



Verification Report

- 4TH PERIODIC –

CONSORCIO EÓLICO AMAYO S.A.

AMAYO 40 MW WIND POWER PROJECT – NICARAGUA

UNFCCC REF. No. : 2315

Monitoring Period: 2011-05-01 to 2012-03-31
(incl. both days)

Report No: 8619 – 12/026

Date: 2012-06-08

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Verification Report:	Report No.	Rev. No.	Date of 1st issue:	Date of this rev.
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Project:	Title:	Registration date:	UNFCCC-No.:	
	Amayo 40 MW Wind Power Project – Nicaragua	2009-04-12	2315	
	Host Country:	Verification No.:		
	Nicaragua	4th periodic verification		
	Crediting period:	From:	To.:	
	☒ Renewable (7y) ☐ Fixed (10y)	2009-04-12	2016-04-11	
	Project Scale:			
	☒ Large Scale ☐ Small Scale			
Project Participant(s):	Host Party:	Other involved Parties:		
	Nicaragua	N/A		
	Client:	Project Owner:		
	Consorcio Eólico Amayo S.A.	Consorcio Eólico Amayo S.A.		
Applied methodology/ies:	Title:	No.:	Scope(s) / TA(s)	
	Grid-connected electricity generation from renewable sources	ACM0002 ver.7	1/ 1.2	
Monitoring:	Monitoring period (MP):	No. of days:	MP No.	
	2011-05-01 to 2012-03-31 (both days included)	336	04	
Monitoring report:	Title:	Draft version:	Final version:	
	Amayo 40 MW Wind Power Project – Nicaragua	2011-11-02	2012-06-08	
Verification team / Technical Review and Final Approval	Verification Team:	Technical review:	Final approval:	
	Ricardo Lopes TL Raul Gonzalez Mitre TM Abraham Garza TM Alvarez	Alexandra Nebel Emilio Martin	Alexandra Nebel	
Emission reductions: [t CO_{2e}]	Verified amount	As per draft MR:	As per PDD:	
	86,901 t	86,908 t	110,743 t /11 months	
Summary of Verification Opinion:	Consorcio Eólico Amayo S.A. has commissioned the TÜV NORD JI/CDM Certification Program to carry out the 4th periodic verification of the project: "Amayo 40 MW Wind Power Project – Nicaragua", with regard to the relevant 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, ☒ the monitoring plan is in accordance with the applied approved CDM methodology, ☒ the installed equipment essential for measuring parameters required for calculating emission reductions are calibrated appropriately, ☒ the monitoring system is in place and functional. The project has generated GHG emission reductions, and ☒ 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 in the above mentioned reporting period as follows: Emission reductions: 86,901 t CO_{2e}			



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Abbreviations:

AMAYO	Amayo 40 MW Wind Power Project - Nicaragua
AMELEC	<i>“Asesoría y Materiales Electricos”</i> Company authorized by the CNDC to perform audits to the Commercial Measurement System (SIMEC)
CA	Corrective Action / Clarification Action
CAR	Corrective Action Request
CEA	Consortio Eólico Amayo, S.A.
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
CNDC	National Dispatch Center <i>“Centro Nacional de Despacho de Carga”</i>
CO₂	Carbon dioxide
CO_{2eq}	Carbon dioxide equivalent
CL	Clarification Request
ENATREL	National Company of Transmission of Electricity <i>“Empresa Nacional de Transmisión eléctrica”</i>
ER	Emission Reduction
FAR	Forward Action Request
GHG	Greenhouse gas(es)
INE	Nicaraguan Institute of Energy
MP	Monitoring Plan
MR	Monitoring Report
NIS	National Interconnected System
PDD	Project Design Document
MARENA	Ministry for the Environmental <i>“Ministerio del Ambiente y los Recursos Naturales”</i> (DNA)
PP	Project Participant
RfDev	Requests for deviations from the applied methodology
RfRevMP	Requests for revisions of the monitoring plan
SC-Commander	Software used for service operation and remote control on Suzlon SCS turbines
SIMEC	<i>Commercial Measurement System</i>
SCADA	Supervisory Control and Data Acquisition
QA/QC	Quality Assurance / Quality Control



UNFCCC	United Nations Framework Convention on Climate Change
XLS	Emission Reduction Calculation Spread Sheet

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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 4th periodic verification of the project

“Amayo 40 MW Wind Power Project – Nicaragua”

with regard to the relevant requirements for CDM project activities. The verifiers have reviewed the implementation of the monitoring plan (MP) in the registered CDM project.

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

This report summarizes the findings and conclusions of this 4th periodic verification of the above mentioned UNFCCC registered 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. It includes the verification of the:

- implementation and operation of the project activity as given in the PDD,
- compliance with applied approved methodology and the provisions of the monitoring plan,
- data given in the monitoring report 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 registered project is based on the validated project design document ^{/PDD/}, the monitoring report ^{/MR/}, emission reduction calculation spreadsheet ^{/XLS/}, 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 3/CMP.1 ^{/MA/}, and subsequent decisions made by the Executive Board and COP/MOP,
- other relevant rules, including the host country legislation,
- CDM Validation and Verification Manual ^{/VVM/},
- monitoring plan as given in the registered PDD ^{/PDD/},
- Approved CDM Methodology.

2. GHG PROJECT DESCRIPTION

2.1. 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 of the project are given in Table 2-1:

Table 2-1: Technical data of the project activity

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

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

#	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	Request for revision of the monitoring plan	2011-09-08	Approved
5	2 nd Monitoring period	2009-10-01 to 2010-08-31	Issued
6	3 rd Monitoring period	2010-09-01 to 2011-04-30	Requesting issuance
7	4 th Monitoring period	2011-05-01 to 2012-03-31	Ongoing

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.

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

3. METHODOLOGY AND VERIFICATION SEQUENCE

3.1. Verification Steps

The verification consisted of the following steps:

- Contract review
- Appointment of team members and technical reviewers
- Publication of the monitoring report
- A desk review of the Monitoring Report^{/MR/} submitted by the client and additional supporting documents with the use of customised verification protocol^{/CPM/} according to the Validation and Verification Manual^{/VVM/},
- Verification planning,
- On-Site assessment,
- Background investigation and follow-up interviews with personnel of the project developer 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 sequenceTable

Topic	Time
Assignment of verification	2010-07-07
Publication of Monitoring Report	2012-04-13
On-site visit	2012-05-07 to 2012-05-11
Draft reporting finalised	2012-05-11
Final reporting finalised	2012-06-08
Technical review finalised	2012-06-08

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 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, consisting of one team leader and 2 additional team members, was appointed.

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.	Ricardo Lopes	BRTÜV, São Paulo	TL	LA	☒	1.2	☒	☒	☐
☒ Mr. ☐ Ms.	Abraham Garza Alvarez	BRTÜV, Mexico	TM	A	☒	1.2	☒	☒	☒
☒ Mr. ☐ Ms.	Raul Gonzalez Mitre	BRTÜV, Mexico	TM	LA	☒	1.2	☒	☒	☐
☐ Mr. ☒ Ms.	Alexandra Nebel	TÜV NORD, Germany	TR/ FA ³⁾	SA	☒		☒	☐	☐
☒ Mr. ☐ Ms.	Martin Emilio	TÜV NORD, Germany	TR ³⁾	LA	☒	1.2	☒	☐	☐

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

All team members contributed to the review of documents, the assessment of the project activity and to the preparation of this report under the leadership of the team leader.

Technical experts contributed to the assessment of special aspects of the project activity, e.g. technical or host country aspects.

In order to qualify further personnel the project team was accompanied by observers and/or trainees as indicated in the table above. They are usually not considered as team members.

Statements of competence for the above mentioned team members are enclosed in annex 6 of this report.

3.4. Publication of the Monitoring Report

In accordance with the CDM M&P (§ 62) the draft monitoring report, as received from the project participants, has been made publicly available on the dedicated UNFCCC CDM website prior to the verification activity commenced. Comments received are taken into account in the course of the verification, if applicable.

3.5. 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.

Risk analysis and detailed audit testing planning

For the identification of potential reporting risks and the necessary detailed audit testing procedures for residual risk areas table A-1 is used. The structure and content of this table is given in Table 3-3 below.

Table 3-3: Table A-1; Identification of verification risk areas

Table A-1: GHG calculation procedures and management control testing / Detailed audit testing of residual risk areas and random testing				
Identification of potential reporting risk	Identification, assessment and testing of management controls	Areas of residual risks	Additional verification testing performed	Conclusions and Areas Requiring Improvement (including Forward Action Requests)

Table A-1: GHG calculation procedures and management control testing / Detailed audit testing of residual risk areas and random testing

Identification of potential reporting risk	Identification, assessment and testing of management controls	Areas of residual risks	Additional verification testing performed	Conclusions and Areas Requiring Improvement (including Forward Action Requests)
The following potential risks were identified and divided and structured according to the possible areas of occurrence.	The potential risks of raw data generation have been identified in the course of the monitoring system implementation. The following measures were taken in order to minimize the corresponding risks. The following measures are implemented:	Despite the measures implemented in order to reduce the occurrence probability the following residual risks remain and have to be addressed in the course of every verification.	The additional verification testing performed is described. Testing may include: - Sample cross checking of manual transfers of data - Recalculation - Spreadsheet 'walk throughs' to check links and equations - Inspection of calibration and maintenance records for key equipment - Check sampling analysis results Discussions with process engineers who have detailed knowledge of process uncertainty/error bands.	Having investigated the residual risks, the conclusions should be noted here. Errors and uncertainties are highlighted.

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

Project specific periodic verification checklist

In order to ensure transparency and consideration of all relevant assessment criteria, a project specific verification protocol has been 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 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 periodic verification is described in Table 3-4.

Table 3-4: Structure of the project specific periodic verification checklist

Table A-2: Periodic verification checklist				
Checklist Item	Reference	Verification Team Comments	Draft Conclusion	Final Conclusion
<i>The checklist items in Table A-2 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 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 periodic 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-2) to this report.

3.6. 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 PDD including the monitoring plan^{/PDD/},
- the last revision of the validation report^{/VAL/},
- documentation of previous verifications^{/VER/}
- the monitoring report, including the claimed emission reductions for the project^{/MR/},
- the emission reduction calculation spreadsheet^{/XLS/}.

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

3.7. 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. The main tasks covered during the site visit 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 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 3-5.

Table 3-5: Interviewed persons and interview topics

Interviewed Persons / Entities	Interview topics
1. Projects & Operations Personnel, Consorcio Eólico Amayo S.A.; Nicaragua;	- General aspects of the project - Technical equipment and operation - Changes since validation / previous verification - Monitoring and measurement equipment - Remaining issues from validation/ previous verification - 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

3.8. 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 together

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.

3.9. 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 CDM 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.

3.10. Final reporting

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

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

3.11. 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 to be 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.

3.12. 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 request for issuance can be started.

4. VERIFICATION FINDINGS

In the following paragraphs the findings from the desk review of the monitoring report^{/MR/}, the calculation spreadsheet^{/XLS/}, PDD^{/PDD/}, the Validation Report^{/VAL/} 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
A – General description of the project activity	0	0	0
B – Implementation of the project activity	0	1	0
C – Description of the monitoring system	0	0	0
D – Data and parameters monitored	1	2	0
E - Emission Reductions Calculation	1	1	0
SUM	2	4	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:	CL B1		
Classification	☐ CAR	☒ CL	☐ FAR
Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	Section B.1: Information about the incidents that occurred during the monitoring period is missing in the MR.		
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	The information about the incidents occurred during this monitoring period has been completed in Table 3 of Section B.1.		

Finding:	CL B1
DOE Assessment #1 <i>The assessment shall encompass all open issues in annex A-2. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	The verification team has checked the revised MR and it has been identified that Section B.1 has been updated and has included also the gear box failure for WTG 12 that occurred on 2011/10/06. The operational logbooks^{/logbook/} so as the downtime reports from the SCADA^{/downtime/} have been checked and it has been identified that all incidents and downtimes that occurred during the monitoring period are now shown in Section B.1 of the MR. Hence, the verification team concludes that the MR is complete. CL B1 is closed.
Conclusion <i>Tick the appropriate checkbox</i>	☐ To be checked during the next periodic verification ☒ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements

Finding:	CL D1
Classification	☐ CAR ☒ CL ☐ FAR
Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	Parameters EG^{13.8kV}_{Phase1,y} and EC^{13.8kV}_{Phase1,y}: Serial number of the main and back-up Nexus power meters at Cell 3 are not in accordance with the installed equipment and the calibration certificates checked on-site.
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	The serial numbers for meters at Cell 3 have been corrected in Section D.2.
DOE Assessment #1 <i>The assessment shall encompass all open issues in annex A-2. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	The verification team has checked the serial numbers of the main and back-up Nexus power meters at Cell 3 against the calibration certificates^{/CC_nexus/} and the data was found correct and consistent. The validation team has confirmed that the differences in the serial numbers were only due to a typo error and the Nexus power meters have not been changed during the monitoring period. No further discrepancies have been identified. Hence, the verification team concludes that the information about the power meters stated in the MR is correct. Furthermore, it is confirmed that the power generation and consumption at the low voltage side for Amayo Phase I is being measured in line with the revised monitoring plan and the applied methodology CL D1 is closed.
Conclusion <i>Tick the appropriate checkbox</i>	☐ To be checked during the next periodic verification ☒ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements

Finding:	CL D2		
Classification	☐ CAR	☒ CL	☐ FAR
Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	Parameters EG^{13.8kV}_{Phase II,y} and EC^{13.8kV}_{Phase II,y}: Serial number of the main Nexus power meter at Cell 5 is not in accordance with the installed equipment and the calibration certificates checked on-site.		
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	The serial number for the main meter at Cell 5 has been corrected in Section D.2.		
DOE Assessment #1 <i>The assessment shall encompass all open issues in annex A-2. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	The verification team has checked the serial numbers of the main Nexus power meters at Cell 5 against the calibration certificates^{/CC_nexus/} and the data was found correct and consistent. The validation team has confirmed that the differences in the serial numbers were only due to a typo error and the Nexus power meters have not been changed during the monitoring period. No further discrepancies have been identified. Hence, the verification team concludes that the information about the power meters stated in the MR is correct. Furthermore, it is confirmed that the power generation and consumption at the low voltage side for Amayo Phase II is being measured in line with the revised monitoring plan and the applied methodology <u>CL D2 is closed.</u>		
Conclusion <i>Tick the appropriate checkbox</i>	☐ To be checked during the next periodic verification ☒ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements		

Finding:	CAR D3		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	Parameter EC^{13.8kV}_{Phase I,y}: correction is necessary as follows: • Value of January 2012 as per DTE (it shall be 1,090 kWh) • Value of February 2012 as per DTE (it shall be 770 kWh) • Value of March 2012 as per DTE is missing (it shall be 270 kWh)		
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	The correct value of parameter EC ^{13.8kV} _{Phase I,y} has been included in Table 2 of the CERS summary spreadsheet calculation.		

