchanged or modified during the monitoring period.</i> <i>Check whether any changes occurred that may have impact on the GS qualification of the project, in particular with reference to any potential changes in key parameters leading to an overall impact on sustainable development of the project.</i> <i>Consider e.g. interviews with operational personnel, QMS records, maintenance records, instrument specifications.</i> <i>In case of changes, check whether the project is still in line with the registered PDD and assure that these changes have been considered in the monitoring report, the emission reduction calculation and/or the scoring of the sustainability indicators</i>	/IM01/ /SR/ /MR/ /logbook/ /Ver CDM/	<i>Description:</i> By means of equipment specifications and during the audit it was evidenced, that no technical changes has been performed during the MP. <i>Verifier's action:</i> It was verified (as CDM project) by TÜV NORD, according to verification report^{VER-CDM/}. <i>Conclusion:</i> no technical changes have been performed during the MP.	OK	OK
2.2 Operation modes	/IM01/	<i>Description:</i> Amayo has complete control of the operation of the	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
<i>Check if relevant operation modes of the project activity have been exchanged or modified during the monitoring period.</i> <i>Check whether any changes occurred that may have impact on the GS qualification of the project, in particular with reference to any potential changes in key parameters leading to an overall impact on sustainable development of the project.</i> <i>Consider e.g. interviews with operational personnel, operation log sheets, data management system records.</i> <i>In case of changes, check whether the project is still in line with the registered PDD and assure that these changes have been considered in the monitoring report, the emission reduction calculation and/or the scoring of the sustainability indicators</i>	/PDD/ /VAL/	wind farm. SUZLON is responsible for the operation and maintenances of the wind park. A SCADA system (SC-Commander system) is implemented to control, collect, store, analyze and distribute all available data. The SC-SCADA Reporting server is a central Suzlon database where wind power project plant data is hosted for reporting. The SC-SCADA Reporting server is located in a central location and is operated and maintained by Suzlon. The verification team has identified that the mode of operation for the project activity have not been changed or modified during this 5th monitoring period. <i>Verifier's action:</i> By means of interviews with the operational personnel and technical information review it was evidenced, that the operation modes were not changed since 1st verification and they are in line with the approved PDD and the revised monitoring plan. <i>Conclusion:</i> No operation modes were changed. The PP has performed interviews and reviewed documents. No discrepancies were identified..		
2.3 Incidents <i>Identify if there have been any significant incidents, deviant operation modes and / or downtimes of the equipment?</i> <i>Consider e.g. interviews with operational personnel, operational log sheets, analysis of performance data.</i>	/IM01/ /changes / /downtime/ e/	<i>Description:</i> During the monitoring period no incidents occurred: Also, there is a document named "Downtime"^{/downtime/} which is directly downloaded from the SCADA System of Suzlon, This downtime document includes daily, monthly and annual data. This document details all the downtime activities, the duration, the type (scheduled or unscheduled), system component, etc. The Operational Logbooks^{/logbook/} were reviewed, these Logbooks includes the daily operational records, these are	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
		prepared manually by the project operators and then all this data is recorded in the Amayo Daily Reports^{/DR/}. <i>Verifier's action:</i> An Interview with the Operation Chief from the wind park was performed. The operational logbooks were reviewed so as the SUZLON repair documentation^{/changes/}. <i>Conclusion:</i> No incidents occurred during the monitoring period occurred.		
2.4 Personnel <i>Find out, if relevant personnel w.r.t. monitoring has been exchanged?</i> <i>In case of changes, assure that the implemented monitoring procedures have not been affected.</i>	/IM01/	<i>Description:</i> No relevant personnel for the monitoring activities were exchanged during the monitoring period. <i>Verifier's action:</i> Interview with the employee was performed. The employment list was checked and training evidence was also checked. <i>Conclusion:</i> No personnel were exchanged during the monitoring period.	OK	OK
2.5 Legislation Find out whether relevant legislation with effect on the project activity in the host country has been changed.	/IM01/ /EIA/ /MEP/ /EGL/ /EL/ /45-94/	<i>Description:</i> The approved Environmental Impact Study^{/EIA/} (EIA) of the project activity establishes that the PP has to provide reports regarding the following subjects: • Study of birds collision • Water quality analysis in lakes and rivers • CO emissions monitoring • Domestic waste water • Sludge from domestic waste water treatment system • Environmental Noise • Audiometric exams	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
		The EIA defines that these reports have to be delivered and prepared annually. A monitoring Environmental Plan^{/MEP/} is done annually to control the fulfilment of those requirements stated in the (EIA). Records of the fulfilment were checked. The environmental legislation applicable to the project activity is the Decree No. 45-94^{/45-94/} of 1994-10-31. Currently this legislation has been changed on December 2006, but since the approved EIA is dated on November 2006 the project activity is ruled by the Decree No. 45-94^{/45-94/}. <i>Verifier's action:</i> the verification team checked the licenses which are still valid. The PP has provided the reports to the environmental authority. Proof of receipt by the environmental body was reviewed and accepted. <i>Conclusion:</i> Relevant legislation was considered. No changes were detected. The PP complies with local regulation.		
3. Monitoring Report – General				
3.1 Monitoring period <i>Check if the monitoring period is in line with a) the crediting period and/or b) previous monitoring periods?</i>	/unfccc/ /SR/	Description: The monitoring period lasts from 2012-04-01 to 2013-04-30. Both days are included. Verifier's action The UNFCCC web site was checked. Conclusion: According to the UNFCCC web site, the monitoring period is in line with the crediting period.	OK	OK
3.2 References <i>Check if the carbon monitoring report and sustainability monitoring report provides the correct references.</i>	/SR/	Description: All references are given in the monitoring reports. Verifier's action: The draft monitoring reports provided by the PP were checked. Conclusion:	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
		All references provided are correct.		
3.3 Completeness <i>Assess if the carbon monitoring report and sustainability monitoring report are complete, i.e. have all relevant issues been addressed? The MR shall include: (i) The implementation status of the project during the monitoring period (ii) Monitoring systems and procedures incl. QA/QC system employed (iii) all parameters to be monitored and reported at the intervals required by the MP and the Meth (iv) information on calibration of monitoring instruments (v) Emission factors, IPCC default values etc. (vi) reference to any deviation request approved by the EB, (vii) calculation of ER including reference to formulae and methods used (viii) comparison of the actual ER claimed in the MP with the estimate in the registered PDD and explanation in case of significant increase.</i>	/SR/	Yes all relevant issues are covered; in detail: ☒ (i) Implementation status ☒ (ii) Monitoring systems and procedures (esp. QA/QC) ☒ (iii) All parameters and corresponding intervals ☒ (iv) Information on calibration of monitoring instruments ☒ (v) Emission factors, IPCC default values etc. ☒ (vi) Reference to deviations, if applicable ☒ (vii) Calculation of emission reductions ☒ (viii) Comparison of ER with PDD estimation	OK	OK
3.4 Comparison of estimated and actual ER <i>Have differences between the monitored ER and the ex-ante ER been reported and appropriately justified? Please assess potential impacts on baseline and additionality.</i>	/XLS/ /MR/ /PDD/	<i>Description:</i> It is stated in the PDD a yearly emission reduction of 120,811. In the context of the monitoring period 130,878 tCO ₂ were estimated based on the registered PDD. The emission reduction of this verification period is 120,951 which is lower than the estimation based on the PDD. <i>Verifier's action:</i> Invoices were checked. Interviews with operation personnel were also performed. <i>Conclusion:</i> The emission reduction of this verification period is lower than the estimation stated in the PDD	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
3.4 Transparency <i>Assess if the carbon monitoring report and sustainability monitoring report are transparent, i.e. clear and unequivocal in all respect?</i>	/SR/	<i>Description:</i> The monitoring report is free of unequivocal and unclear issues. <i>Verifier's action:</i> The draft monitoring report provided by the PP was checked. <i>Conclusion:</i> The monitoring report can be assessed to be transparent. No ambiguous statements have been identified	OK	OK
