

VERIFICATION REPORT OF OAXACA IV WIND ENERGY PROJECT

AENOR Asociación Española de
Normalización y Certificación

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Summary:

CE Oaxaca Cuatro S. de R.L. de C.V has commissioned the validation/verification body AENOR to perform a verification of VCS Project Activity “Oaxaca IV Wind Energy Project” in Mexico (hereafter “project activity”) for the period from 18 November 2011 to 15 May 2012. The project with CDM program was validated by AENOR (Report No. 2010/059/CDM/03, issued on 11 May 2012) and was registered on 15 May 2012 under UNFCCC reference number (6216). Since emission reductions occurred prior to the registration of the project as CDM project activity, these emission reductions cannot be claimed as Certified Emission Reduction (CERs). The emission reductions are thus claimed as Voluntary Carbon Units (VCU) and verified on the basis of the Voluntary Carbon Standard (VCS) version 3.3 for GHG emission reduction and removal projects, a gap validation with the cover page and sections 1.2, 1.3, 1.5, 1.6, 1.7, 1.9, 1.10, 1.12.1, 1.12.2, 1.12.3, 1.12.4 and 1.13 of the VCS Project Description Template was validated to comply with VCS rules.

During this verification, 5 Corrective Action Requests (CAR) and 2 Clarification Requests (CLs) were identified related to the monitoring, implementation or operations of the proposed VCS project activity (Monitoring Report version 2.0 of 14/05/2013) in relation to all relevant VCS and UNFCCC requirements and all relevant host Party criteria and the applied baseline and monitoring methodology, and these CARs and CLs are successfully closed after necessary corrections/clarifications by the client.

The verification team concludes that the VCS Project Activity “Oaxaca IV Wind Energy Project” in Mexico, as described in the registered CDM-PDD (version 2.0 dated 23 December 2011), the Project Description (version 2.0 dated 14 May 2013) and the monitoring report (version 2.0 dated 14 May 2013) meets all relevant requirements of VCS version 3.3.

AENOR confirms that the project is implemented in accordance with the validated and registered CDM-PDD and validated VCS-PD and the monitoring plan. The monitoring system is in place and the emission reductions are calculated without material misstatements. Our opinion relates to the projects GHG emissions and the resulting GHG emission reductions reported and related to the valid and registered project baseline and monitoring and its associated documents.

Based on the information checked and evaluated, AENOR is able to certify that the emissions reductions from the “Oaxaca IV Wind Energy Project” project during the period from 18 November 2011 to 15 May 2012 amount to 123,640 tonnes of CO₂e.

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1 INTRODUCTION

CE Oaxaca Cuatro S. de R.L. de C.V has commissioned AENOR to carry out the verification and certification of the emission reductions generated by “Oaxaca IV Wind Energy Project” in Mexico (the project) for the period from 18/11/2011 to 15/05/2012. This report contains the findings from the verification and a certification statement for the certified emission reductions.

1.1 Objective

The objective of the verification is the review and ex-post determination by a Validation/Verification Body (VVB) of the GHG emission reductions that have been achieved as a result of the implementation of the project during a defined verification period. It includes the determination and evaluation that:

- The project activity has been implemented and operated as per the registered CDM-PDD /1/ and that all physical features (technology, project equipment, and monitoring and metering equipment) of the project are in place;
- The monitoring report and other supporting documents provided are complete and verifiable and in accordance with applicable CDM/VCS requirements;
- The actual monitoring systems and procedures comply with the monitoring systems and procedures described in the monitoring plan and the approved methodology; and
- The data is recorded and stored as per the monitoring methodology.

1.2 Scope and Criteria

The verification scope is:

- to verify that actual monitoring systems and procedures are in compliance with the monitoring systems and procedures described in the monitoring plan;
- to evaluate the GHG emission reduction data and express a conclusion with a reasonable level of assurance about whether the reported GHG emission reduction data is free from material misstatement;
- to verify that reported GHG emission data is sufficiently supported by evidence.

The project is assessed against the requirements of VCS version 3.3 /2/ and related rules and guidance. AENOR has, based on the recommendations in the latest version of CDM Validation and Verification Standard /3/, and employed a rule-based approach (as criteria) in the verification, focusing on the identification of significant reporting rules and the reliability of project monitoring.

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

1.3 Level of assurance

The verification report is based on the VCS-PD, CDM-PDD, the VCS Monitoring Report (MR), supporting evidences made available to the verifier and information collected through performing interviews and during the on-site assessment.