Finding:	CAR D3
DOE Assessment #1 <i>The assessment shall encompass all open issues in annex A-2. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	The revised ER calculation spreadsheet provided by the PP has been checked and it has been identified that the values for January, February and March 2012 for the power consumption data from DTE reports has been corrected. The verification team has checked the new values of the ER spreadsheet against the DTE reports^{/DTE/} and the data was found correct. No further mistakes or discrepancies have been identified. Hence, the verification team concludes that the value given in the monitoring report for the power consumption is correct and determined in a conservative manner. CAR D3 is closed.
Conclusion <i>Tick the appropriate checkbox</i>	☐ To be checked during the next periodic verification ☒ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements

Finding:	CAR E1
Classification	☒ CAR ☐ CL ☐ FAR
Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	The ER calculation spreadsheet does not show the application of the formulas used to determine the net power generation from the project activity as per the calculation procedure stated in the registered monitoring plan.
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	The summary spreadsheet calculation has been corrected and now the formulas are being applied in the calculation of net energy generation according to the monitoring plan.
DOE Assessment #1 <i>The assessment shall encompass all open issues in annex A-2. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	The revised ER calculation spreadsheet provided by the PP has been checked by the verification team and it has been identified that the ER calculation procedures has been corrected. The verification team has checked the applied formulas against the revised MP of the project activity and it has been identified that the ER calculation is in line with the procedures and equations defined in the revised MP. The ER calculation was found traceable and correct. No further mistakes or discrepancies have been identified. Hence, the verification team concludes that the emissions reduction calculation is fully traceable and all applied formulae are visible and in line with the revised MP. CAR E1 is closed.
Conclusion <i>Tick the appropriate checkbox</i>	☐ To be checked during the next periodic verification ☒ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements

Finding:	CL E2		
Classification	☐ CAR	☒ CL	☐ FAR
Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	The values for the total project emissions stated in Table D of Section E.4 of the MR are not in accordance with the project emission values applied in the ER calculation spreadsheet.		
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	Table D of Section E.4 of the Monitoring Report has been corrected with the correct values of projects emissions.		
DOE Assessment #1 <i>The assessment shall encompass all open issues in annex A-2. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	The revised MR provided by the PP has been checked by the verification team and it has been identified that Table D has been updated. The new values have been checked against the ER calculation spreadsheet and all data was found consistent and correct. No further discrepancies have been identified. Hence, the verification team concludes that all internal and external parameters and data used for the ER calculation are applied consistently in the monitoring report and the calculation spreadsheet. Furthermore, it is confirmed that the notations for all parameters in the PDD, MR, calculation spreadsheet are consistent. <u>CL E2 is closed.</u>		
Conclusion <i>Tick the appropriate checkbox</i>	☐ To be checked during the next periodic verification ☒ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements		

Minor Changes	Corrected
1. Section B.1: Please, update the status (registration date) of Amayo Phase II as it is already registered.	☒ Yes ☐ No
2. Section B.1: Please, rephrase the sentence before Table 3	☒ Yes ☐ No
3. Section D.2.: Remove the calibration dates that are out of the monitoring period.	☒ Yes ☐ No
4. Section E.1.: Please correct the data units in the following tables: Table A: The values are in kWh not in MWh as given in the header of the table for the column "Net energy". Table B: The values are in kWh not in MWh as given in the header of the table for the column "Conservative value".	☒ Yes ☐ No

5. SUMMARY OF VERIFICATION ASSESSMENTS

The following paragraphs include the summary of the final verification assessments after all CARs and CRs 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 equipments, as well as the monitoring and metering equipment, the project has been implemented and operated as described in the registered PDD.

By means of document review and the on-site visit it was verified, that the project activity involves the installation of 19 wind turbines with a capacity of 2.1 MW each, totalling 39.9 MW as per registered PDD, even if the “title” of the project refers to 40 MW.

It could be verified during the site visit that the PP installed another wind farm “Amayo Wind Farm Phase II” with 11 turbines and 23 MW of total capacity next to Amayo Wind Power Project. At the moment of verification, Amayo Phase II was already in operation. Hence, this situation resulted in a modification of the project monitoring arrangement and a request for revision of the monitoring plan was required. The registered monitoring plan has been revised by the PP including corresponding monitoring parameters and related baseline emissions calculation. The request for revision of MP has been approved on 2011/09/08 by the UNFCCC.

5.2. Project history

During last verification the validating DOE had not raised any issues that could not be closed or resolved during the validation stage. For this purpose no FAR’s have been raised. No such issues were identified for this project.

5.3. Special events

Several downtimes occurred during the monitoring period due to WTG failures and other equipment problems and maintenance.

The failures and downtimes occurred during the monitoring period are as follows:

- WTG 4: The gear box failed and was exchanged from 2011/06/13 to 2011/09/09

- WTG 10: The gear box failed and was exchanged from 2011/06/29 to 2011/08/29
- WTG 12: Out of service due to failure in the gear box from 2011/10/06 to 2011/10/14
- WTG 12: Gear box was replaced from 2011/11/28 to 2011/12/02
- All WTG: The medium voltage transformers of all WTG were exchanged from 2011/10/04 to 2011/10/23

The verification team has identified that the implications of these incidents results in production losses for the project activity.

Hence, as all WTG were offline during some hours/days no power was generated from them and therefore less electricity and CERs were generated by the project activity during this monitoring period. Therefore, this assumption can be considered correct, conservative and appropriate.

The verification team has checked the Operational Logbook^{/logbook/}, so as the downtime^{/downtime/} records and confirmed the information by interviewing operational personnel and cross-checking the information against operational raw data records^{/DWS/} for the periods of the incidents. The verification team identified that all incidents have been properly recorded and have been considered in the emission reduction calculation. It is concluded that the assumptions made by the PP for these periods are appropriate and conservative.

5.4. Compliance with the monitoring plan

Data source and collection, data compilation, emission calculation, emission data review and approval and finally record keeping were checked accordingly by the verification team.

The reporting procedures reflect the requirements of the monitoring plan. All relevant data are collected continuously and stored during the whole monitoring period. The monitoring consists in using meter equipment projected to registry and verifies the energy generated and consumed by the facility. All the energy invoices^{/EEG/} issued during the monitoring period were checked against the confirmation letters^{/EEG/} issued by DISNORTE and DISSUR, (for which it accepted to pay for). Also, the Economic Transaction Documents^{/DTE/} have been reviewed to confirm the power consumption from the grid.

The monitoring system and all applied procedures are completely in compliance to the registered/revised monitoring plan.

5.5. Compliance with the monitoring methodology

The monitoring system is in compliance with the applied monitoring methodology (ACM0002, version 7).

5.6. Monitoring parameters

During the verification all relevant monitoring parameters (as listed in chapter B.7.1 of the PDD) have been verified with regard to the appropriateness of the applied measurement / determination method, the correctness of the values applied for ER calculation, the accuracy, and applied QA/QC measures. The results as well as the verification procedure are described parameter-wise in the project specific verification checklist.

The verification team confirms that the internal procedure for monitoring the electricity is accurate having evidenced that the internal measurement procedure occurred in real time (without any interval of time) and that the calibration certificates of all meters is up to date.

Additionally it could be cross checked with the daily data extracted from the main and back up meter^{/ED/} against the monthly energy production report^{/MEPR/}. The electricity meters used are well known and state of the art. All measured data is collected continuously during the whole monitoring period. The ex-ante calculated grid emission factor as per registered PDD is fixed throughout the crediting period with 712.7 tCO₂e/GWh and this is the value used in the monitoring report^{/MR/}.

CAR D3 and CAR E1 were raised regarding measured energy during this monitoring period. The PP has carried out the requested corrections so that 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 report

A draft monitoring report was submitted to the verification team by the project participants. The team has made this report publicly available prior to the start of the verification activities. No comments were received.

During the verification, mistakes and needs for clarification were identified. CL B1, CL D1, CL D2, and CL E2 were raised regarding corrections and additional information required in the MR. The PP has carried out the requested corrections so that it can be confirmed that the Monitoring report is complete and transparent and in accordance with the registered PDD and other relevant requirements.

5.8. ER Calculation

According to ACM0002 Version 07 the project ERs are calculated multiplying the grid emission factor by the power supplied to the grid. As per ACM0002 Version 07

procedures the grid emission factor can be calculated ex-ante fixed throughout the crediting period. The PP has chosen this option and the fixed ex-ante calculated grid emission factor as per registered PDD is 712.7 tCO_{2e}/GWh and this is the value used in the monitoring report^{/MR/}.

For the verified monitoring period the net amount of electricity supplied to the grid is 121,932 MWh resulting in a total emission reduction of 86,901 tCO_{2e}

During the verification mistakes in the ER calculation were identified. Corresponding CAR D3 and CAR E1 were raised. A revised ER calculation spreadsheet^{/XLS/} was prepared by the PP and presented to the verification team. All raised issues were addressed appropriately so that all corresponding CARs could be closed out. Thus it is confirmed that the ER calculation is overall correct.

5.9. Quality Management

Quality Management procedures for measurements, collection and compilation of data, data storage and archiving, calibration, maintenance and training of personnel in the framework of this CDM project activity have been defined. The procedures defined can be assessed as appropriate for the purpose. No significant deviations thereof have been observed during the verification.

5.10. Comparison with ex-ante estimated emission reductions

The MR includes a comparison of the calculated actual emission reductions with the ex-ante calculated values in the registered PDD.

The calculated value was found to be proportionally lower than the ex-post determined value, thus no further justification was required.

5.11. Overall Aspects of the Verification

All necessary and requested documentation was provided by the project participants so that a complete verification of all relevant issues could be carried out.

Access was granted to all installations of the plant which are relevant for the project performance and the monitoring activities.

The verification team got access to all relevant documentation regarding the monitoring of the emission reduction calculation, like:

- technical data of the measuring equipment;
- meter readings;
- DISNORTE-DISSUR confirmation letters;
- Amayo sales electricity records;
- Economic Transaction Documents;

- calibration certificates;
- measurement devices;

All these documentation were checked and found to be consistent and of high quality.

No issues have been identified indicating that the implementation of the project activity and the steps to claim emission reductions are not compliant with the UNFCCC criteria and relevant guidance provided by the COP/CMP and the CDM EB (clarifications and/or guidance).

5.12. Hints for next periodic Verification

No FAR was raised during the 4th monitoring period.

6. VERIFICATION OPINION

Consorcio Eólico Amayo S.A. has commissioned the TÜV NORD JI/CDM Certification Program to carry out the 4th periodic verification of the project: “Amayo 40 MW Wind Power Project – Nicaragua”, with regard to the relevant requirements for CDM project activities. The project reduces GHG emissions by displacement of conventional generated electricity in the Nicaraguan grid by renewable power from a wind farm. This verification covers the period from 2011-05-01 to 2012-03-31 (including both days).

In the course of the verification 2 Corrective Action Requests (CAR) and 4 Clarification Requests (CR) were raised and successfully closed. Furthermore, no FAR was raised. The verification is based on the draft monitoring report, revised monitoring report, the monitoring plan as set out in the registered PDD, the validation report, emission reduction calculation spreadsheet and supporting documents made available to the TÜV NORD JI/CDM CP by the project participant.

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.
- the monitoring plan is in accordance with the applied approved CDM methodology ,ie, ACM0002 ver.07: Grid-connected electricity generation from renewable sources.
- the installed equipment essential for measuring parameters required for calculating emission reductions are calibrated appropriately.
- the monitoring system is in place and functional. The project has generated GHG emission reductions.

As the result of the 4th periodic 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 in the above mentioned reporting period as follows:

Emission reductions: **86,901 t** CO_{2e}

Sao Paulo, 2012-06-08



Ricardo Lopes

TÜV NORD JI/CDM Certification Program

Verification Team Leader

Hannover, 2012-06-08



Alexandra Nebel

TÜV NORD JI/CDM Certification Program

Final Approval

7. REFERENCES

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

Reference	Document
/CAI/	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).
/CC_ION/	<u>Main meter:</u> Schneider Electric, Power Logic, ION 8600, s/n: PT-0901A531-01 (ZYY00901053100000) • Conformity and Verification Certificate Num. 0497, 2010/10/29 by ENATREL (valid till 2012/10/28) • Calibration record (single meter record) issued 2009/06/14 by AMELEC (Standard ID: RM-10-06 - Serial # 508071 & Calibrator ID: UTEC 441 - Serial # B0201), valid for 2 years, till 2011/06/13. • Initial calibration record (single meter record) issued 2009/03/31 by AMELEC (Standard ID: RM-10-06 - Serial # 508071 & Calibrator ID: UTEC 441 - Serial # B0201). • Certification of compliance and calibration by Schneider Electric # 70052-0225-03, issued 2009/01/30. • Certificate of compliance and verification by Schneider Electric # 70052-0224-02 (without date). <u>Back up meter:</u> Schneider Electric, Power Logic, ION 8600, s/n: PT-0901A532-01 (ZYY00901053200000) • Conformity and Verification Certificate Num. 0498, 2010/10/29 by ENATREL (valid till 2012/10/28) • Calibration record (single meter record) issued 2009/06/14 by AMELEC (Standard ID: RM-10-06 - Serial # 508071 & Calibrator ID: UTEC 441 - Serial # B0201) valid for 2 years, till 2011/06/13. • Initial calibration record (single meter record) issued 2009/03/31 by AMELEC (Standard ID: RM-10-06 - Serial # 508071 & Calibrator ID: UTEC 441 - Serial # B0201). • Certification of compliance and calibration by Schneider Electric # 70052-0225-03, issued 2009/01/30. • Certificate of compliance and verification by Schneider Electric # 70052-0224-02 (without date).
/CC_nexus/	<u>AMAYO PHASE I</u> • Measurement point AMY-U3010 (Cell 3):

Reference	Document
	○ <u>Main meter</u> E.I.G., type Nexus 1262, class 0.2, serial No. 102-0053298330: - Conformity and Verification Certificate Num. 0481, 2010/09/29 by ENATREL <u>(valid till 2012/09/28)</u> ○ <u>Back-up meter</u> E.I.G., type Nexus 1262, class 0.2, serial No. 102-0053298431: - Conformity and Verification Certificate Num. 0482, 2010/09/29 by ENATREL <u>(valid till 2012/09/28)</u> ● Measurement point AMY-U3040 (Cell 6): ○ <u>Main meter</u> E.I.G., type Nexus 1262, class 0.2, serial No. 102-0053298936: - Conformity and Verification Certificate Num. 0487, 2010/09/30 by ENATREL <u>(valid till 2012/09/29)</u> ○ <u>Back-up meter</u> E.I.G., type Nexus 1262, class 0.2, serial No. 102-0053299028: - Conformity and Verification Certificate Num. 0488, 2010/09/30 by ENATREL <u>(valid till 2012/09/29)</u> <u>AMAYO PHASE II</u> ● Measurement point AMY-U3120 (Cell 4) – (before AMY-U3020): ○ <u>Main meter</u> E.I.G., type Nexus 1262, class 0.2, serial No. 102-0053298532: - Conformity and Verification Certificate Num. 0483, 2010/09/30 by ENATREL - Conformity and Verification Certificate Num. 0494, 2010/10/24 by ENATREL (due to change of meter location) - <u>(valid till 2012/10/23)</u>. ○ <u>Back-up meter</u> E.I.G., type Nexus 1262, class 0.2, serial No. 102-0053298633: - Conformity and Verification Certificate Num. 0484, 2010/09/30 by ENATREL - Conformity and Verification Certificate Num. 0496, 2010/10/24 by ENATREL (due to change of meter location) - <u>(valid till 2012/10/23)</u>. ● Measurement point AMY-U3130 (Cell 5) - (before U3030): ○ <u>Main meter</u> E.I.G., type Nexus 1262, class 0.2, serial No. 102-0053298734: - Conformity and Verification Certificate Num. 0485, 2010/09/30 by ENATREL.