3.5 Misstatements on general issues <i>Assess whether the carbon monitoring report and sustainability monitoring report are free of material misstatements regarding issues other than the monitoring parameters.</i> <i>Discuss the monitoring parameters in detail in chapter "Monitoring Parameters".</i>	/SR/	No issues were detected in the MR 	OK	OK
3.6 Deviations from the validated monitoring plan and GS monitoring matrix <i>Assess whether the carbon monitoring report and sustainability monitoring report are in line with the validated monitoring plan and the GS monitoring matrix?</i>	/SR/ /PDD/	<i>Description:</i> The monitoring report is in line with the validated monitoring plan and the GS monitoring matrix <i>Verifier's action:</i> The draft monitoring report provided by the PP was crosschecked with the revised monitoring plan and the GS monitoring matrix. <i>Conclusion:</i> No deviations from the validated monitoring plan and GS monitoring matrix have been identified.	OK	OK
3.7 Deviations from the approved methodology <i>Assess whether the MR is in line with the applied monitoring methodology?</i>	/SR/ /PDD A/	<i>Description:</i> The monitoring report is in line with the applied methodology. <i>Verifier's action:</i> The draft monitoring report provided by the PP was crosschecked with the applied methodology. <i>Conclusion:</i> No deviations from the approved methodology have	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
		been identified.		
4. Monitoring Parameters (List all parameters of the PDD chapter B.7.1; pl. copy the 6 lines below for each parameter)				
a) Measurement / Determination method Describe how the monitoring parameter was measured / determined. Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.	/VER-CDM/	Description: It was verified (as CDM project) by TÜV NORD, according to verification report ^{/VER-CDM/} . Verifier's action: The CDM Verification Report was checked. Conclusion: The measurement method is in line with the registered monitoring plan.	OK	OK
b) Correctness Determine whether the value given in the carbon monitoring report is correct. In case of mistakes pl. provide details and descriptions of the CARs raised.	/VER-CDM/	Description: It was verified (as CDM project) by TÜV NORD, according to verification report ^{/VER-CDM/} . Verifier's action: The CDM Verification Report was checked. Conclusion: The measurement method is in line with the registered monitoring plan.	OK	OK
c) QA/QC Procedure Describe whether all applicable QA/QC procedures are met. Assess further if the calibration and maintenance of the monitoring equipment has been carried out by competent personnel.	/VER-CDM/	Description: It was verified (as CDM project) by TÜV NORD, according to verification report ^{/VER-CDM/} . Verifier's action: The CDM Verification Report was checked. Conclusion: The measurement method is in line with the registered monitoring plan.	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
d) Accuracy <i>In case of measured (or estimated) values, check whether significant inaccuracies occur; in this case, make sure that appropriate discounts have been considered for ER calculation.</i>	/VER-CDM/	<i>Description:</i> It was verified (as CDM project) by TÜV NORD, according to verification report^{/VER-CDM/}. <i>Verifier's action:</i> The CDM Verification Report was checked. <i>Conclusion:</i> The measurement method is in line with the registered monitoring plan.	OK	OK
Sustainability indicators				
A.1 Actions to promote sustainable use of land				
a) Measurement / Determination method <i>Describe how the monitoring parameter was measured / determined.</i> <i>Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used.</i> <i>Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.</i>	/IM01/ /IM02/ /Beach/ /VerGS/ /Trees/ /PDD A/ /formula/	<i>Description:</i> This parameter is measured thorough the realization of the following activities: Beach and roads clean ups: clean of beaches are coordinated by AMAYO and the Council of Rivas inviting voluntaries from towns located around the project activity. AMAYO gives an economic donation to the Council of Rivas in order to perform activities related. Equipment, transportation and food is given to the voluntaries. Documents^{/Beach/} related to the clean of beaches were provided. This parameter is measured annually. Furthermore photos of the activities performed were also shown to the verification team. No discrepancies were identified. Donation of trees: this parameter is measured through actions performed regarding trees donation. This parameter is measured annually. Economic donation to purchase trees was available to the verification team. The first semester of the year is considered dry season and it is not feasible to plant trees during this	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
		time. Trees will be acquired and planted during rainy season (May-November). Evidence of trees acquisition and plantation was also available. A request letter is always sent by the Council of Rivas describing the donation requirement of the region. Then an agreement is signed between AMAYO and the Council of Rivas regarding the donation activities agreed. Finally a confirmation letter by the council is given to confirm donations. <i>Verifier's action:</i> Interviews were performed during on site visit. Donation records and photos were also available to the verification team. The additional PDD Annex^{/PDD A/} was checked. <i>Conclusion:</i> The measurement method is in line with the additional PDD Annex^{/PDD A/}.		
b) Accuracy and QA/QC Procedure <i>Describe whether all applicable QA/QC procedures are met. Assess further if the calibration and maintenance of the monitoring equipment has been carried out by competent personnel.</i>	/SR/	It is not applicable.	OK	OK
c) Correctness <i>Determine whether the value or information given in the sustainability monitoring report is correct.</i> <i>In case of mistakes pl. provide details and descriptions of the CARs raised.</i>	/SR/	☒ Correct ☐ Not correct <i>Description:</i> The information given in the monitoring report is consistent with the sources given by the PP. <i>Verifier's action</i> The Sustainability MR^{/SR/} was checked accordingly. <i>Conclusion:</i> The information complies with the description given in the monitoring reports.	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
A.2 Number of trees planted during reforestation / afforestation				
a) Measurement / Determination method Describe how the monitoring parameter was measured / determined. Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.	/ SR / / PDD A / / Ref_Af /	<i>Description:</i> This parameter is measured through the number of trees planted. According to the Annex to the PDD ^{/PDD A/} the monitoring frequency is only once. <i>Verifier's action:</i> Interviews were performed during on site visit. The additional PDD Annex ^{/PDD A/} was checked. Also the Reforestation Plan ^{/Ref_Af/} was provided by the PP. <i>Conclusion:</i> The measurement method is in line with the additional PDD Annex ^{/PDD A/} .	OK	OK
c) Accuracy and QA/QC Procedure Describe whether all applicable QA/QC procedures are met. Assess further if the calibration and maintenance of the monitoring equipment has been carried out by competent personnel.	/ SR /	No significant inaccuracies were identified. .	OK	OK
c) Correctness Determine whether the value or information given in the sustainability monitoring report is correct. In case of mistakes pl. provide details and descriptions of the CARs raised.	/ SR /	☐ Correct ☒ Not correct <i>Description:</i> The information included in the Sustainability MR ^{/SR/} corresponds to this verification period. <i>Verifier's action:</i> The Sustainability MR ^{/SR/} was checked accordingly. <i>Conclusion:</i> No discrepancies were identified between information stated in the Sustainability MR ^{/SR/} and the real situation.	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
A.1.1 Number and description of maintenance activities undertaken by project members to the reforestation				
a) Measurement / Determination method <i>Describe how the monitoring parameter was measured / determined.</i> <i>Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used.</i> <i>Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.</i>	/SR/ /PDD A/ /Ref_Af/	<i>Description:</i> The following will be the main activities that the PP will perform in order to maintain the reforestation activities: 1. Protection against weed 2. Irrigation activities 3. Re-plantation activities 4. Hiring an employee to perform maintenance activities The Environmental Coordinator will monitor and control the execution of the maintenance activities. A report is prepared including all maintenance activities undertaken by project members to the reforested areas. The report includes also photos of such activities. <i>Verifier's action:</i> Verifier's action Interviews were performed during on site visit. The PDD Annex^{/PDD A/} was checked. The Reforestation Report has been reviewed. <i>Conclusion:</i> The measurement method is in line with the additional PDD Annex^{/PDD A/}.	OK	OK
b) Accuracy and QA/QC Procedure <i>Describe whether all applicable QA/QC procedures are met. Assess further if the calibration and maintenance of the monitoring equipment has been</i>	/SR/	It is not applicable.	n.a.	n.a.