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

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

Name	Position in the team
Marcelino Pellitero	Chief Verifier
Raquel del Castillo	Verifier in trainee
Luis Javier Arribas	Technical Reviewer

The verification has been planned and organized to achieve a reasonable level of assurance, with respect to material errors, omissions, and misrepresentations.

1.4 Summary Description of the Project

The Oaxaca IV wind farm is 102 MW of installed capacity, equipped with 68 turbines of 1.5 MW each one located in the municipality of La Venta, Oaxaca State, Mexico. Electricity generated by the project will be delivered to National Interconnected Grid (Mexican Grid) via the Ixtepec Substation.

The main objective of the Project is to generate electricity from wind resources, thus increasing the percentage of renewable sourced power in the Interconnected System and at the same time contributing to the environmental, social and economic sustainability of the country.

The National Interconnected Grid is dominated by thermal power plants. The combined emission factor of the Interconnected Grid is 0.5805 tCO₂e/MWh. Emissions reductions will be achieved by the implementation of the project activity, displacing an equivalent amount of electricity that would have been supplied by the National Interconnected Grid in the absence of the project activity. The annual average of estimated reductions over the crediting period is 245,015 tCO₂e.

The project is fully implemented. The power generated by the project is transmitted to the Ixtepec substation, then onto Mexican grid.

2 VALIDATION PROCESS, FINDINGS AND CONCLUSION

2.1 Validation Process

The Oaxaca IV Wind Energy Project has been registered as a CDM project activity (UNFCCC Reference Number: 6216). Therefore, AENOR only performed validation for the project on those additional requirements by VCS. This validation was completed as part of the current VCU verification.

The validation consisted of the following three phases:

I. Document review of the project design documentation and supporting documents

The documentation was reviewed in combination with the verification activity for the project. Refer to details in Section 3.2.

II. Site inspection and follow-up interviews with project stakeholders

The interviews were performed in combination with the verification activity for the project. Refer to details in Section 3.3.

The onsite assessment was performed in combination with the verification activity for the project. Refer to details in Section 3.4.

III. Resolution of Any Material Discrepancy and Reporting

This activity was performed in combination with the verification activity for the project. Refer to details in Section 3.5.

2.2 Validation Findings

2.2.1 Gap Validation

As the project has been validated under the CDM, only the cover page and sections 1.2, 1.3, 1.5, 1.6, 1.7, 1.9, 1.10, 1.12.1, 1.12.2, 1.12.3, 1.12.4 and 1.13 of the VCS Project Description Template shall be completed. AENOR has undertaken a validation of same, as detailed below.

Cover page

The Cover page of the final VCS-PD /4/ is verified to be correctly completed according to VCS-PD template /5/.

1.2: Sectoral Scope and Project Type

VCS sectoral scope: 1. Energy (renewable/non-renewable).

Project Category: Renewable electricity in grid connected applications

Via checking the registered CDM-PDD /1/, VCS-PD /4/, CDM validation report /6/ and through site visit, it was validated that the project is a wind power project, a renewable energy project. The project is a grid-connected wind farm power plant with the installed capacity of 102 MW.

1.3: Project Proponent

It has been validated that the PP is CE Oaxaca Cuatro S. de R.L. de C.V (host country, Mexico) at UNFCCC website <http://cdm.unfccc.int/Projects/DB/AENOR1337004252.43/view>

1.5: Project Start Date

The project start date of 18/11/2011 can be substantiated by the commissioning report of the firsts WTG sent to CFE /7/. The commissioning of the project is deemed as appropriate and conclusive to be regarded as the date on which the project began generating GHG emission reductions or removals in accordance with the VCS Standard version 3.3. Moreover, the project start date is within 2 years of the CDM validation completion (see CDM validation report /6/ and that the project was registered under the CDM as of 15/05/2012), in compliance with Section 4.1.5 of the VCS Registration and Issuance Process Version 3.4 /8/.

1.6: Project Crediting Period

The crediting period is stated in the final VCS-PD as to commence at the time of VCS project start date and will last for 10 years (and is renewable twice at the maximum). It is further stated that the last VCS crediting period will end at the date when the last CDM crediting period of the project activity will expire, i.e. VCS crediting period will end May 15th 2022.

AENOR has assessed that the same is in compliance with the VCS Standard version 3.3.