Reference	Document
	- Conformity and Verification Certificate Num. 0491, 2010/10/24 by ENATREL (due to change of meter location) - <u>(valid till 2012/10/23).</u> - o <u>Back-up meter</u> E.I.G., type Nexus 1262, class 0.2, serial No. 102-0053298835: - Conformity and Verification Certificate Num. 0486, 2010/09/30 by ENATREL. - Conformity and Verification Certificate Num. 0492, 2010/10/24 by ENATREL (due to change of meter location) - <u>(valid till 2012/10/23).</u>
/downtime/	• Site Vist Reports issued by Suzlon Wind Energy Nicaragua (evidence of the medium voltage transformers replacement) • Downtimes excel spread sheet (evidence of all down times extracted by the SCADA system)
/DR/	Daily generation calculation spread sheet “ <i>Amayo Daily Report</i> ” (Evidence of daily energy generation).
/DTE/	Economic Transaction Documents covering the monitoring period (extracted directly from the CNDC web site (acces route: Transacciones Economicas/DTE Oficiales/Transacciones Resumen/year)
/DWS/	Dispatch Information Center web site: “ <i>Sistema de Información del Centro Nacional de Despecho de Carga</i> ” www.cndc.org.ni Usuarios autorizados/nombre de usuario/contraseña/INICIO/Subida de archivos Agentes/Comercial/SIMEC/AMAYO/YEAR (Evidence of the energy data delivered and up loaded to the energy authority).
/EDI/	Electricity data extracted from the main and back up meters corresponding the monitoring period.
/EEG/	Evidences of energy generation: <u>AMAYO PHASE I - SALES ELECTRICITY RECORDS (INVOICES):</u> • Invoice num. 0127 (DISNORTE) and invoice num. 0128 (DISSUR) corresponding to May 2011, issued 2011/06/01. • Invoice num. 0130 (DISNORTE) and invoice num. 0131 (DISSUR) corresponding to June 2011, issued 2011/07/01. • Invoice num. 0132 (DISNORTE) and invoice num. 0133 (DISSUR) corresponding to July 2011, issued 2011/08/02. • Invoice num. 0134 (DISNORTE) and invoice num. 0135 (DISSUR) corresponding to August 2011, issued 2011/09/01. • Invoice num. 0136 (DISNORTE) and invoice num. 0137 (DISSUR) corresponding to September 2011, issued 2011/10/03.

Reference	Document
	• Invoice num. 0139 (DISNORTE) and invoice num. 0140 (DISSUR) corresponding to October 2011, issued 2011/11/01. • Invoice num. 0141 (DISNORTE) and invoice num. 0142 (DISSUR) corresponding to November 2011, issued 2011/12/01. • Invoice num. 0143 (DISNORTE) and invoice num. 0145 (DISSUR) corresponding to December 2011, issued 2012/01/03. • Invoice num. 0146 (DISNORTE) and invoice num. 0147 (DISSUR) corresponding to January 2012, issued 2012/02/01. • Invoice num. 0148 (DISNORTE) and invoice num. 0149 (DISSUR) corresponding to February 2012, issued 2012/03/01. • Invoice num. 0150 (DISNORTE) and invoice num. 0151 (DISSUR) corresponding to March 2012, issued 2012/04/02. <u>AMAYO PHASE I - DISNORTE-DISSUR CONFIRMATION LETTERS:</u> • Letter # CE-159-06-2011, corresponding to May 2011, issued 2011/06/07. • Letter # CE-182-07-2011, corresponding to June 2011, issued 2011/07/06. • Letter # CE-205-08-2011, corresponding to July 2011, issued 2011/08/08. • Letter # CE-236-09-2011, corresponding to August 2011, issued 2011/09/07. • Letter # CE-264-10-2011, corresponding to September 2011, issued 2011/10/07. • Letter # CE-286-11-2011, corresponding to October 2011, issued 2011/11/08. • Letter # CE-315-12-2011, corresponding to November 2011, issued 2011/12/06. • Letter # CE-004-01-2012, corresponding to December 2011 for DISNORTE, issued 2012/01/09. • Letter # CE-008-01-2012, corresponding to December 2011 for DISSUR, issued 2012/01/10. • Letter # CE-034-02-2011, corresponding to January 2012, issued 2011/02/07. • Letter # CE-068-03-2011, corresponding to February 2012, issued 2011/03/07. • Letter # CE-096-04-2012, corresponding to March 2012, issued 2012/04/10.
/IEEG_A2/	<u>AMAYO PHASE II SALES ELECTRICITY RECORDS (INVOICES):</u> • Invoice num. 058 (DISNORTE) and invoice num. 056 (DISSUR) corresponding to May 2011, issued 2011/06/01. • Invoice num. 065 (DISNORTE) and invoice num. 063 (DISSUR) corresponding to June 2011, issued 2011/07/01. • Invoice num. 067 (DISNORTE) and invoice num. 066 (DISSUR) corresponding to July 2011, issued 2011/08/02.

Reference	Document
	• Invoice num. 069 (DISNORTE) and invoice num. 068 (DISSUR) corresponding to August 2011, issued 2011/09/01. • Invoice num. 071 (DISNORTE) and invoice num. 070 (DISSUR) corresponding to September 2011, issued 2011/10/03. • Invoice num. 076 (DISNORTE) and invoice num. 074 (DISSUR) corresponding to October 2011, issued 2011/11/01. • Invoice num. 079 (DISNORTE) and invoice num. 078 (DISSUR) corresponding to November 2011, issued 2011/12/01. • Invoice num. 081 (DISNORTE) and invoice num. 080 (DISSUR) corresponding to December 2011, issued 2012/01/03. • Invoice num. 087 (DISNORTE) and invoice num. 088 (DISSUR) corresponding to January 2012, issued 2012/02/01. • Invoice num. 090 (DISNORTE) and invoice num. 089 (DISSUR) corresponding to February 2012, issued 2012/03/01. • Invoice num. 094 (DISNORTE) and invoice num. 092 (DISSUR) corresponding to March 2012, issued 2012/04/02. <u>AMAYO PHASE II - DISNORTE-DISSUR CONFIRMATION LETTERS:</u> • Letter # CE-160-06-2011, corresponding to May 2011, issued 2011/06/07. • Letter # CE-183-07-2011, corresponding to June 2011, issued 2011/07/06. • Letter # CE-206-08-2011, corresponding to July 2011, issued 2011/08/08. • Letter # CE-237-09-2011, corresponding to August 2011, issued 2011/09/07. • Letter # CE-265-10-2011, corresponding to September 2011, issued 2011/10/07. • Letter # CE-287-11-2011, corresponding to October 2011, issued 2011/11/08. • Letter # CE-316-12-2011, corresponding to November 2011, issued 2011/12/06. • Letter # CE-005-01-2012, corresponding to December 2011, issued 2012/01/09. • Letter # CE-035-02-2012, corresponding to January 2012, issued 2012/02/07. • Letter # CE-069-03-2012, corresponding to February 2012, issued 2012/03/07. • Letter # CE-097-04-2012, corresponding to March 2012, issued 2012/04/10.
/EGL/	Energy Generation License – “ <i>Contrato de Licencia de Generación de energía eléctrica</i> ” – number 29498, issued 2008/08/05 (valid for 30 years).
/EIA/	Environmental Impact Study, issued November 2006.

Reference	Document
/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).
/logbook/	Logbook of Operations Amayo (covering the monitoring period).
/IM/	Installation Manual – S88-2.1 MW – Suzlon Windkraft GmbH, Doberaner Str. 115, 18057 Rostock Germany.
/INE/	Official letter signed and stamped by INE, Ref. DGE-MCV-0230-0302010, dated 2010/03/23 (evidence of the approval by the energy authority regarding the new method to calculate the energy supplied to the grid).
/ISO/	ISO 9001:2008 and ISO 14001:2004 certificates for Amayo Phase II
/MCL/	Turbine logbook: • Turbine specific data; • Maintenance Check List / 500 hours - S88-2.1 MW; • Maintenance Check List / Half-Yearly – 8S88-2.1 MW; • Maintenance Check List / Yearly – 8S88-2.1 MW; • Service works & • Repairs
/MEP/	Monitoring Environmental Plan <u>2011</u> and <u>2012</u> “ <i>Plan de Monitoreo Ambiental</i> ” for Amayo I and Amayo II and its prove of receipt by MARENA on 2011/06/02 and 2012/04/30 respectively (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).
/MEPR/	Monthly Energy Production calculation spread sheet & Monthly Energy Production Report corresponding to the monitoring period (evidence of monthly energy generation).
/MoRe/	Monthly Report 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 02, 2011/11/02. • Monitoring Report “Amayo 40 MW Wind Power Project – Nicaragua”, version 03, 2012/05/11.

Reference	Document
	Monitoring Report “Amayo 40 MW Wind Power Project – Nicaragua”, version 04, 2012/06/08.
/MSI/	Turbines main specification S88, 60 Hz – Standard Temperature Version 80m, Tubular Tower.
/Mttol/	2010-2012 Maintenance Forecast Program for Amayo I & Amayo II issued on 2011/12/22 by Suzlon.
/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)
/OPLI/	Operational Procedures List by AMAYO.
/ORI/	Operational Regulation # 26-2000 “ <i>Normativa de Operación</i> ”, issued November 2000 by INE.
/PCCI/	Procedures for carbon credits, October 2010 (procedures for monitoring parameters, troubleshooting procedures, and data management).
/PPA1/	Power Purchase Agreement of Amayo Phase I – 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 Amayo Phase I – 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).
/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
/TE/	Training evidence performed by Suzlon Wind Energy A/S Technical Training Center performed on 2011/02/01-2011/02/04: • HAILO safety cable • Inspection and certification • Emergency medical training • Rescue from heights • AVANTI service lift - operation. Training evidence performed by Fireman Department of Rivas performed on 2011/10/20: • Training for first aids & fire control and contingency. Training evidences for new Plant Manager (Javier Pentzke) • Course “Power Generation from Renewable Energies” on February 2006 by the National University of Engineering • ION Fundamentals course from Power Management University on 2006/10/05 • Utilization of Wind Pro 2 Software from the National University of Engineering on 2005/12/12
/TSPI/	Alarm Description & Trouble Shooting S88 CSM88L28021, Version 01, issued 2008/09/30 by Suzlon.
/XLS/	Emission reduction calculation spreadsheet
/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/	ACM0002 ver.7, “Grid-connected electricity generation from renewable sources”
/CPM/	TÜV NORD JI / CDM CP Manual (incl. CP procedures and forms)
/IPCC/	1. 1996 IPCC Guidelines for National Greenhouse Gas Inventories: work book

Reference	Document
	2. 2006 IPCC Guidelines for National Greenhouse Gas Inventories: work 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
/RfRevMPI/	Request for revision of the Monitoring Plan “Amayo 40 MW Wind Power Project - Nicaragua”, accepted by the UNFCCC on 2011/09/08.
/VAL/	Validation Report for CDM project “Amayo 40 MW Wind Power Project – Nicaragua” version 02, dated 2008-11-21
/VER/	Documents of previous verifications (Monitoring report, verification report, ER calculation sheet)
/VVM/	UNFCCC Validation and Verification Manual (Version 01.2, EB 55)

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
/ipcc/	www.ipcc-nggip.iges.or.jp	IPCC publications
/unfccc/	http://cdm.unfccc.int	UNFCCC

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



Reference	Moi ¹		Name	Organisation / Function
/IM01/	V	☒ Mr. ☐ Ms.	Felipe René Flores	Wind Farm Operator – Amayo

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

ANNEX

- A1:** Verification Protocol
- A2:** Appointment / Authorisation
statements

ANNEX 1: VERIFICATION PROTOCOL

Table A-1: GHG calculation procedures and management control testing / detailed audit testing of residual risk areas and random testing