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
<i>carried out by competent personnel.</i>				
c) Correctness <i>Determine whether the value or information given in the sustainability monitoring report is correct.</i> <i>In case of mistakes pl. provide details and descriptions of the CARs raised.</i>	/SR/	☒ Correct ☐ Not correct <i>Description:</i> The information given in the monitoring report is correct. <i>Verifier's action:</i> Sustainability monitoring report was checked. <i>Conclusion:</i> The information complies with the description given in the monitoring reports.	OK	OK
A.2 Number of birds collision				
a) Measurement / Determination method <i>Describe how the monitoring parameter was measured / determined.</i> <i>Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used.</i> <i>Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.</i>	/IM01/ /Birds/	<i>Description:</i> This parameter is measured thorough visual inspections taken place twice per week by the Field Supervisor. Events have been registered in a Report since start of operation. Furthermore, bird collisions alarms are installed in the wind park. <i>Verifier's action:</i> Interview with the Field Supervisor was performed and Monitoring Reports ^{/Birds/} were checked. <i>Conclusion:</i> Three bird's collisions have been registered in the Monitoring Reports.	OK	OK
b) Accuracy and QA/QC Procedure <i>Describe whether all applicable QA/QC procedures are met. Assess further if the calibration and maintenance of the monitoring equipment has been carried out by competent personnel.</i>	/SR/		n.a.	n.a.