1.7: Project Scale and Estimated GHG Emission Reductions or Removals

The proposed project activity was categorized as Project, since the estimated average annual GHG emission reductions is 245,015 tCO₂e, which is less than 300,000 tCO₂e per year as per the registered CDM-PDD.

1.9: Project Location

Through reviewing the registered CDM-PDD and CDM validation report at UNFCCC website <http://cdm.unfccc.int/Projects/DB/AENOR1337004252.43/view>, it was validated that the project is located in La Venta municipality, on coordinates 16°36'36.21" N and 94°47'23.98" W (decimal coordinates: 16.61005925 latitude, -94.78999567 longitude). The location of the project activity has been confirmed during site visit.

1.10: Conditions Prior to Project Initiation

The project activity is the installation of a new grid-connected renewable wind power plant. The conditions prior to project initiation is that the equivalent electricity delivered to the grid by the project activity which would have otherwise been generated by the operation of grid connected power plants in the Mexican grid. Therefore, the proposed project activity is implemented for power generation, and not with the purpose to create GHG emissions and their subsequent reduction, removal or destruction.

1.12.1: Right of Use

Evidences of right of use have been verified via documentation proving ownership of the wind power plant and equipment at the on-site visit, such as Comisión Nacional de la Energía (CFE) award of contract /9/, PPA with the CFE /10/, the Letter of Approval from the Mexican DNA /11/ and the Environmental Impact Manifest approval /12/.

1.12.2: Emissions Trading Programs and Other Binding Limits

The project is not included in an emissions trading program, and does not take place in a jurisdiction or sector in which binding limits are established on GHG emissions. The project does not reduce GHG emissions from activities that participate in an emissions trading program, so this clause is not applicable.

1.12.3: Participation under Other GHG Programs

Through reviewing the registered CDM-PDD and CDM validation report at UNFCCC website <http://cdm.unfccc.int/Projects/DB/AENOR1337004252.43/view>, it was validated that the project has been registered as a CDM project on 15/05/2012. The project does not participate in the other emissions trading program.

1.12.4: Other Forms of Environmental Credit

Based on the information obtained during the site visit and undertaking letter from the PP /13/, AENOR confirms that the project does not generate any other form of GHG-related environmental credit for GHG emission reductions or removals claimed under the VCS program.

1.13: Additional Information Relevant to the Project

Eligibility Criteria:

The project is not a grouped project, so this clause is not applicable.

Leakage Management:

As per ACM0002 version 12.1.0, no leakage emissions are considered. Hence this clause is not applicable.

Commercially Sensitive Information

It has been confirmed that there is no any commercially sensitive information excluded from the public version of the project description. Hence this clause is not applicable.

Further Information

As reported in the CDM validation report of the project, the CDM validation DOE issued a positive opinion to the project for requesting registration. In addition, the verification team hasn't identified any additional information that may have a bearing on the eligibility of the project, the net GHG emission reductions or removals, or the quantification of the project's net GHG emission reductions or removals.

2.2.2 Methodology Deviations

There is no methodology deviations applied to the project.

2.2.3 Project Description Deviations

There is no project description deviations applied to the project.

2.2.4 New Project Activity Instances

The project is not a grouped project. Hence this section is not applicable.

2.3 Validation Conclusion

Based on the validation process done for the CDM registration and the gap analysis performed, AENOR confirmed that Oaxaca IV Wind Energy Project conforms to the validation criteria for projects as set out in VCS Standard version 3.3.

3 VERIFICATION PROCESS

3.1 Method and Criteria

The verification was performed through means of the following three phases in accordance with the requirements of the registered CDM-PDD, the applied methodology, and the VCS Standard version 3.3 and other relevant VCS requirements.

- I. A desk review of the monitoring report and all support documents.
- II. Follow-up interviews with project stakeholders and site inspection.
- III. The resolution of outstanding issues and the issuance of the verification report and statement.

The verification of the emission reductions has assessed all factors and issues that constitute the basis for emission reductions from the project. These include:

- The emission reduction calculations and the relevant data records.
- The calibration and maintenance records for the monitoring instruments
- The management systems to support the project operation and monitoring.

3.2 Document Review

The VCS monitoring report version 1.0 /14/, the VCS monitoring report version 2.0 /15/ and the emission reduction calculations spreadsheet /16/, were assessed as part of the verification. In addition the

registered CDM-PDD and VCS PD version 1.0 /17/ in particular the baseline estimations and the monitoring plan, and the registered CDM validation report, as well as relevant documents, was reviewed. A detailed documents reviewed are listed in Annex 1 of the report.