Identification of potential reporting risk	Identification, assessment and testing of management controls	Areas of residual risks	Additional verification testing	Conclusions and Areas Requiring Improvement (including <i>Forward Action Requests</i>)
Raw data generation				
• Installation of measuring equipment • Dysfunction of installed equipment • Maloperation by operational personnel • Downtimes of equipment • Exchange of equipment • Change of measurement equipment characteristic • Insufficient accuracy • Change of technology	• Installation of modern and state of the art equipment • Process control automation • Internal data review • Regular visual inspections of installed equipment • Only skilled and trained personnel operates the relevant equipment • Daily raw data checks • Immediate exchange of dysfunctional equipment • Stand-by duty is	• Inadequate installation / operation of the monitoring equipment • Inadequate exchange of equipment • Change of personnel • Undetected measurement errors • Inappropriateness of Management system procedures w.r.t. monitoring plan requirements (e.g. substitute value strategies) • Non-application of management system procedures • Insufficient accuracy • Inappropriate QA/QC	• Site – visit • Check of equipment • Check of technical data sheets • Check of suppliers information / guarantees • Check of calibration records, if applicable • Check of maintenance records • Counter-check of raw data and commercial data • Check of CDM management system • Check of CDM related procedures	• See Table A-2

Identification of potential reporting risk	Identification, assessment and testing of management controls	Areas of residual risks	Additional verification testing	Conclusions and Areas Requiring Improvement (including <i>Forward Action Requests</i>)
Accuracy of values supplied by Third Parties	- organized - Training - Internal audit procedures - Internal check of QA/QC measures of involved Third Parties	measures of Third Parties	- Application of CDM management system procedures - Check of trainings - Check of responsibilities - Check of QA/QC documentation / evidences of involved Third Parties	
Raw data collection and data aggregation				
- Wrong data transfer from raw data to daily and monthly aggregated reporting forms - IT Systems - Spread sheet programming - Manual data transmission - Data protection - Responsibilities	- Cross-check of data - Plausibility checks of various parameters. - Appropriate archiving system - Clear allocation of responsibilities - Application of CDM Management system procedures - Usage of standard software solutions	- Unintended usage of old data that has been revised - Incomplete documentation - Ex-post corrections of records - Ambiguous sources of information - Non-application of management system procedures - Manual data transfer mistakes	- Check of data aggregation steps - Counter-calculation - Data integrity checks by means of graphical data analysis and calculation of specific performance figures - Check of management system certification - Check of data archiving system	See Table A-2

Identification of potential reporting risk	Identification, assessment and testing of management controls	Areas of residual risks	Additional verification testing	Conclusions and Areas Requiring Improvement (including <i>Forward Action Requests</i>)
	(Spreadsheets) - Limited access to IT systems - Data protection procedures	- Unintended change of spread sheet programming or data base entries - Problems caused by updating/upgrading or change of applied software	Check of application of Management system procedures	
Other calculation parameters				
Emission factors, oxidation factors, coefficients	The values and data sources applied are defined in the PDD and monitoring plan	- Unintended or intended Modification of calculation parameters - Wrong application of values - Misinterpretations of the applied methodology and/ or the PDD - Missing update of applicable regulatory framework (e.g. IPCC values)	- Update-check of regulatory framework - Countercheck of the applied MP in the MR against the methodology and the PDD	See Table A-2
Calculation Methods				

Identification of potential reporting risk	Identification, assessment and testing of management controls	Areas of residual risks	Additional verification testing	Conclusions and Areas Requiring Improvement (including <i>Forward Action Requests</i>)
- Applied formulae - Miscalculation - Mistakes in spread-sheet calculation	- Advanced calculation and reporting tools - A CDM coordinator is in charge of the CDM related calculations - Usage of tested / counterchecked Excel spreadsheets - Involvement of external consultants	The danger of miscalculation can only be minimized.	- Countercheck on the basis of own calculation. - Spread sheet walk-through. - Plausibility checks - Check of plots	See Table A-2
Monitoring reporting				
- Data transfer to the author of the monitoring report - Data transfer to the monitoring report - Unintended use of outdated versions	- An experienced CDM consultant is responsible for monitoring reporting. - CDM QMS procedures are defined	- The danger of data transfer mistakes can only be minimized - Inappropriate application of QMS procedures	- Counter check with evidences provided. - Audit of procedure application	See Table A-2

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.
A. General Description of the project activity				
A.1. Brief description of the project activity (EB 54 Annex 34, A.1) Check if section A.1 of the MR includes the following: - Purpose of the PA and the measures taken to reduce GHG emissions - Brief description of the installed technology and equipments - Relevant dates for the project activity (e.g. construction, commissioning, continued operation periods etc. - Total emission reductions achieved in this monitoring period	/MR/	The verification team has checked section A.1 of the MR and confirms that the information provided is complete and correct with regards to the following: ☒ Purpose of the PA and the measures taken to reduce GHG emissions ☒ Brief description of the installed technology and equipments ☒ Relevant dates for the project activity (e.g. construction, commissioning, continued operation periods etc ☒ Total emission reductions achieved in this monitoring period In this context the following findings have been identified: N/A	OK	OK
A.2. Project Participants (EB 54 Annex 34, A.2) Check if section A.2 of the MR includes the following: - All PPs as displayed on the UNFCCC website	/MR/	The verification team has checked section A.2 of the MR and confirms that the information provided is complete and correct with regards to the following: ☒ All PPs as displayed on the project related UNFCCC website are correctly listed In this context the following findings have been identified: N/A	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
A.3. Location of the Project Activity (EB 54 Annex 34, A.3) <i>Check if section A.3 of the MR reflects correctly the following:</i> - Address of the project location - Latitude and Longitude	/MR/ /PDD/ /IM01/	The verification team has checked section A.3 of the MR and confirms by means of comparison with the information given in the PDD and information gathered during the site visit that the information provided is complete and correct with regards to the following: ☒ The address has been correctly given in the MR ☒ Latitude and Longitude are in line with the information given in the PDD and reflects the actual location of the PA. In this context the following findings have been identified: N/A	OK	OK
A.4. Technical description of the project (EB 54 Annex 34, A.4) <i>Check if section A.4 of the MR correctly describes / includes the following:</i> - Detailed description of the technology applied - Diagrams	/MR/ /PDD/ /IM01/	The verification team has checked section A.4 of the MR and confirms by means of comparison with the information given in the PDD and information gathered during the site visit that the information provided is complete and correct with regards to the following: ☒ The description of the technology applied is complete and appropriate ☒ Appropriate diagrams have been included in the description In this context the following findings have been identified: N/A	OK	OK
A.5. Title, reference and version of the baseline and monitoring methodology	/MR/ /PDD/	The verification team has checked section A.5 of the MR and confirms by means of comparison with the information given in the PDD and displayed on the UNFCCC website that the	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
applied to the project (EB 54 Annex 34, A.5) <i>Check if section A.5 of the MR correctly describes / includes the following:</i> - Reference to the applicable version of the methodology - Reference to the applicable version(s) of relevant methodological tools - Relevant EB decisions, if applicable	/unfccc/	information provided is complete and correct with regards to the following: ☒ Name and version of the applicable CDM Methodology ☒ Name and version of applicable CDM methodological tools ☒ Relevant EB decisions In this context the following findings have been identified: N/A		
A.6. Registration date of the project activity (EB 54 Annex 34, A.6) <i>Check if section A.6 of the MR correctly includes the following:</i> - Registration date	/MR/ /unfccc/	The verification team has checked section A.6 of the MR and confirms by means of comparison with the information displayed on the UNFCCC website that the information provided is complete and correct with regards to the following: ☒ Registration date In this context the following findings have been identified: N/A	OK	OK
A.7. Crediting period of the PA and related information (EB 54 Annex 34, A.7) <i>Check if section A.7 of the MR correctly includes the following:</i> - Start date of the crediting period. In this context please check, if applicable, whether post	/MR/ /unfccc/	The verification team has checked section A.7 of the MR and confirms by means of comparison with the information displayed on the UNFCCC website that the information provided is complete and correct with regards to the following: ☒ Start date of the crediting period. ☒ Type and length of the crediting period	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
<i>registration changes to the start date have been accepted by the EB.</i> - Length and type of the crediting period		In this context the following findings have been identified: N/A		
A.8. Name of the responsible person(s) / entity/(ies) (EB 54 Annex 34, A.8) <i>Check if section A.8 of the MR correctly includes the following:</i> - Contact information of the person(s)/entity(ies) responsible for completing the MR.	/MR/ /IM01/	The verification team has checked section A.8 of the MR and confirms by means of interviews with the PP that the information provided is complete and correct with regards to the following: ☒ Contact information of the person(s) / entity/(ies) responsible for completing the MR.. In this context the following findings have been identified: N/A	OK	OK
B. Implementation of the project activity				
B.1. Implementation status of the project				
B.1.1. Initial project implementation (EB 55 Annex 1, §§ 182, 195-201) <i>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>	/IM01/ /PDD/ /MS/	<i>Description:</i> at the registered PDD it is stated the technical features and equipment to be employed by the project activity, and what was verified by the verification team is that the project is indeed implemented with them. 19 Suzlon wind turbine generators of 2.1 MW model S88 were	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
<i>Further focus on the potential phase wise implementation and check the reporting on the corresponding status and starting dates accordingly.</i> <i>Also, discuss – if applicable – any approvals of the necessary request of notification or request for approval of changes from the project activity as described in the registered PDD (EB 48 Annex 66/67).</i>		installed resulting in a wind farm of 39.9 MW generation capacity. <i>Justification of evidences:</i> during the site visit, the verification team had a full overview of all installation, equipment and operation of the wind farm. <i>Conclusion:</i> the project has been implemented in accordance with the registered PDD.		
B.1.2. Technical equipment changes (EB 55 Annex 1, § 187) <i>Check if relevant technical equipment of the project activity has been exchanged or modified during the monitoring period. Further ensure that consistent notations of key equipment (meters etc.) in PDD, MR and calculation spreadsheet are applied</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 and the emission reduction calculation.</i> <i>Also, discuss –if applicable- any approvals of the necessary request of notification or request for approval of changes from the project activity as described in the registered PDD (EB 48 Annex 66/67).</i>	/IM01/ /PDD/ /VAL/ /logbook/ /downtime/	<i>Description:</i> During the monitoring period the following equipment changes occurred: - On June 13th 2011, the gear box of WTG 4 failed. The replacement activities for the gear box finalized on September 9th 2011. During the replacement period (2011/06/13 – 2011/09/09) the WTG 4 did not generated any electricity. - On June 29th 2011, the gear box of WTG 10 failed. The replacement activities for the gear box finalized on August 29th 2011. During the replacement period (2011/06/29 – 2011/08/29) the WTG 10 did not generated any electricity. - On November 28th 2011, the gear box of WTG 12 was checked and the PP decided to replace it. The replacement activities for the gear box finalized on December 2nd 2011. During the replacement period (2011/11/28 – 2011/12/02) the WTG 12 did not generated any electricity. - Then, during the period from 2011/10/04 to 2011/10/23 all medium voltage transformers for all WTG were replaced.	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
		During this replacement activity each WTG was not generating electricity during the hours required for the transformer replacement. The Operational Logbooks^{/logbook/} were reviewed, these Logbooks includes the daily operational records, this are prepared manually by the project operators and then all this data is recorded in the Amayo Daily Reports. In addition, evidence of the replacement activities performed by Suzlon to the medium voltage transformers so as the raw data from the SCADA system were checked^{/downtime/}. <i>Justification of evidences:</i> Interviews with the project operators were performed. The operational logbooks^{/logbook/} were reviewed so as the equipment replacement reports^{/downtime/}. <i>Conclusion:</i> Although some equipment was changed the project is still in line with the registered PDD. These changes have been considered in the emission reduction calculation. All the information regarding these changes was properly included in the MR.		
B.1.3. Operation of the project activity (EB 55 Annex 1, § 195) <i>Check if relevant operation modes of the project activity have been exchanged or modified during the monitoring period.</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</i>	/IM01/ /PDD/ /VAL/	<i>Description:</i> Amayo has complete control of the operation of the 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.	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
<i>in line with the registered PDD and assure that these changes have been considered in the monitoring report and the emission reduction calculation.</i> <i>Also, discuss – if applicable – any approvals of the necessary request of notification or request for approval of changes from the project activity as described in the registered PDD (EB 48 Annex 66/67).</i>		The verification team has identified that the mode of operation for the project activity have not been changed or modified during this 4th monitoring period. <i>Justification of evidences:</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.		
B.1.4. Incidents (EB 55 Annex 1, § 187, 208a) <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/ /downtime/	<i>Description:</i> During the monitoring period the following incident occurred: - From 2011/10/06 to 2011/10/14 WTG 12 was out of operation due to a failure in the gear box. At the time of site visit all the failures were successfully corrected. Also, there is a document named “Downtime”^{n/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 downtimes are classified by component as follows: • Control system • Environment • Gearbox	CL-B1	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
		• Generator • Grid • Maintenance • Pitch System • Turbine electrical • Vibration • Wirebreak • Yaw system • Kiosk issue • Centro Nacional Despacho • Sistema Interconectado Nacional The Operational Logbooks^{/logbook/} were reviewed, these Logbooks includes the daily operational records, these are prepared manually by the project operators and then all this data is recorded in the Amayo Daily Reports^{/DR/}. <i>Justification of evidences:</i> An Interview with the project operator from the wind park was performed to confirm the incidents occurred during the 4th monitoring period. The operational logbooks were reviewed so as the SUZLON repair documentation^{/downtime/}. <i>Conclusion:</i> all incidents occurred during the monitoring period have been properly recorded and have been considered in the emission reduction calculation. Nevertheless, CL B1 was raised requesting further information in the MR about some of the incidents. (CL B1) Section B.1: Information about the incidents that occurred		