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
c) Correctness <i>Determine whether the value or information given in the sustainability monitoring report is correct.</i> <i>In case of mistakes pl. provide details and descriptions of the CARs raised.</i>	/IM01/ /Birds/ /SR/	☒ Correct ☐ Not correct <i>Description:</i> The information given in the monitoring report is correct. <i>Verifier's action:</i> The Sustainability MR ^{/SR/} was checked. <i>Conclusion:</i> The information complies with the description given in the monitoring reports.	OK	OK
A.3 Water quality and quantity (Lake water, river water, project's waste water & sludge from project's waste water)				
a) Measurement / Determination method <i>Describe how the monitoring parameter was measured / determined.</i> <i>Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used.</i> <i>Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.</i>	/IM01/ /Water/ /EIA/ /Com_ Mar/ /MEP/	<i>Description:</i> This parameter is measured through laboratories analysis performed by a water laboratory which is hired by the PP. The laboratory analysis includes the following: 1. Water pH in lake and river waters; 2. Water temperature in lake and river waters; 3. Water BOD in lake and river waters; 4. Dissolved oxygen level in lake and river waters; 5. Water pH in project's waste waters; 6. Water temperature in project's waste waters; 7. Total Sedimentable solids (TSS) in project's waste waters; 8. Water BOD in project's waste waters; 9. Water COD in project's waste waters; 10. Grease and oil in project's waste waters	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
		11. Phosphorus level in project waste waters; 12. Fecal coliforms and total coliforms in project waste waters; 13. Methylene blue active substances in project's waste waters; 14. Humidity in sludge from project's waste water treatment system; 15. Nutrients in sludge from project's waste water treatment system and 16. Organic matter in sludge from project's waste water treatment system These analyses shall be performed annually to comply with the requirements stated in the EIA. Therefore for this verification period the analysis^{/Water/} were performed in 2012 and 2013. It is MARENA role to identify when a parameter is out of limit and to request correction actions when would be necessary. Furthermore the PP has asked to the Environmental Authority not to measure the parameter "<i>organic matter in sludge from project's waste water treatment system</i>" because a septic tank is installed at the project facilities and therefore no monitoring of such parameter is necessary. The authority has complied with such justification and has provided approval^{/Com_Mar/} on 2009/07/09. All the reports have been sent to the MARENA and no complain has been obtained. Proof of receipt^{/MEF/} by the authority has been provided. <i>Verifier's action:</i> Laboratory analysis^{/Water/} were provided by the PP. The EIA and its approval was checked. Official letter^{/Com_Mar/} and proof of receipt^{/MEF/} by the authority were also checked.		