3.3 Interviews

Representatives of CFE and CE Oaxaca Cuatro S. de R.L. de C.V, including the operational staff of the plant were interviewed. The main topics of the interviews are summarized below.

Interviewed organization Person/Position	Interview topics
Salvador Castillejos Santiago/ Ixtepec Substation Engineer at CFE Ur Alvarez Baeza/ O&M Manager at CE Oaxaca Cuatro S. de R.L. de C.V. Ariana Cartas Gomez/ Construction Supervisor at CE Oaxaca Cuatro S. de R.L. de C.V. Marcos Antonio Cruz /Electric Substations Manager at CE Oaxaca Cuatro S. de R.L. de C.V. Julián Cruz Castillo /Transmission lines Manager at CE Oaxaca Cuatro S. de R.L. de C.V. Ana Teresa Chávez Uranga //Business development Manager at CE Oaxaca Cuatro S. de R.L. de C.V	• General aspects of the project • Technical equipment and operation • Changes since CDM validation • Monitoring and measurement equipment • Remaining issues from CDM validation • Calibration of meters • Quality management system • Involved personnel and responsibilities • Training and practice of the operational personnel • Implementation of the monitoring plan • Internal data quality control • Estimates and assumptions for determining GHG data • Procedural aspects of the verification • Maintenance • Crosschecking of sales receipts

3.4 Site Inspections

On 23/04/2013, AENOR's verification team carried out an on-site visit. The main tasks covered during the on-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 to the level of the meter recordings

3.5 Resolution of Any Material Discrepancy

On the basis of the document review, the on-site visit, follow-up interviews and further background investigation the verification questionnaire is completed. In case any inconsistencies or lack of clarity were identified during the verification the team has raised:

Corrective Action Requests (CARs) are issued, where:

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

Clarification Requests (CLs) are issued if information is insufficient or not clear enough to determine whether the applicable CDM requirements have been met.

Forward Action Requests (FARs) are issued for actions if the monitoring and reporting require attention and/or adjustment for the next verification period.

The project participants were requested to address all verification findings and finally provided the verification team with sufficient evidence to determine that the applicable CDM/VCS requirements have been met. The project participant modified the initial monitoring report to resolve the verification team concerns and resubmitted a final version. AENOR has prepared this report based on the final monitoring report.

To guarantee the transparency of the verification process, the concerns raised by AENOR are fully documented in a detailed list of all CARs, CLs and FARs (including the responses provided by the PP) in Annex 2 of this report.

4 VERIFICATION FINDINGS

4.1 Project Implementation Status

Project Implementation in accordance with the registered project design document

AENOR verified that the project is fully implemented according to the description in the registered CDM-PDD. The verification team confirmed through visual inspection and document review that all physical features of the CDM project activity including data collection systems and storage systems have been implemented in accordance with the registered CDM-PDD. The project is completely operational which was confirmed by means of the on-site visit. Neither a notification nor approval of change has been requested to the CDM Executive Board.

The emissions reductions reported in this monitoring period are 123,640 tonnes of CO₂e in the period 18 November 2011 to 15 May 2012 (i.e. 180 days). The yearly expected emission reductions in the registered CDM-PDD are 245,015 tonnes of CO₂e which corresponds to the emission reductions of 120,829 tonnes of CO₂e in 180 days, and hence the reported emission reductions are 2.33% higher than expected. This difference is due to the given monitoring period does not correlate with the wind pattern used for the PDD estimates (one year). In opinion of the AENOR verification team, this slight increase is considered reasonable and not significant.

Compliance of the monitoring plan with the monitoring methodology

The verification team reviewed whether the monitoring plan was in accordance with the applied methodology and if any other monitoring aspect of the project activity that is not specified in the methodology was identified.

The verification team confirmed that the monitoring plan of the validated CDM project activity is in accordance with the applied methodology ACM0002 "Consolidated methodology for grid-connected electricity generation from renewable sources" version 12.1.0 on the following reasons:

- During the desk review monitoring parameters included in the applied methodology were compared with the ones included in the monitoring plan of the registered CDM-PDD, and they were found consistent.
- During the verification process no need was identified for a revision of the monitoring plan.
- No other relevant aspects for monitoring not included in the methodology were identified

- No deviations from the monitoring methodology were identified during the verification process.