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
		during the monitoring period is missing in the MR.		
B.1.5. Legislation Find out whether relevant legislation with effect on the project activity in the host country has been changed. Assess, in case of changes, whether consequences for the PA with regard to relevant CDM requirements have been accounted for. In case of changes data sources shall be referenced.	/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 The EIA defines that these reports have to be delivered and prepared annually. For the monitoring period (May 2011 – March 2012) the Environmental Reports for 2011 and 2012 have been provided. • The PP provided the confirmation receipt letter from the authority demonstrating the delivery of the Environmental reports sent on 2011/06/02. This report covers the period from July 2010 – June 2011. • The PP provided the confirmation receipt letter from the authority demonstrating the delivery of the Environmental reports sent on 2012/04/30. This report	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
		covers the period from July 2011 – March 2012. 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>Justification of evidences:</i> The PP had provided annually reports to the environmental authority. The operational and environmental licenses, approved EIA, 2011 Environmental Plan and 2012 Environmental Plan have been reviewed. <i>Conclusion:</i> Relevant legislation was considered, no relevant changes since the 1st verification were identified.		
B.1.6. Open issues from validation (EB 55 Annex 1, §§ 181-183, 188c, 190c) <i>Check (esp. in case of 1st periodic verification) whether there are any open issues indicated in the validation report (e.g. FAR)?</i>	/VAL/	☒ There were no open issues addressed in the validation report ☐ All open issues from the validation have been appropriately addressed. ☐ The following issues related to the validation have not yet been appropriately addressed:	OK	OK
B.1.7. Open issues from previous verification (EB 55 Annex 1, § 193)	/VER/	☒ There were no open issues addressed in the previous verification report ☐ All open issues from the previous verification have been	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.																	
Check in case of further periodic verifications whether there are any open issues indicated in previous verification reports (FAR) and take into consideration the guidance as specified in VVM.		appropriately addressed. ☐ The following issues related to the previous verification have not yet been appropriately addressed:																			
B.1.8. Publication of the Monitoring Report Check if the monitoring report has been made publicly available on the UNFCCC website before the verification commenced. Check if comments have been received and if yes, how they have been addressed.	/unfccc/	Description: the monitoring report submitted by project owner had been made publicly available on the UNFCCC website on 2012-04-13. Justification of evidences: the verification team has checked the UNFCCC website to confirm the report is publicly available for comments. Conclusion: The draft monitoring report, as received from the project participants, has been made publicly available prior to the start of the verification activities. No comments have been received.	OK	OK																	
B.2. Requests for Revisions of MP (EB 55 Annex 1, §§ 201, 203, 219) Check (i) if there have been any requests for revisions of the monitoring plan in the past.and/or (ii) if there is a need for a RfRev. Make sure that the monitoring report reflects the application of the revision as approved by the EB, where applicable. Check in case of approved revisions if the date of approval has been included.	/unfccc/	<table><tr><td>☐</td><td colspan="3">No requests for revisions of the MP.have been submitted to the UNFCCC prior to the current monitoring period</td></tr><tr><td rowspan="4">☒</td><td colspan="3">The following RfRev have been approved or are under approval by the UNFCCC</td></tr><tr><td>1</td><td>Title</td><td>Request for revision of the monitoring plan of Amayo 40 MW Wind Power Project - Nicaragua (2315)</td></tr><tr><td></td><td>Status</td><td>☐ under approval; ☒ approved</td></tr><tr><td></td><td>Appr.date</td><td>2011/09/08</td></tr></table>	☐	No requests for revisions of the MP.have been submitted to the UNFCCC prior to the current monitoring period			☒	The following RfRev have been approved or are under approval by the UNFCCC			1	Title	Request for revision of the monitoring plan of Amayo 40 MW Wind Power Project - Nicaragua (2315)		Status	☐ under approval; ☒ approved		Appr.date	2011/09/08	OK	OK
☐	No requests for revisions of the MP.have been submitted to the UNFCCC prior to the current monitoring period																				
☒	The following RfRev have been approved or are under approval by the UNFCCC																				
	1	Title	Request for revision of the monitoring plan of Amayo 40 MW Wind Power Project - Nicaragua (2315)																		
		Status	☐ under approval; ☒ approved																		
		Appr.date	2011/09/08																		

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)				Draft Concl.	Final Concl.	
			2	Title				
				Status	☐ under approval; ☐ approved			
				Appr.date				
		☒	During the verification of the current MP no need for a RfRev has been identified. The monitoring plan is in accordance with the approved methodology applied by the PA					
		☐	The following revisions of the MP are to be requested from the EB for the current MP					
			1	Issue				
		In this context the following findings have been identified: N/A						
B.3. Requests for Deviations applied to this MP (EB 55 Annex 1, §§ 203, 211-219) <i>Check (i) if there have been any requests for deviations in the past.and/or (ii) if there is a need for a RfDev. Make sure that the monitoring report reflects the application of the deviation as approved by the EB, where applicable. Check in case of approved deviations if the approval date and reference number has been included.</i> <i>Further check in case of approved RfDev whether the MR appropriately reflects the application of the EB</i>	/unfccc/	☒	No requests for deviations have been submitted to the UNFCCC prior to the current monitoring period				OK	OK
		☐	The following RfDev have been approved or are under approval by the UNFCCC					
			1	Title				
				Status	☐ under approval; ☐ approved			
				Ref. No.				
				Appr.date				

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)				Draft Concl.	Final Concl.	
guidance.			2	Title				
				Status	☐ under approval; ☐ approved			
				Ref. No.				
				Appr. date				
		☐	In case of approved guidance of the EB: The monitoring report reflects the application of the EB guidance regarding the RfDev.					
		☒	During the verification of the current MP no need for a RfDev has been indentified					
		☐	The following deviations are to be requested from the EB for the current MP					
			1	Issue				
		In this context the following findings have been identified: N/A						
		B.4. Initial verification <i>In case an initial verification has been carried out, check if all FARs, recommendations etc. can be confirmed as existent for the periodic verification.</i>	/IM01/ /VER/ /unfccc/	☒	No initial verification has been carried out.			NA
	☐	There are no open issues, recommendations etc. pending from the initial verification						
	☐	The following issues related to the initial verification have to be addressed: Not applicable as no initial verification has been carried out.						

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
C. Description of the monitoring system				
C.1. Management System (EB 55 Annex 1, § 184 a (iii)) <i>Check if the GHG data monitoring system can be assessed as appropriate.</i> <i>In case reference is made to a (certified) company quality management system, check if all CDM related monitoring procedures have been fully integrated in the project participant's quality management system.</i> <i>In case of a stand-alone system, check how the GHG management system has been implemented and effectiveness is ensured.</i>	/IM01/ /OP/ /OPL/ /PCC/	<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. On August 2011 all the operational procedures^{/OPL/ & /OP/} were reviewed. For each procedure a code, revision number and date has been included. The procedures for carbon credits^{/PCC/} issued on October 2010 has not changed during the monitoring period. This procedure includes the data management, QA/QC procedures, trouble shooting procedures (according to the applicable legislation) and calibration frequency. <i>Justification of evidences:</i> Last versions of the Operational Procedures and the carbon credits procedure were checked. Also, the ISO certificates have been checked by the verification team. <i>Conclusion:</i> All GHG monitoring system is included and integrated in the management system of the wind farm and it	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
		could be evidenced and confirmed during site visit that GHG management system is completely implemented in the wind farm.		
C.2. Metering diagram (EB 54 Annex 34, C) <i>Check first if the MR includes a metering diagram showing all relevant monitoring points..</i> <i>Check further if this diagram reflects the actual situation and is in line with the registered PDD and with the requirements of the applied methodology.</i>	/MR/ /ACM000 2/	<i>Description:</i> Section C of the MR includes a metering diagram showing relevant monitoring points (high and low voltage power measurements) related to the project activity. The verification team has been identified that the metering diagram is complete, all the monitoring points considered in the registered PDD and the applied methodology ACM0002 version 07 have been included. <i>Justification of evidences:</i> the validation team has checked the MR against the registered PDD and the applicable methodology ACM0002 version 07 <i>Conclusion:</i> the MR includes a metering diagram that shows all relevant monitoring points and reflects the actual situation of the project. The metering diagram is in line with the registered PDD and the applied methodology.	OK	OK
C.3. Roles and Responsibilities (EB 54 Annex 34, C) <i>Check if all roles and positions of each person in the GHG data management process are clearly defined and implemented as stated in the monitoring plan. Please consider the complete data trail from raw data generation to submission of the final data.</i> <i>Identify, if relevant personnel w.r.t. monitoring has been exchanged?</i> <i>If so, have appropriate training measures been</i>	/IM01/ /PCC/ /TE/	<i>Description:</i> All responsibilities and roles are clearly defined in the Procedures for carbon credits. During the monitoring period the Plant Manager (Manuel Callejas) has been exchanged by Javier Pentzke. The PP has provided evidences which demonstrate that appropriate training measures ^{/TE/} have been carried out for Javier Pentzke. Furthermore, the PP has provided the training certificates ^{/TE/} of all the personnel involved in the project operation. It was verified by the verification team that only duly qualified personnel is involved in the monitoring procedures.	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
<i>carried out.</i> <i>In case of changes, assure that the implemented monitoring procedures have not been affected.</i>		<i>Justification of evidences:</i> Last version of the Procedures for carbon credits^{/PCC/} was checked. During the site visit, the verification team interviewed operational and managerial staff and observed that the roles and positions are clearly defined and implemented as stated in the monitoring plan. The involved personnel is properly trained^{/TE/} and qualified for their tasks. <i>Conclusion:</i> It was verified by the verification team that only duly qualified personnel is involved in the monitoring procedures. Training evidence^{/TE/} of all personnel involved in the project was checked. The roles and positions are clearly defined and in line with the MP.		
C.4. Emergency procedures for the monitoring system (EB 54 Annex 34, C) <i>Check, as appropriate, whether relevant emergency procedures for the monitoring system have been included in the MR and assess whether these procedures have been implemented, when required</i>	/IM01/ /TSP/	<i>Description:</i> Troubleshooting procedures are described in the Alarm Description & Trouble Shooting Manual property of Suzlon. <i>Justification of evidences:</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
C.5. Data archive and data protection Check whether all records of monitoring parameters are archived according to the monitoring plan. Assess further whether appropriate measures have been taken in order to avoid unintended or intended	/IM01/ /SC/ /SCS/ /CC_ION /I	<i>Description:</i> 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)^{/SC/} & ^{/SCS/} is	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
manipulation or loss of the measured data.	/CC_nexus/	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. Both ION meters^{/CC_ION/} and all the Nexus power meters^{/CC_nexus/} are sealed. CNDC is connected to the ION main meter (via modem) with 1 dedicated channel which transmit the information in real time (without any interval of time). Currently CNDC has access to the low voltage power meters via internet through the IP address of each power meter. Amayo downloads daily the data from the ION and Nexus main and back-up meters. Every day (after 00:00 hrs.) Amayo uploads the data extracted directly from the ION and Nexus main and back up meter, to the dispatch web site^{/DWS/}. Furthermore, the PP backs up monthly the data from the meters. There is a server in the wind farm which storages all the data of the wind farm operation, this server has a back-up which is performed automatically every day. In addition, back-up CD's are prepared frequently. There is also measurement equipment for each wind-generator on-line in the SCADA system. The data is archived in electronic way. Archived data is kept during the crediting period and two years later. <i>Justification of evidences:</i> It was checked during site visit that		