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
		<i>Conclusion:</i> The determination method is in line with the requirements described in the SD development Matrix. All required evidence was provided by the PP. Finally the PP will not measure anymore the parameter “<i>organic matter in sludge from project's waste water treatment system</i>” as a result of the approval^{/Com_Mar/} given by the authority.		
b) Accuracy and QA/QC Procedure <i>Describe whether all applicable QA/QC procedures are met. Assess further if the calibration and maintenance of the monitoring equipment has been carried out by competent personnel.</i>	/SR/	It is not applicable.	n.a.	n.a.
c) Correctness <i>Determine whether the value or information given in the sustainability monitoring report is correct.</i> <i>In case of mistakes pl. provide details and descriptions of the CARs raised.</i>	/IM01/ /SR/	☒ Correct ☐ Not correct <i>Description:</i> The values given in the monitoring report are correct. <i>Verifier's action:</i> The information given in the monitoring report is correct. The verification team has reviewed all data. The Sustainability MR^{/SR/} was checked. <i>Conclusion:</i> The information totally comply with the description given in the monitoring reports.	OK	OK
A.4 Carbon Monoxide (CO)				
a) Measurement / Determination method <i>Describe how the monitoring parameter was</i>	/IM01/ /Com_Mar/	<i>Description:</i> The PP has asked to the Environmental Authority not to measure this parameter because no carbon monoxide emission	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
<i>measured / determined.</i> <i>Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used.</i> <i>Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.</i>		is related to the project activity and therefore no monitoring of such parameter is necessary. The authority has complied with such justification and has provided approval^{/Com_Mar/} on 2009/07/09. Verifier's action: Official letter^{/Com_Mar/} issued by the authority was also checked. Conclusion: The PP will not measure anymore this parameter as a result of the approval^{/Com_Mar/} given by the authority		
b) Accuracy and QA/QC Procedure <i>Describe whether all applicable QA/QC procedures are met. Assess further if the calibration and maintenance of the monitoring equipment has been carried out by competent personnel.</i>	/SR/	It is not applicable.	OK	OK
c) Correctness <i>Determine whether the value or information given in the sustainability monitoring report is correct.</i> <i>In case of mistakes pl. provide details and descriptions of the CARs raised.</i>	/SR/	☒ Correct ☐ Not correct Description: The information given in the monitoring report is correct. Verifier's action The Sustainability MR^{/SR/} was checked. Conclusion: The information complies with the description given in the monitoring reports.	OK	OK
A.5.1 Workers hearing level				
a) Measurement / Determination method <i>Describe how the monitoring parameter was</i>	/Workers/ /EIA/ /IM01/	Description: This parameter is measured through an audiometry test performed by an external laboratory which is hired by the PP.	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
<i>measured / determined.</i> <i>Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used.</i> <i>Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.</i>	/SR/	The test is performed to all workers who work at the wind farm. This parameter is measured annually. The results of the tests are given to the workers. This analysis shall be performed annually to comply with the requirements stated in the EIA. The analyses corresponding to this verification period were performed. The results from the analysis demonstrate that the project operation has not impacted the workers auditive level. It is MARENA role to identify when a parameter is out of limit and to request correction actions when would be necessary. <i>Verifier's action:</i> Audiometry tests ^{/Workers/} were provided by the PP. The EIA and its approval was checked. <i>Conclusion:</i> The determination method is in line with the requirements described in the SD development Matrix. All required evidence was provided by the PP.		
b) Accuracy and QA/QC Procedure <i>Describe whether all applicable QA/QC procedures are met. Assess further if the calibration and maintenance of the monitoring equipment has been carried out by competent personnel.</i>	/SR/	It is not applicable.	n.a.	n.a.
c) Correctness <i>Determine whether the value or information given in the sustainability monitoring report is correct.</i> <i>In case of mistakes pl. provide details and descriptions of the CARs raised.</i>	/SR/	☒ Correct ☐ Not correct <i>Description:</i> The information given in the monitoring report is correct. <i>Verifier's action:</i> The Sustainability MR^{/SR/} was checked. <i>Conclusion:</i>	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
		The information complies with the description given in the monitoring reports.		
A.5.2 Project Noise level (db)				
a) Measurement / Determination method Describe how the monitoring parameter was measured / determined. Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.	/Noise/ /EIA/ /IM01/	Description: This parameter is measured through an Environmental Noise Analysis performed by an external laboratory which is hired by the PP. This analysis shall be performed annually to comply with the requirements stated in the EIA. The analyses corresponding to this verification period were performed. The results from the analysis demonstrate that the project operation does not result in a considerable impact on the location noise level. It is MARENA role to identify when a parameter is out of limit and to request correction actions when would be necessary. Verifier's action: Environmental Noise Analysis ^{/Noise/} was provided by the PP. The EIA and its approval was checked. Conclusion: The determination method is in line with the requirements described in the SD development Matrix. All required evidence was provided by the PP.	OK	OK
b) Accuracy and QA/QC Procedure Describe whether all applicable QA/QC procedures are met. Assess further if the calibration and maintenance of the monitoring equipment has been carried out by competent personnel.	/SR/	It is not applicable.	n.a.	n.a.