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
		the ION meters located in the Protection, Control and Monitoring (PCYM) room of Amayo Substation so as the power meters located at the Medium Voltage room are in sealed cabinets. Interviews were performed to confirm data protection methods. Furthermore, the SCADA system manuals and procedures^{/SCI/ & /SCS/} were also reviewed. <i>Conclusion:</i> All records of monitoring parameters are archived according to the monitoring plan. No discrepancies were identified. Energy data are protected and information could be obtained from different sources to avoid manipulation. Data protection methods are accepted by the verification team.		
D. Data and parameters monitored				
D.1. EG_y		Description: Electricity supplied to the grid by the project		
a) Measurement / Determination method (EB 55 Annex 1, §§ 184-185, 202-203) <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. Furthermore, verify the frequency of measurements as per the requirements.</i> <i>Assess whether the measurement / determination method is in line with the registered monitoring plan</i>	/IM01/ /MR/ /ACM 0002/ /OR/	<i>Description:</i> According to the registered MP this parameter is calculated by subtracting the project power consumption from the project gross electricity generation as follows: $EG_y = EG_{PhaseI,y}^{230kV} - EC_{PhaseI,y}^{230kV}$ As Amayo Phase I shares the substation and the commercial power meters at the 230 kV side with Amayo Phase II, the project power consumption ($EC_{PhaseI,y}^{230kV}$) and power gross electricity generation ($EG_{PhaseI,y}^{230kV}$) are calculated by the PP based on the total electricity from both wind farms measured at the 230 kV and the independent power generation and consumption measurements performed for each wind farm at	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
of the PDD and the applied methodology.		the 13.8 kV. The formulas used for these calculations are: $EC_{PhaseI,y}^{230kV} = \frac{EC_{PhaseI,y}^{13.8kV}}{EC_{PhaseI,y}^{13.8kV} + EC_{PhaseII,y}^{13.8kV}} \cdot EC_{AMAYO,y}^{230kV}$ $EG_{PhaseI,y}^{230kV} = \frac{EG_{PhaseI,y}^{13.8kV}}{EG_{PhaseI,y}^{13.8kV} + EG_{PhaseII,y}^{13.8kV}} \cdot EG_{AMAYO,y}^{230kV}$ The detail measurement/determination method for each parameter considered in the formulas is explained in Section D. of the verification checklist. <i>Justification of evidences:</i> The registered MP has been checked by the verification team. Interviews were also performed with personnel from CEA to confirm the measure method. Also, the Operational Regulation^{OR/} requirements were checked. <i>Conclusion:</i> the monitoring of this parameter is in line with the revised MP and with the applied methodology.		
b) Accuracy (EB 55 Annex 1, §§ 205c, 206a) <i>In case of measured (or estimated) values, check whether the accuracy of equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan or if significant inaccuracies occur; in this case, make sure that the most conservative assumptions theoretically possible have been made for calculating ERs.</i>	/CC_ION / /INE/ /CC_nexus/ us/	<i>Description:</i> Both ION meters are state of the art and were properly calibrated by a certified organization. Also, since October 1st 2010 Nexus power meters located at the low voltage side have been used to measure the power generation and consumption of the project activity at the 13.8 kV side of the transformer. These meters have been calibrated by AMELEC^{/CC_nexus/} and are included in the SIMEC. <i>Justification of evidences:</i> During site visit, the meters were checked. The ION power meters and the Nexus power meters are sealed and protected. Calibration certificates^{/CC_ION/ & /CC_nexus/} covering the monitoring period were provided.	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
		<i>Conclusion:</i> There is no significant inaccuracy expected for the ION and Nexus power meter measurements. The accuracy of the equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan		
c) QA/QC Procedure (EB 55 Annex 1, §§ 184b (vii), 205c, 206) <i>Describe whether all applicable QA/QC procedures are met. Assess further if the calibration of the monitoring equipment has been carried out in line with the latest EB guidance.</i>	/IM01/ /ED/ /MEPR/ /EEG/ /ED/ /CC_ION/ / /CC_nexus/ us/	<i>Description:</i> The QA/QC procedure is the cross-check of the daily data extracted from the main and back up meters ^{/ED/} against the monthly energy production report ^{/MEPR/} and the power generation invoices ^{/EEG/} . The Operation Chief verifies daily both data from the main and back up meter in order to identify any differences between them. As the CNDC is connected to the main meter (via modem) with 1 dedicated channel, they check also daily the delivered energy. Furthermore DISNORTE-DISSUR checks the delivered energy and confirms ^{/EEG/} it monthly. The calibration of the meters is done by a certified auditor and registered by CNDC. The verification team had checked the calibration certificates. <i>Justification of evidences:</i> The monitoring plan was reviewed. The PP had provided the power generation reports ^{/MEPR/} and the sales electricity records ^{/EEG/} . Calibration certificates had been also checked for the ION high voltage power meters ^{/CC_ION/} and the current Nexus low voltage power meters ^{/CC_nexus/} . <i>Conclusion:</i> The QA/QC procedure regarding energy generated is in line with the Monitoring Plan. The verification team had checked all documents which provided evidence of the net energy generation exported to the grid used for calculation of emission reduction.	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
		The calibration and maintenance of the ION and Nexus power meters is performed by competent personnel.		
d) Correctness (EB 55 Annex 1, §§ 202, 206, 221e) <i>Determine whether the value given in the monitoring report is correct or determined in a conservative manner.</i> <i>In case of conservative approaches used in lieu of the monitoring as per registered MP detailed assessment of the conservativeness of the approach used should be given.</i> <i>In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.</i>	/MR/ /XLS/ /EEG/ /ED/ /DWS/ /MEPR/ /cndc/ /DTE/	☐ Correct ☒ Not correct <i>Description:</i> The invoices issued by DISNORTE-DISSUR ^{/EEG/} so as the measurements from the power meters ^{/DWS/} have been checked and no discrepancies have been identified. DISNORTE-DISSUR is an entity which is under concession by INE to distribute and commercialize electrical energy. The official web site ^{/cndc/} was checked in order to verify the identity of DISNORTE-DISSUR. All the gross energy generation values given in the monitoring report and the corresponding Excel sheets were found correct. Regarding the power consumption data, the PP has selected the most conservative value based on the DTE ^{/DTE/} power consumption records, as these values represent higher power consumption resulting in lower emission reductions for the project. Nevertheless, the verification team has identified that for January, February and March 2012 the values applied are not in accordance to the DTE reports. <i>Justification of evidences:</i> The electricity invoices ^{/EEG/} and the power consumption reports ^{/DTE/} so as the power generation records ^{/MEPR/} were reviewed and crosschecked. Also the data uploaded to the energy authority was reviewed ^{/DWS/} . <i>Conclusion:</i> Mistakes have been found in the monitoring report and the emission reductions calculation spreadsheet regarding the net electricity generation, correction is required. Please, refer to CAR D3 raised below.	CAR D3	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
D.2. EG^{230kV}_{AMAYO,y}		Description: Quantity of electricity delivered to the grid (230 kV transmission line) by the entire wind farm (Phase I + Phase II)		
a) Measurement / Determination method (EB 55 Annex 1, §§ 184-185, 202-203) <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. Furthermore, verify the frequency of measurements as per the requirements.</i> <i>Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.</i>	/CC_ION/ /DR/ /DWS/ /MEPR/ /OR/	<i>Description:</i> The quantity of electricity delivered to the grid (230 kV transmission line) by the entire wind farm (Phase I + Phase II) is measured and recorded by one main meter^{/CC_ION/} (ION 8600 s/n: PT-0901A531-01) and one back up^{/CC_ION/} (ION 8600 s/n: PT-0901A532-01) located in the Protection, Control and Monitoring (PCYM) room of the wind farm at the high side voltage (230 kV Delivery Point) of the AMAYO Substation. Both meters are bi-directional and also calibrated^{/CC_ION/}, sealed, and belong to Amayo. Calibration of the meters shall be done once every 2 years in agreement of the Operational Regulation^{/OR/} (Annex III, section 7.3). The calibration records^{/CC_ION/} of the power meters located at the delivery point were checked by the verification team. Both meters were calibrated on October 29th 2010. Therefore the calibration certificates are still valid for the 4th monitoring period. When a failure is detected in the main meter, the official measure will be taken from the back up meter (^{/OR/} section X/10). Extraordinary audits (including calibration) are possible if CNDC or Amayo detect any failure in the measurement (^{/OR/} Annex III, section 7.1/d). The audit shall be performed by an auditor certified by CNDC. INE defines the local standards and parameters to be followed in the electricity generation sector. Amayo download daily the data from the main and back up meters and monitors the total electricity generation^{/DR/}. Also, a monthly report^{/MEPR/} of total generation is elaborated.	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
		<i>Justification of evidences:</i> The registered MP has been checked by the verification team. Interviews were also performed with personnel from CEA to confirm the measure method. Also, the Operational Regulation^{/OR/} requirements were checked. <i>Conclusion:</i> the monitoring of this parameter is in line with the registered MP of the PDD and with the applied methodology.		
b) Accuracy (EB 55 Annex 1, §§ 205c, 206a) <i>In case of measured (or estimated) values, check whether the accuracy of equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan or if significant inaccuracies occur; in this case, make sure that the most conservative assumptions theoretically possible have been made for calculating ERs.</i>	/CC_ION I	<i>Description:</i> Both ION meters are state of the art. The calibration of the meters is done by a certified auditor and registered by CNDC. The verification team had checked the calibration certificates. Both meters were calibrated on October 29th 2010 and the calibration validity is until 2012/10/28. Therefore the calibration certificates are still valid for the 4th monitoring period. <i>Justification of evidences:</i> During site visit, the meters were checked. The ION power meters are sealed and protected. New calibration certificates are not required yet because the measurement equipment should be calibrated at least every two years^{/CC_ION/}. <i>Conclusion:</i> There is no significant inaccuracy expected for the ION and Nexus power meter measurements.	OK	OK
c) QA/QC Procedure (EB 55 Annex 1, §§ 184b (vii), 205c, 206) <i>Describe whether all applicable QA/QC procedures are met. Assess further if the calibration of the monitoring equipment has been carried out in line with the latest EB guidance.</i>	/ED/ /CC_ION I	<i>Description:</i> The QA/QC procedure is the cross-check of the daily data extracted from the main ION meter^{/ED/} against the back-up ION meter. The Operation Chief verifies daily both data from the main and back up meter in order to identify any differences between them. As the CNDC is connected to the main meter (via modem) with 1 dedicated channel, they check also daily the delivered energy. The calibration of the meters is done by a certified auditor and	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
		registered by CNDC. The verification team had checked the calibration certificates. <i>Justification of evidences:</i> The monitoring plan was reviewed. Calibration certificates have been checked for the ION high voltage power meters^{/CC_ION/}. <i>Conclusion:</i> The QA/QC procedure regarding energy generated is in line with the Monitoring Plan. The verification team had checked all documents which provided evidence of the net energy generation exported to the grid used for calculation of emission reduction. The calibration and maintenance of the power meters is performed by competent personnel.		
d) Correctness (EB 55 Annex 1, §§ 202, 206, 221e) <i>Determine whether the value given in the monitoring report is correct or determined in a conservative manner.</i> <i>In case of conservative approaches used in lieu of the monitoring as per registered MP detailed assessment of the conservativeness of the approach used should be given.</i> <i>In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.</i>	/EEG/ /EEG_A2/ / /DWS/ /DTE/	☒ Correct ☐ Not correct <i>Description:</i> The verification team has checked power generation values for Amayo Phase I and Amayo Phase II based on the power meters measurements at the high voltage side: The gross generation values from both wind farms were found correct. As a cross-check measurement the verification team has checked the power generation invoices^{/EEG/ & /EEG_A2/} and the DTE reports^{/DTE/}. No discrepancies were identified. <i>Justification of evidences:</i> The electricity invoices^{/EEG/ & /EEG_A2/} so as the power generation records^{/MEPR/& /ED/} were reviewed and crosschecked. Also the data uploaded to the energy authority was reviewed^{/DWS/}. <i>Conclusion:</i> the values given in the monitoring report are correct and determined in a conservative manner.	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
D.3. EG^{13.8kV}_{PhaseI,y}		Description: Gross electricity generation in year y by Phase I, as measured in the 13.8 kV meter		
a) Measurement / Determination method (EB 55 Annex 1, §§ 184-185, 202-203) <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. Furthermore, verify the frequency of measurements as per the requirements.</i> <i>Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.</i>	/DR/ /DWS/ /MEPR/ /PCC/ /CC_nex us/ /OR/	<i>Description:</i> according to the registered MP this parameter is measured by power meters and data shall be automatically and monitored on an hourly basis. The data is recorded and aggregated monthly. 2 sets of main and back-up power meters (Cells) are installed at the low voltage side (13.8 kV) collector of each project activity (Amayo Phase I and Amayo Phase II) located in the Substation Medium Voltage room. These collectors send the power generation from each phase to a common bus bar at the entrance of the low voltage side of the Amayo I Substation main transformer. All power meters are bi-directional. The calibration records of the power meters located at the delivery point were checked by the verification team. Both set of Nexus meters^{/CC_Nexus/} were calibrated on September 30th 2010. Therefore the calibration certificate is still valid for the 4th monitoring period. Calibration of the meters shall be done once every 2 years in agreement of the Operational Regulation^{/OR/} (Annex III, section 7.3). When a failure is detected in the main meter, the official measure will be taken from the back up meter (^{/OR/} section X/10). Extraordinary audits (including calibration) are possible if CNDC or Amayo detect any failure in the measurement (^{/OR/} Annex III, section 7.1/d). The audit shall be performed by an auditor certified by CNDC. INE defines the local standards and parameters to be followed	CL-D1	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
		in the electricity generation sector. Amayo download daily the data from the main and back up meter and monitors the total electricity generation^{/DR/}. Also, a monthly report^{/MEPR/} of total generation is elaborated. <i>Justification of evidences:</i> The registered MP has been checked by the verification team. Interviews were also performed with personnel from CEA to confirm the measure method. Also, the Operational Regulation^{/OR/} requirements were checked. <i>Conclusion:</i> the monitoring of this parameter is in line with the registered MP of the PDD and with the applied methodology. Nevertheless, it has been identified that the serial numbers for Nexus power meters at Cell 3 are not correct. Hence, CL D1 was raised. (CL D1) Parameters $EG^{13.8kV}_{Phase,y}$ and $EC^{13.8kV}_{Phase,y}$: Serial number of the main and back-up Nexus power meters at Cell 3 are not in accordance with the installed equipment and the calibration certificates checked on-site.		
b) Accuracy (EB 55 Annex 1, §§ 205c, 206a) <i>In case of measured (or estimated) values, check whether the accuracy of equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan or if significant inaccuracies occur; in this case, make sure that the most conservative assumptions theoretically possible have been made for calculating ERs.</i>	/MR/ /CC_nex us/	<i>Description:</i> Both sets of Nexus power meters are state of the art. The calibration of the meters is done by a certified auditor and registered by CNDP. The verification team had checked the calibration certificates. The Nexus power meters were calibrated on 2010/09/30 and the calibration validity is until 2012/09/29. Therefore the calibration certificates are still valid for the 4th monitoring period. <i>Justification of evidences:</i> During site visit, the meters were checked. The Nexus power meters are sealed and protected. New calibration certificates are not required yet because the measurement equipment should be calibrated at least every two	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
		years ^{/CC_ION/} . <i>Conclusion:</i> There is no significant inaccuracy expected for the Nexus power meter measurements. The accuracy of equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan.		
c) QA/QC Procedure (EB 55 Annex 1, §§ 184b (vii), 205c, 206) <i>Describe whether all applicable QA/QC procedures are met. Assess further if the calibration of the monitoring equipment has been carried out in line with the latest EB guidance.</i>	/ MR/ / CC_nexus/ us/	<i>Description:</i> The QA/QC procedure is the cross-check of the daily data extracted from the main Nexus meters ^{/ED/} against the back-up Nexus meters. The Operation Chief verifies daily both data from the main and back up meter in order to identify any differences between them. As the CNDC is connected to the main meters (via IP address), they check also daily the delivered energy. The calibration of the meters is done by a certified auditor and registered by CNDC. The verification team had checked the calibration certificates. <i>Justification of evidences:</i> The monitoring plan was reviewed. Calibration certificates have been checked for the Nexus power meters ^{/CC_Nexus/} . <i>Conclusion:</i> The QA/QC procedure regarding energy generated is in line with the Monitoring Plan. The calibration and maintenance of the power meters is performed by competent personnel.	OK	OK
d) Correctness (EB 55 Annex 1, §§ 202, 206, 221e) <i>Determine whether the value given in the monitoring report is correct or determined in a conservative manner.</i>	/ MR/ / ED/ / XLS/	☒ Correct ☐ Not correct <i>Description:</i> the value given at the MR and the corresponding Excel sheet is correct. The verification team has checked the measured data from the Nexus main and back-up meters. No discrepancies were	OK	OK

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 conservative approaches used in lieu of the monitoring as per registered MP detailed assessment of the conservativeness of the approach used should be given.</i> <i>In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.</i>		identified. Also, the power meters calibration certificates have been checked. <i>Justification of evidences:</i> the MR and excel spreadsheet were intensively checked. No deviations from registered PDD and MP have been detected. Power generation data from the power meters^{/ED/} has been reviewed. <i>Conclusion:</i> the values given in the MR and the excel spreadsheet are consistent and justified.		
D.4. EG^{13.8kV} PhaseII,y		Description: Gross electricity generation in year y by Phase II, as measured in the 13.8 kV meter		
a) Measurement / Determination method (EB 55 Annex 1, §§ 184-185, 202-203) <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. Furthermore, verify the frequency of measurements as per the requirements.</i> <i>Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.</i>	/DR/ /DWS/ /MEPR/ /PCC/ /CC_nex us/ /OR/	<i>Description:</i> according to the registered MP this parameter is measured by power meters and data shall be automatically and monitored on an hourly basis. The data is recorded and aggregated monthly. 2 sets of main and back-up power meters (Cells) are installed at the low voltage side (13.8 kV) collector of each project activity (Amayo Phase I and Amayo Phase II) located in the Substation Medium Voltage room. These collectors send the power generation from each phase to a common bus bar at the entrance of the low voltage side of the Amayo I Substation main transformer. All power meters are bi-directional. The calibration records of the power meters located at the delivery point were checked by the verification team. Both set of Nexus meters^{/CC_Nexus/} were calibrated on 2010/10/24. Therefore the calibration certificate is still valid for the 4th monitoring period.	GLD2	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
		Calibration of the meters shall be done once every 2 years in agreement of the Operational Regulation^{/OR/} (Annex III, section 7.3). When a failure is detected in the main meter, the official measure will be taken from the back up meter (^{/OR/} section X/10). Extraordinary audits (including calibration) are possible if CNDC or Amayo detect any failure in the measurement (^{/OR/} Annex III, section 7.1/d). The audit shall be performed by an auditor certified by CNDC. INE defines the local standards and parameters to be followed in the electricity generation sector. Amayo download daily the data from the main and back up meter and monitors the total electricity generation^{/DR/}. Also, a monthly report^{/MEPR/} of total generation is elaborated. <i>Justification of evidences:</i> The registered MP has been checked by the verification team. Interviews were also performed with personnel from CEA to confirm the measure method. Also, the Operational Regulation^{/OR/} requirements were checked. <i>Conclusion:</i> the monitoring of this parameter is in line with the registered MP of the PDD and with the applied methodology. Nevertheless, it has been identified that the serial number for main Nexus power meter at Cell 5 is not correct. Hence, CL D2 was raised. (CL D2) Parameters $EG^{13.8kV}_{Phasell,y}$ and $EC^{13.8kV}_{Phasell,y}$: Serial number f the main Nexus power meter at Cell 5 is not in accordance with the installed equipment and the calibration certificates checked on-site.		

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
b) Accuracy (EB 55 Annex 1, §§ 205c, 206a) <i>In case of measured (or estimated) values, check whether the accuracy of equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan or if significant inaccuracies occur; in this case, make sure that the most conservative assumptions theoretically possible have been made for calculating ERs.</i>	/MR/ /CC_nex us/	<i>Description:</i> Both sets of Nexus power meters are state of the art. The calibration of the meters is done by a certified auditor and registered by CNDC. The verification team had checked the calibration certificates. The Nexus power meters were calibrated on 2010/10/24. Therefore the calibration certificates are still valid for the 4th monitoring period. <i>Justification of evidences:</i> During site visit, the meters were checked. The Nexus power meters are sealed and protected. New calibration certificates are not required yet because the measurement equipment should be calibrated at least every two years^{/CC_ION/}. <i>Conclusion:</i> There is no significant inaccuracy expected for the Nexus power meter measurements. The accuracy of equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan.	OK	OK
c) QA/QC Procedure (EB 55 Annex 1, §§ 184b (vii), 205c, 206) <i>Describe whether all applicable QA/QC procedures are met. Assess further if the calibration of the monitoring equipment has been carried out in line with the latest EB guidance.</i>	/MR/ /CC_nex us/	<i>Description:</i> The QA/QC procedure is the cross-check of the daily data extracted from the main Nexus meters^{/ED/} against the back-up Nexus meters. The Operation Chief verifies daily both data from the main and back up meter in order to identify any differences between them. As the CNDC is connected to the main meters (via IP address), they check also daily the delivered energy. The calibration of the meters is done by a certified auditor and registered by CNDC. The verification team had checked the calibration certificates. <i>Justification of evidences:</i> The monitoring plan was reviewed. Calibration certificates have been checked for the Nexus power	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
		meters^{/CC_Nexus/}. <i>Conclusion:</i> The QA/QC procedure regarding energy generated is in line with the Monitoring Plan. The calibration and maintenance of the power meters is performed by competent personnel.		
d) Correctness (EB 55 Annex 1, §§ 202, 206, 221e) <i>Determine whether the value given in the monitoring report is correct or determined in a conservative manner.</i> <i>In case of conservative approaches used in lieu of the monitoring as per registered MP detailed assessment of the conservativeness of the approach used should be given.</i> <i>In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.</i>	/MR/ /ED/ /XLS/	☒ Correct ☐ Not correct <i>Description:</i> the value given at the MR and the corresponding Excel sheet is correct. The verification team has checked the measured data from the Nexus main and back-up meters. No discrepancies were identified. Also, the power meters calibration certificates have been checked. <i>Justification of evidences:</i> the MR and excel spreadsheet were intensively checked. No deviations from registered PDD and MP have been detected. Power generation data from the power meters^{/ED/} has been reviewed. <i>Conclusion:</i> the values given in the MR and the excel spreadsheet are consistent and justified.	OK	OK
D.5. EC^{230kV}_{AMAYO,y}		Description: Quantity of electricity consumed from the grid at the 230 kV transmission line by the entire wind farm (Phase I + Phase II)		
a) Measurement / Determination method (EB 55 Annex 1, §§ 184-185, 202-203) <i>Describe how the monitoring parameter was</i>	/CC_ION / /DR/ /DWS/	<i>Description:</i> The quantity of electricity consumed from the grid (230 kV transmission line) by the entire wind farm (Phase I + Phase II) is measured and recorded by one main meter^{/CC_ION/} (ION 8600 s/n: PT-0901A531-01) and one back up^{/CC_ION/} (ION	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. Furthermore, verify the frequency of measurements as per the requirements.</i> <i>Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.</i>	/MEPR/ /OR/	8600 s/n: PT-0901A532-01) located in the Protection, Control and Monitoring (PCYM) room of the wind farm at the high side voltage (230 kV Delivery Point) of the AMAYO Substation. Both meters are bi-directional and also calibrated^{/CC_ION/}, sealed, and belong to Amayo. Calibration of the meters shall be done once every 2 years in agreement of the Operational Regulation^{/OR/} (Annex III, section 7.3). The calibration records^{/CC_ION/} of the power meters were checked by the verification team. Both meters were calibrated on October 29th 2010. Therefore the calibration certificates are still valid for the 4th monitoring period. When a failure is detected in the main meter, the official measure will be taken from the back up meter (^{/OR/} section X/10). Extraordinary audits (including calibration) are possible if CNDC or Amayo detect any failure in the measurement (^{/OR/} Annex III, section 7.1/d). The audit shall be performed by an auditor certified by CNDC. INE defines the local standards and parameters to be followed in the electricity generation sector. Amayo download daily the data from the main and back up meters and monitors the total electricity consumption^{/DR/}. Also, a monthly report^{/MEPR/} of total power consumption is elaborated. According to the registered MP this data is also crosschecked against the Economic Transaction Document (DTE) and the highest value is used as a conservative assumption. <i>Justification of evidences:</i> The registered MP has been checked by the verification team. Interviews were also performed with personnel from CEA to confirm the measure method. Also, the Operational Regulation^{/OR/} requirements were 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 monitoring of this parameter is in line with the registered MP of the PDD and with the applied methodology.		
b) Accuracy (EB 55 Annex 1, §§ 205c, 206a) <i>In case of measured (or estimated) values, check whether the accuracy of equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan or if significant inaccuracies occur; in this case, make sure that the most conservative assumptions theoretically possible have been made for calculating ERs.</i>	/CC_ION/ I	<i>Description:</i> Both ION meters are state of the art. The calibration of the meters is done by a certified auditor and registered by CNDC. The verification team had checked the calibration certificates. Both meters were calibrated on October 29 th 2010 and its calibration validity lasts until 2012/10/28. Therefore the calibration certificates are still valid for the 4 th monitoring period. <i>Justification of evidences:</i> During site visit, the meters were checked. The ION power meters are sealed and protected. New calibration certificates are not required yet because the measurement equipment should be calibrated at least every two years ^{/CC_ION/} . <i>Conclusion:</i> There is no significant inaccuracy expected for the ION and Nexus power meter measurements.	OK	OK
c) QA/QC Procedure (EB 55 Annex 1, §§ 184b (vii), 205c, 206) <i>Describe whether all applicable QA/QC procedures are met. Assess further if the calibration of the monitoring equipment has been carried out in line with the latest EB guidance.</i>	/ED/ /CC_ION/ I	<i>Description:</i> The QA/QC procedure is the cross-check of the daily data extracted from the ION meter ^{/ED/} against the Economic Transaction Document (DTE). The Operation Chief verifies daily both data from the main and back up meter in order to identify any differences between them. As the CNDC is connected to the main meter (via modem) with 1 dedicated channel, they check also daily the energy consumed. The calibration of the meters is done by a certified auditor and registered by CNDC. The verification team had checked the calibration certificates. <i>Justification of evidences:</i> The monitoring plan was reviewed.	OK	OK



Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
		Calibration certificates have been checked for the ION high voltage power meters^{/CC_ION/}. The DTE reports have been checked by the PP. <i>Conclusion:</i> The QA/QC procedure regarding energy generated is in line with the Monitoring Plan. The verification team had checked all documents which provided evidence of the energy consumed from the grid used for calculation of emission reduction. The calibration and maintenance of the power meters is performed by competent personnel.		
d) Correctness (EB 55 Annex 1, §§ 202, 206, 221e) <i>Determine whether the value given in the monitoring report is correct or determined in a conservative manner.</i> <i>In case of conservative approaches used in lieu of the monitoring as per registered MP detailed assessment of the conservativeness of the approach used should be given.</i> <i>In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.</i>	/MR/ /DWS/ /ED/ /XLS/	☒ Correct ☐ Not correct <i>Description:</i> The verification team has checked power consumption values for Amayo Phase I and Amayo Phase II based on the power meters measurements at the high voltage side: The energy consumption values from both wind farms were found correct. As a cross-check measurement the verification team has checked the power consumption data from the DTE reports^{/DTE/}. No discrepancies were identified. <i>Justification of evidences:</i> the power consumption records^{/DTE/}, ^{/MEPR/& /ED/} were reviewed and crosschecked. Also the data uploaded to the energy authority was reviewed^{/DWS/}. <i>Conclusion:</i> the values given in the monitoring report are correct and determined in a conservative manner.	OK	OK
D.6. EC^{13.8kV} PhaseI,y		Description: Electricity consumption in year y by Phase I, as measured in the 13.8 kV meter		

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
a) Measurement / Determination method (EB 55 Annex 1, §§ 184-185, 202-203) <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. Furthermore, verify the frequency of measurements as per the requirements.</i> <i>Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.</i>	/DR/ /DWS/ /MEPR/ /PCC/ /CC_nexus/ /OR/	<i>Description:</i> according to the registered MP this parameter is measured by power meters and data shall be automatically and monitored on an hourly basis. The data is recorded and aggregated monthly. 2 sets of main and back-up power meters (Cells) are installed at the low voltage side (13.8 kV) collector of each project activity (Amayo Phase I and Amayo Phase II) located in the Substation Medium Voltage room. All power meters are bi-directional. The calibration records of the power meters were checked by the verification team. Both set of Nexus meters^{/CC_Nexus/} were calibrated on 2010/10/24. Therefore the calibration certificate is still valid for the 4th monitoring period. Calibration of the meters shall be done once every 2 years in agreement of the Operational Regulation^{/OR/} (Annex III, section 7.3). When a failure is detected in the main meter, the official measure will be taken from the back up meter (^{/OR/} section X/10). Extraordinary audits (including calibration) are possible if CNDC or Amayo detect any failure in the measurement (^{/OR/} Annex III, section 7.1/d). The audit shall be performed by an auditor certified by CNDC. INE defines the local standards and parameters to be followed in the electricity generation sector. Amayo download daily the data from the main and back up meter and monitors the total electricity consumption^{/DR/}. Also, a monthly report^{/MEPR/} of total power consumption is elaborated. According to the registered MP this data is also crosschecked against the Economic Transaction Document (DTE) and the	CL-D1	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
		highest value is used as a conservative assumption. <i>Justification of evidences:</i> The registered MP has been checked by the verification team. Interviews were also performed with personnel from CEA to confirm the measure method. Also, the Operational Regulation^{/OR/} requirements were checked. <i>Conclusion:</i> the monitoring of this parameter is in line with the registered MP of the PDD and with the applied methodology. Nevertheless, it has been identified that the serial numbers for Nexus power meters at Cell 3 are not correct. Hence, CL D1 was raised, please refer to it		
b) Accuracy (EB 55 Annex 1, §§ 205c, 206a) <i>In case of measured (or estimated) values, check whether the accuracy of equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan or if significant inaccuracies occur; in this case, make sure that the most conservative assumptions theoretically possible have been made for calculating ERs.</i>	/MR/ /CC_nex us/	<i>Description:</i> Both sets of Nexus power meters are state of the art. The calibration of the meters is done by a certified auditor and registered by CNDC. The verification team had checked the calibration certificates. The Nexus power meters were calibrated on 2010/09/30. Therefore the calibration certificates are still valid for the 4th monitoring period. <i>Justification of evidences:</i> During site visit, the meters were checked. The Nexus power meters are sealed and protected. New calibration certificates are not required yet because the measurement equipment should be calibrated at least every two years^{/CC_ION/}. <i>Conclusion:</i> There is no significant inaccuracy expected for the Nexus power meter measurements. The accuracy of equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan	OK	OK
c) QA/QC Procedure (EB 55 Annex 1, §§ 184b (vii), 205c, 206)	/MR/ /CC_nex	<i>Description:</i> The QA/QC procedure is the cross-check of the daily data extracted from the power meters^{/ED/} against the DTE	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
<i>Describe whether all applicable QA/QC procedures are met. Assess further if the calibration of the monitoring equipment has been carried out in line with the latest EB guidance.</i>	us/ /DTE/	reports. According to the registered MP the highest value is used as a conservative assumption. The Operation Chief verifies daily both data from the main and back up meter in order to identify any differences between them. As the CNDC is connected to the main meters (via IP address), they check also daily the delivered energy. The calibration of the meters is done by a certified auditor and registered by CNDC. The verification team had checked the calibration certificates. The DTE reports for the monitoring period have been checked by the verification team. <i>Justification of evidences:</i> The monitoring plan was reviewed. Calibration certificates have been checked for the Nexus power meters^{/CC_Nexus/}. Also, the DTE reports were reviewed. <i>Conclusion:</i> The QA/QC procedure regarding energy generated is in line with the Monitoring Plan. The calibration and maintenance of the power meters is performed by competent personnel. Also, it has been identified that the power consumption values from the DTE reports which represent higher project emissions are being used for the emission reductions calculations.		
d) Correctness (EB 55 Annex 1, §§ 202, 206, 221e) <i>Determine whether the value given in the monitoring report is correct or determined in a conservative manner.</i> <i>In case of conservative approaches used in lieu of the</i>	/ED/ /DTE/ /XLS/	☐ Correct ☒ Not correct <i>Description:</i> The verification team has checked the calculated values of power consumption for Amayo Phase I and Amayo Phase II based on the power meters measurements at the low voltage and high voltage side and the power consumption values	CAR D3	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
<i>monitoring as per registered MP detailed assessment of the conservativeness of the approach used should be given.</i> <i>In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.</i>		determined by the DTE Reports. The measured power consumption values for the project activity are lower than the power consumption values reported in the DTE documents. Nevertheless, as stated in the registered MP the PP applies the DTE values in order to be conservative. However, it has been identified that the power consumption values for the months of January, February and March 2012 given in the monitoring report and the corresponding Excel sheets were not consistent according to the values reported in the DTE documents. <i>Justification of evidences:</i> The power consumption measurements^{/ED/} so as the DTE reports have been checked by the verification team. <i>Conclusion:</i> it has been identified that some of the power consumption values from the DTE reports were not correct according to the provided evidences. Hence, CAR D3 was raised. (CAR D3) Parameter EC^{13.8kV}_{Phase I,y}: correction is necessary as follow: • Value of January 2012 as per DTE (it shall be 1,090 kWh) • Value of February 2012 as per DTE (it shall be 770 kWh) • Value of March 2012 as per DTE is missing (it shall be 270 kWh)		
D.7. EC^{13.8kV}_{Phase II,y}		Description: Electricity consumption in year y by Phase II, as measured in the 13.8 kV meter		
a) Measurement / Determination method	/DR/	<i>Description:</i> according to the registered MP this parameter is	~~GLD2~~	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
(EB 55 Annex 1, §§ 184-185, 202-203) <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. Furthermore, verify the frequency of measurements as per the requirements.</i> <i>Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.</i>	/DWS/ /MEPR/ /PCC/ /CC_nexus/ /OR/	measured by power meters and data shall be automatically and monitored on an hourly basis. The data is recorded and aggregated monthly. 2 sets of main and back-up power meters (Cells) are installed at the low voltage side (13.8 kV) collector of each project activity (Amayo Phase I and Amayo Phase II) located in the Substation Medium Voltage room. All power meters are bi-directional. The calibration records of the power meters were checked by the verification team. Both set of Nexus meters^{/CC_Nexus/} were calibrated on 2010/10/24. Therefore the calibration certificate is still valid for the 4th monitoring period.. Calibration of the meters shall be done once every 2 years in agreement of the Operational Regulation^{/OR/} (Annex III, section 7.3). When a failure is detected in the main meter, the official measure will be taken from the back up meter (^{/OR/} section X/10). Extraordinary audits (including calibration) are possible if CNDC or Amayo detect any failure in the measurement (^{/OR/} Annex III, section 7.1/d). The audit shall be performed by an auditor certified by CNDC. INE defines the local standards and parameters to be followed in the electricity generation sector. Amayo download daily the data from the main and back up meter and monitors the total electricity consumption^{/DR/}. Also, a monthly report^{/MEPR/} of total energy consumption is elaborated. According to the registered MP this data is also crosschecked against the Economic Transaction Document (DTE) and the highest value is used as a conservative assumption.		