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
c) Correctness <i>Determine whether the value or information given in the sustainability monitoring report is correct.</i> <i>In case of mistakes pl. provide details and descriptions of the CARs raised.</i>	/IM01/ /SR/	☒ Correct ☐ Not correct <i>Description:</i> The information given in the monitoring report is correct. <i>Verifier's action:</i> The Sustainability MR ^{/SR/} was checked. <i>Conclusion:</i> The information complies with the description given in the monitoring reports.	OK	OK
A.6 Access to energy services				
a) Measurement / Determination method <i>Describe how the monitoring parameter was measured / determined.</i> <i>Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used.</i> <i>Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.</i>	/PDD A/ /Fuel/ /IM01/ /SR/	<i>Description:</i> This indicator is measured thorough the monitoring of the following parameters: • Amount of fossil fuels consumption avoided by the project: this parameter is calculated^{/Fuel/} in order to get an estimation of the amount of barrels of each fuel (fuel oil and diesel) that the project contributed to avoid. The calculation is done using the average of fossil fuels consumption per megawatt hour for the three most recent years. The resulting value (which is the fossil fuel efficiency of the Nicaraguan grid) will be multiplied by the project activity annual generation. This parameter is monitored annually. • Differences between spot price for energy (short-run marginal costs) and the price Amayo receives: this parameter is obtained through calculation^{/Fuel/} of the difference between the spot price of energy and the prices which is received by Amayo. This parameter is monitored annually.	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
		The calculation results of both parameters were reviewed with the excel spreadsheet^{/Fuel/} provided by the PP. <i>Verifier's action:</i> Interviews were performed during on site visit. The excel spread sheet^{/Fuel/} where calculations were performed was also checked. The additional PDD Annex^{/PDD A} was checked. <i>Conclusion:</i> The determination method used for the parameter "Amount of fossil fuels consumption avoided by the project" in the excel spreadsheet^{/Fuel/} is in line with the requirements described in the SD development Matrix.		
b) Accuracy and QA/QC Procedure <i>Describe whether all applicable QA/QC procedures are met. Assess further if the calibration and maintenance of the monitoring equipment has been carried out by competent personnel.</i>	/SR/	It is not applicable.	n.a.	n.a.
c) Correctness <i>Determine whether the value or information given in the sustainability monitoring report is correct.</i> <i>In case of mistakes pl. provide details and descriptions of the CARs raised.</i>	/IM01/ /SR/ /Fuel/ /PDD A/	☐ Correct ☒ Not correct <i>Description:</i> The manner to calculate the parameter " Differences between spot price for energy (short-run marginal costs) and the price Amayo receives" is correct, however the calculation in the MR was not updated until the year 2013 because the last information was not available on the websites at the time of publication the MR.	CAR±	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
		<i>Verifier's action:</i> The Sustainability MR^{/SR/} and the additional PDD Annex^{/PDD A/} were checked. <i>Conclusion:</i> The calculation of the parameter was not updated in the MR CAR 1 Parameter "Differences between spot price for energy (short-run marginal costs) and the price Amayo receives": correction is necessary.		
A.7 Value of fossil fuel avoided by the project				
a) Measurement / Determination method Describe how the monitoring parameter was measured / determined. Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.	/PDD A/ /Fuel/ /IM01/	<i>Description:</i> This parameter is calculated^{/Fuel/} in order to get the value of fossil fuel avoided by the project activity taking into consideration the energy generated by Amayo. This parameter is calculated using the same information obtained as a result of the calculation of the parameter "Amount of fossil fuels consumption avoided by the project". Additional the price per volume unit of fossil fuel is used to get the final value of the parameter. The calculation results were reviewed with the excel spreadsheet^{/Fuel/} provided by the PP. <i>Verifier's action :</i> Interviews were performed during on-site visit. The excel spreadsheet^{/Fuel/} where calculations were performed was also checked. The additional PDD Annex^{/PDD A/} was checked. <i>Conclusion:</i>	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
		The parameter was determined according to the registered PDD annex ^{/PPD A/} .		
b) Accuracy and QA/QC Procedure <i>Describe whether all applicable QA/QC procedures are met. Assess further if the calibration and maintenance of the monitoring equipment has been carried out by competent personnel.</i>	/SR/	It is not applicable.	n.a.	n.a.
c) Correctness <i>Determine whether the value or information given in the sustainability monitoring report is correct.</i> <i>In case of mistakes pl. provide details and descriptions of the CARs raised.</i>	/IM01/ /SR/	☒ Correct ☐ Not correct <i>Description:</i> The information given in the monitoring report is correct. <i>Verifier's action:</i> The Sustainability MR ^{/SR/} was checked. <i>Conclusion:</i> The information complies with the description given in the monitoring reports.	OK	OK
1. ER Calculation				
5.1 Traceability <i>Assess if the calculation is fully traceable. In case of complex calculations an Excel calculation spreadsheet shall be used. All applied formulae must be visible.</i>	/Ver CDM/	<i>Description:</i> It was already verified (as CDM project) by TÜV NORD, according to verification report ^{/Ver CDM/} . <i>Verifier's action:</i> The CDM Verification Report was checked. <i>Conclusion:</i> No discrepancies were identified.	OK	OK
5.2 Parameter consistency <i>Assess whether all internal and external parameters</i>	/Ver CDM/	<i>Description:</i> It was already verified (as CDM project) by TÜV NORD,	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
<i>and data used for calculation are applied consistently in the monitoring report and the calculation spreadsheet?</i> <i>Consider only the correct data exchange between the monitoring report and the calculation spreadsheet (if any). The evaluation of the correctness of the parameter values itself should be discussed in the chapter "Monitoring Parameters".</i>		according to verification report^{/Ver CDM/}. <i>Verifier's action:</i> The CDM Verification Report was checked. <i>Conclusion:</i> No discrepancies were identified.		
5.3 Applied formulae <i>Check if the applied formulae are in accordance with the monitoring plan and / or the approved methodology.</i>	/Ver CDM/	<i>Description:</i> It was already verified (as CDM project) by TÜV NORD, according to verification report^{/Ver CDM/}. <i>Verifier's action:</i> The CDM Verification Report was checked. <i>Conclusion:</i> No discrepancies were identified.	OK	OK
5.4 Completeness of calculation <i>Assess whether the provided calculations are complete and reflect all requirements of the monitoring plan.</i> <i>Check especially that no standard or old values have been used for calculation where calculations based on up-to-date data is required.</i>	/Ver CDM/	<i>Description:</i> It was already verified (as CDM project) by TÜV NORD, according to verification report^{/Ver CDM/}. <i>Verifier's action:</i> The CDM Verification Report was checked. <i>Conclusion:</i> No discrepancies were identified.	OK	OK
2. Quality Management; defined organisational structure, responsibilities and competencies Internal QA/QC and docu-				