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
		<i>Justification of evidences:</i> The registered MP has been checked by the verification team. Interviews were also performed with personnel from CEA to confirm the measure method. Also, the Operational Regulation^{/OR/} requirements were checked. <i>Conclusion:</i> the monitoring of this parameter is in line with the registered MP of the PDD and with the applied methodology. Nevertheless, it has been identified that the serial number for main Nexus power meter at Cell 5 is not correct. Hence, CL D2 was raised, please refer to it.		
b) Accuracy (EB 55 Annex 1, §§ 205c, 206a) <i>In case of measured (or estimated) values, check whether the accuracy of equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan or if significant inaccuracies occur; in this case, make sure that the most conservative assumptions theoretically possible have been made for calculating ERs.</i>	/MR/ /CC_nexus/	<i>Description:</i> Both sets of Nexus power meters are state of the art. The calibration of the meters is done by a certified auditor and registered by CNDC. The verification team had checked the calibration certificates. The Nexus power meters were calibrated on 2010/10/24. Therefore the calibration certificates are still valid for the 4th monitoring period. <i>Justification of evidences:</i> During site visit, the meters were checked. The Nexus power meters are sealed and protected. New calibration certificates are not required yet because the measurement equipment should be calibrated at least every two years^{/CC_ION/}. <i>Conclusion:</i> There is no significant inaccuracy expected for the Nexus power meter measurements. The accuracy of equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan.	OK	OK
c) QA/QC Procedure (EB 55 Annex 1, §§ 184b (vii), 205c, 206) <i>Describe whether all applicable QA/QC procedures</i>	/MR/ /CC_nexus/	<i>Description:</i> The QA/QC procedure is the cross-check of the daily data extracted from the power meters^{/ED/} against the DTE reports. According to the registered MP the highest value is	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
are met. Assess further if the calibration of the monitoring equipment has been carried out in line with the latest EB guidance.	/DTE/	used as a conservative assumption. The Operation Chief verifies daily both data from the main and back up meter in order to identify any differences between them. As the CNDC is connected to the main meters (via IP address), they check also daily the delivered energy. The calibration of the meters is done by a certified auditor and registered by CNDC. The verification team had checked the calibration certificates. The DTE reports for the monitoring period have been checked by the verification team. <i>Justification of evidences:</i> The monitoring plan was reviewed. Calibration certificates have been checked for the Nexus power meters^{/CC_Nexus/}. Also, the DTE reports were reviewed. <i>Conclusion:</i> The QA/QC procedure regarding energy generated is in line with the Monitoring Plan. The calibration and maintenance of the power meters is performed by competent personnel. Also, it has been identified that the power consumption values from the DTE reports which represent higher project emissions are being used for the emission reductions calculations.		
d) Correctness (EB 55 Annex 1, §§ 202, 206, 221e) Determine whether the value given in the monitoring report is correct or determined in a conservative manner. In case of conservative approaches used in lieu of the monitoring as per registered MP detailed assessment	/MR/ /ED/	☒ Correct ☐ Not correct <i>Description:</i> the value given at the MR and the corresponding Excel sheet is correct. The verification team has checked the measured data from the Nexus main and back-up meters. No discrepancies were identified. Also, the power meters calibration certificates have been	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
<i>of the conservativeness of the approach used should be given.</i> <i>In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.</i>		checked. <i>Justification of evidences:</i> the MR and excel spreadsheet were intensively checked. No deviations from registered PDD and MP have been detected. Power generation data from the power meters^{/ED/} has been reviewed. <i>Conclusion:</i> the values given in the MR and the excel spreadsheet are consistent and justified.		
E. Emission reductions calculation				
E.1. Traceability (EB 55 Annex 1, § 182) <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>	/XLS/ /MP/ /PDD/	<i>Description:</i> the Excel calculation spreadsheet was checked and it has been identified that the raw data and formulae applied are in line with MP. Nevertheless, the calculations are not completely traceable as the ER calculation spreadsheet do not show the calculation procedure and formula as stated in the MP. <i>Justification of evidences:</i> an unprotected Excel calculation spreadsheet has been provided and is completely visible. The formulas in the excel sheet were reviewed in detail against the MP, applied meth and tools. <i>Conclusion:</i> The calculation is correct. Nevertheless, the ER spreadsheet does not show the applied formulas to calculate the net energy delivered by the project activity. Hence, CAR E1 was raised. (CAR E1) The ER calculation spreadsheet does not show the application of the formulas used to determine the net power generation from	CAR E1	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
		the project activity as per the calculation procedure stated in the registered monitoring plan.		
E.2. Parameter consistency (EB 55 Annex 1, § 186; EB 54 Annex 34 Pt.1) <i>Assess whether all internal and external parameters 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). Further ensure the consistency of notations for all parameters in the PDD, MR, calculation spreadsheet.</i>	/XLS/ /MR/	<i>Description:</i> not all monitored parameters and data used for the calculations are applied consistently in the MR and ER calculation sheet. The verification team has identified that as per the ER calculation project emissions are zero, but Table D of Section E.4 shows other values for project emissions. <i>Justification of evidences:</i> the verification team performed a complete review of MR, ER calculations sheet, methodology and relevant reference documents. <i>Conclusion:</i> some editorial mistakes in the project emissions values shown in Section E.4 of the MR have been identified. CL E2 was raised. (CL E2) The values for the total project emissions stated in Table D of Section E.4 of the MR are not in accordance with the project emission values applied in the ER calculation spreadsheet.	CL E2	OK
E.3. Parameter presentation (EB 54 Annex 34 Pt.1) <i>Check if all values included in the MR are presented as per international standards</i> - <i>Format: Standard format (e.g. 1,000 representing one thousand and 1.0 representing one).</i> - <i>Units: Values shall be directly given in SI units –</i>	/MR/	<i>Description:</i> all values included in the MR are presented as per international standards <i>Justification of evidences:</i> the verification team performed a complete review of MR. <i>Conclusion:</i> all values included in the MR are presented as per international standards	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
or additionally to original units transferred to SI. Short scale naming system: (Only) million = 10^6 and billion 10^9 shall be used.				
E.4. Correctness of calculation (EB 55 Annex 1, §§ 204-206) Check if the applied formulae and methods for calculating baseline emissions, project emissions and leakage are in accordance with the monitoring plan and / or the approved methodology. Assess whether the provided calculations are complete and reflect all requirements of the monitoring plan. Check especially that no standard or old values have been used for calculation where calculations based on up-to-date data is required.	/XLS/ /MP/ /PDD/	<i>Description:</i> All calculations are complete and reflect all requirements stated in the Monitoring Plan. <i>Justification of evidences:</i> Monitoring report and Excel calculation spreadsheet were checked accordingly and crosschecked with the monitoring plan. <i>Conclusion:</i> The calculation is completely traceable. No information or calculation gaps have been identified.	OK	OK
E.5. Emission reductions table (EB 54 Annex 34, E.4) Check if the MR includes a summary table of the emission reductions calculation specifying separately - Total baseline emissions - Total project emissions: - Total leakage - Total emission reductions.	/MR/	☒ The MR includes in section E.4 a summary table of the emission reductions calculation. ☒ The summary table specified the total baseline, project and leakage emissions as well as the total emission reductions separately. ☐ The values as specified in the ER summary table are correct; no issues have been identified during the verification which require changes in the ER calculation. ☒ During the verification issues with impact on the ER calculation have been identified. Thus subject to the	CAR D3 GL-E2	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
Assess whether the values are correct or need to be revised as a consequence of issues identified above.		closure of above listed findings the summary table in E.4 needs to be revised. In this context the following additional findings have been identified: Please, refer to CAR D3 and CL E2 raised above.		
E.6. Comparison with ex-ante determined emission reductions (EB 54 Annex 34, E.5; E.6) <i>Check if the MR includes a comparison of actual values of the monitoring period with the estimations in the registered PDD.</i> <i>Check further whether in case of an increase an appropriate explanation is included in the MR.</i> <i>Assess in case of a significant increase whether this is due to technical or organisational changes within or outside the control of the PP which might require a notification / approval of changes (as per EB 48 Annex 66/67).</i>	/XLS/ /MR/ /PDD/	<i>Description:</i> Section E.6 includes a comparison of the actual emission reduction values of the verified monitoring period with the emission reductions estimation stated in the registered PDD. The verification team has checked the comparison calculation and it has been found that the current ERs are lower than the estimated ER from the PDD. <i>Justification of evidences:</i> The MR and the registered PDD have been checked by the verification team. <i>Conclusion:</i> the MR includes a table with a comparison of actual values of the monitoring period with the estimations in the registered PDD. No increase in the current ERs respect to the ex-ante calculation of the registered PDD has been identified.	OK	OK

ANNEX 2: STATEMENTS OF COMPETENCE OF ALL INVOLVED PERSONNEL



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

Mr. Ricardo Lopes

SCHEME	STATUS	VALID UNTIL
CDM	Lead Assessor (Validation, Verification)	2013-11-04
VCS	Lead Assessor	2013-11-04

Authorization status for technical areas within sectoral scopes:

CODE	TECHNICAL AREA
1.2	Renewable Energy

077 – Rev. 2, Date: 2011-11-01

077_501-F003_2011-11-01_rev2
501-F003 rev2 / 2010-04-19



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	Lead Assessor (Validation, Verification)	2014-06-27
VCS	Lead Assessor	2014-06-27

Authorization status for technical areas within sectoral scopes:

CODE	TECHNICAL AREA	TR SUBCATEGORIES
1.2	Renewable Energies	

082 – Rev. 2, Date: 2011-09-27

082_501-F003_2011-09-27_rev2
501-F003 rev1 / 2011-08-02



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

Mr. Abraham Garza Alvarez

SCHEME	STATUS	VALID UNTIL
CDM	Assessor (Validation, Verification)	2015-03-01
VCS	Assessor	2015-03-01

Authorization status for technical areas within sectoral scopes:

CODE	TECHNICAL AREA
1.2	Renewable Energies
3.1	Energy Demand
4.1	Cement Sector
13.1	Waste Handling and Disposal

235 – Rev. 3, Date: 2012-03-02

235_501-F003_2012-03-02_rev3.doc
501-F003 rev1 / 2011-08-02



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	Lead Assessor (Validation, Verification) Technical Reviewer	2013-11-30
VCS	Lead Assessor Technical Reviewer	2013-11-30

Authorization status for technical areas within sectoral scopes:

CODE	TECHNICAL AREA	TR SUBCATEGORIES
1.2	Renewable Energies	1.2.1 Hydro 1.2.2 Wind 1.2.3 Geothermal 1.2.4 Solar 1.2.5 Tidal
13.1	Waste handling and disposal	13.1.1 Waste management 13.1.2 Waste water management

157 – Rev. 2, Date: 2011-08-10

157_S01-F003_2011-08-10_rev2
S01-F003 rev1 / 2011-08-02



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) Technical Reviewer	2014-08-24
Ji	Senior Assessor Technical Reviewer	2014-08-24
VCS	Senior Assessor Technical Reviewer	2014-08-24

Authorization status for technical areas within sectoral scopes:

CODE	TECHNICAL AREA
14.1	Forestry

095 – Rev. 3, Date: 2011-08-25

095_S01-F003_2011-08-25_rev3
S01-F003 rev6 / 2010-04-19