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
ment control				
6.1 Management System <i>Check if the GHG data monitoring system is embedded in a (certified) company quality management system, if so, check if all CDM monitoring procedures been fully integrated in the project participant's quality management system. If not how the GHG management system has been implemented.</i>	/IM01/ /IM02/ /OP/ /OPL/ /O&M/ /PCC/ /IM/ /SC/ /SCS/ /ISO/	<i>Description:</i> Amayo Wind Farm project has the following certificates ISO 9001:2008 and ISO 14001:2004. All CDM related monitoring procedures have been fully integrated in the project participant's quality management system. Amayo has developed and implemented operational procedures including procedures for extract data from the meters. There are procedures for operation and maintenance issued by Suzlon, which is the supplier of the wind turbines. There are also procedures for carbon credits developed by the PP and the consultancy firm which describe the responsibilities and procedures for data collection, calculation, reporting, and archiving. Procedures for carbon credits^{/PCC/} include the data management, QA/QC procedures, troubleshooting procedures (according to the applicable legislation) and calibration frequency. <i>Verifier's action:</i> Last versions of the Operational Procedures and the carbon credits procedure were checked. <i>Conclusion:</i> All GHG monitoring system is included and integrated in the management system of the wind farm and it could be evidenced and confirmed during site visit that GHG management system is completely implemented in the wind farm.	OK	OK
6.2 Roles and Positions <i>Check if all roles and positions of each person in the GHG data management process are clearly defined and implemented, from raw data generation to</i>	/IM01/ /PCC/	<i>Description:</i> All responsibilities and roles are clearly defined in the Procedures for carbon credits. It was verify by the verification team that only duly qualified	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
<i>submission of the final data.</i> <i>Check further if only duly qualified personnel is involved in the monitoring procedures.</i>		personnel is involved in the monitoring procedures. For this monitoring period no changes have been made in the responsibilities and roles of each person in the GHG data management process. <i>Verifier's action:</i> Last version of the Procedures for carbon credits^{/PCC/} was checked. <i>Conclusion:</i> It was verified by the verification team that only duly qualified personnel is involved in the monitoring procedures. Training evidence of all personnel involved in the project was checked.		
6.3 Trainings <i>Check if initial trainings have been carried out, in case deemed necessary.</i>	/IM01/ /IM02/	<i>Description:</i> Suzlon (supplier of the turbines) has regularly provided operation and maintenance training to the operational staff. Training was also given by Suzlon during the installation and beginning of operation of the wind farm. Several training regarding safety issues have been performed. The operational personnel have been the same since the start-up of the project activity and no relevant changes have been performed in the project operation. Hence, no additional technical training activities have been required. <i>Verifier's action:</i> Initial training evidences were provided by the PP and checked by the verification team. The personnel list was reviewed too. <i>Conclusion:</i> The PP had provided initial training to all personnel in the wind farm.	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
6.4 Troubleshooting procedures <i>Assess whether troubleshooting procedures have been implemented.</i>	/IM02/ /TSP/	<i>Description:</i> Troubleshooting procedures are described in the Alarm Description & Trouble Shooting Manual property of Suzlon. <i>Verifier's action:</i> The Alarm Description & Trouble Shooting Manual was checked accordingly. <i>Conclusion:</i> The Operational Procedures includes Troubleshooting procedures based in the Alarm Description & Trouble Shooting Manual property of Suzlon. No discrepancies were identified.	OK	OK
6.5 Maintenance procedures Are appropriate maintenance procedures in place?	/IM02/ /O&M/ /MCL/ /Mtto/	<i>Description:</i> Yes, the Operation & Maintenance Manual ^{/O&M/} describes the maintenance procedures. An initial maintenance at 500 hours has to be done. Then semesterly and annual maintenance need to be performed. All records of maintenance, service works and repairs are included in the turbine logbook ^{/MCL/} located in every wind tower, which is locked. SUZLON is responsible for the operation and maintenances of the wind park. <i>Verifier's action:</i> Registers of maintenance were provided to the verification team. Also, the maintenance program ^{/Mtto/} was checked. <i>Conclusion:</i> PP has implemented appropriate maintenance procedures in place.	OK	OK
6.7 Data archive and data protection	/IM01/	<i>Description:</i>	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
Check whether all records of monitoring parameters are archived according to the monitoring plan.	/SC/ /SCS/	The turbines are interconnected with optical fiber to an Optical Fiber Center (central PLC) located in the wind farm. The Optical Fiber Center (central PLC) transmits to a VPN (Virtual Private Network) the information in real time (without any interval of time). A SCADA system (SC-Commander system) is implemented to control, collect, store, analyze and distribute all available data. The SC-SCADA Reporting server is a central Suzlon database where wind power project plant data is hosted for reporting. The SC-SCADA Reporting server is located in a central location (Houston, USA) and is operated and maintained by Suzlon. The data is archived in electronic way. Archived data is kept during the crediting period and two years later. All meters were sealed. CNDC is connected to the main meter (via modem) with 1 dedicated channel which transmit the information in real time (without any interval of time). Amayo downloads daily the data from the main and back-up meters. Verifier's action: The SCADA system manuals and procedures^{/SC/ & /SCS/} were reviewed. Amayo Substation where the meters are located was also visited. Interview was performed with the Operation Chief. <i>Conclusion:</i> All records of monitoring parameters are archived and protected according to the monitoring plan. No discrepancies were identified.		

ANNEX 2: STATEMENTS OF COMPETENCE OF TEAM MEMBERS



Statement of Competence
Appointment and authorization according to the procedures of the TÜV NORD JI/CDM Certification Program.

Mr. Raul Gonzalez Mitre

SCHEME	STATUS	VALID UNTIL
CDM	Senior Assessor (Validation, Verification)	2015-06-27
VCS / ISO 14064-2	Senior Assessor	2015-06-27

Authorization status for technical areas within sectoral scopes:

CODE	TECHNICAL AREA
1.2	Renewable Energies
13.1	Waste handling and disposal

082 - Rev. 4, Date: 2012-08-16

082_001-F003_2012-08-16_m4.doc 001-FA03-wd-1 (2012-04-05)



Statement of Competence
Appointment and authorization according to the procedures of the TÜV NORD JI/CDM Certification Program.

Mr. Oliver Quireza Campos

SCHEME	STATUS	VALID UNTIL
CDM	Trainee	
VCS / ISO 14064-2	Trainee	

337 - Rev. 0, Date: 2013-04-04

337_001-FA000-F02_2013-04-04_m0.doc 001-FA000-F02-wd-1 (2013-10-20)



Statement of Competence
Appointment and authorization according to the procedures of the TÜV NORD JI/CDM Certification Program.

Mr. Emilio Martin

SCHEME	STATUS	VALID UNTIL
CDM	Senior Assessor (Validation, Verification)	2016-02-04
	Technical Reviewer	
VCS / ISO 14064-2	Senior Assessor	2016-02-04

Authorization status for technical areas within sectoral scopes:

CODE	TECHNICAL AREA	TN SUBCATEGORIES
1.2	Renewable Energies	1.2.1 Hydro 1.2.2 Wind 1.2.3 Geothermal 1.2.4 Solar 1.2.5 Total
13.1	Waste Handling and Disposal	13.1.1 Waste Management 13.1.2 Waste Water Management

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Statement of Competence
Appointment and authorization according to the procedures of the TÜV NORD JI/CDM Certification Program.

Ms. Alexandra Nebel

SCHEME	STATUS	VALID UNTIL
CDM	Senior Assessor (Validation, Verification)	2016-03-03
	Technical Reviewer	
Ji	Senior Assessor	2016-03-03
	Technical Reviewer	
VCS / ISO 14064-2	Senior Assessor	2016-03-03
	Technical Reviewer	

Authorization status for technical areas within sectoral scopes:

CODE	TECHNICAL AREA
14.1	Forestry

095 - Rev. 4, Date: 2013-03-04

095_001-FA000-F02_2013-03-04_m4.doc 001-FA000-F02-wd-1 (2013-10-20)