Compliance of monitoring with the monitoring plan

Monitoring of reductions in GHG emissions has been implemented in accordance with the monitoring plan. The monitoring mechanism is effective and reliable. All applicable parameters stated in the monitoring plan, the applied methodology and relevant CDM/VCS decisions have been sufficiently monitored.

As stated in the methodology ACM0002 Version 12.1.0 and in the PDD, the main monitoring parameter is the following:

EG_{facility, y}: Quantity of Net Electricity (MWh) generated supplied by the project plant to the grid in year y at Ixtepec substation: This data shall be measured continuously and at least recording monthly.

Since this project activity shares the transmission line to Ixtepec substation with another project B (Oaxaca IV) where a main meter and back up meter will be installed for measuring the electricity delivered to the grid for the both projects, the EG_{facility} will be calculated as per the formula:

$$EG_{facility, y} = \left(\frac{EG_{project, y}}{EG_{project, y} + EG_{another, y}} * EG_{output, y} \right) - EG_{import, y}$$

As a consequence, the following parameters are also monitored:

EG_{output, y}: Electricity supplied to the grid by the proposed project and ‘another project B’ during year y. This data will be continuously measured and at least monthly recording with a bidirectional main meter M3 and a M3 back up meter at Ixtepec substation.

EG_{import, y}: Electricity purchased from the grid by the proposed project and ‘another project B’ during year y. This data will be continuously measured and at least monthly recording with a bidirectional main meter M3 and a M3 back up meter at Ixtepec substation.

EG_{project, y}: Electricity generated by the proposed project during year y and measured at the project site Oaxaca IV substation. This data will be continuously measured and at least monthly recording with a bidirectional main meter M2 and a M2 back up meter.

EG_{another, y}: Electricity generated by the another project B during year y and measured at the project site B substation (Oaxaca II substation). This data will be continuously measured and at least monthly recording with a bidirectional main meter M1 and a M1 back up meter.

Based on formula applied and considering that electricity imported by the proposed project activity and the “project B” will be deducted from electricity supplied to the grid, AENOR considers this approach as

conservative. In addition, the PP has taken the minimum value for EG_{output} and $EG_{project}$ resulting from the comparison between main and back up meter and the maximum value for EG_{import} and $EG_{another}$ from the main and back up meter comparison, which is considered conservative, hence accepted by the verification team of AENOR.

Electricity supplied and imported from the grid is measured continuously and recorded monthly. At the end of the month, the Finance Director aggregates and validates the monthly data and registers the energy data in the Monthly production sheets of the meter located in the Monitoring Emissions Folder of the intranet system as stated in the "Monitoring and Verification Manual for CDM/VCS purposes".

The meter readings, presented in section 4.1 of the Monitoring Report version 2.0 have been verified against the original monthly reading records provided by the PP /18/, they were found to be consistent with the original monthly readings of Ixtepec, Oaxaca IV and Oaxaca II meters (main and back up), and no contradictions were found.

The sales receipts /19/ kept by the wind farm have been provided by the PP, verified by the verification team of AENOR, and cross-checked with the meters readings to obtain the same results that PP's calculation. In order to be conservative, the PP crosschecked the monthly readings with the monthly receipts of sales, taking the lower value for ERs calculation.

In addition, during the on site visit, Ixtepec, Oaxaca IV and Oaxaca II bi-directional meters (main and back up) were checked in order to verify if the calibration information (accuracy, frequency, date of calibration, serial number and validity) provided in the Monitoring Report was in compliance with the registered CDM-PDD and the monitoring plan.

PP has provided the certificates from LAMSE (Laboratorio de Metrología) that are consistent with the calibration information included in the latest monitoring report.

In the below table is addressed the calibration information checked by the AENOR verification team:

Meter	Serial number	Accuracy	Calibration Frequency	Calibration History	Certificate
Ixtepec substation (Main)	MT-1011A383-01	$\pm 0.2\%$	1 year	13/10/2011	Certificate issued by LAMSE nº 2011-653 /20/
Ixtepec substation (Back up)	MT-1011A456-01	$\pm 0.2\%$	1 year	13/10/2011	Certificate issued by LAMSE nº 2011-654 /21/

Meter	Serial number	Accuracy	Calibration Frequency	Calibration History	Certificate
Oaxaca IV substation (Main)	MT-1011A462-01	$\pm 0.2\%$	1 year	14/10/2011	Certificate issued by LAMSE nº 2011-659 /22/
Oaxaca IV substation (Back up)	MT-1011A388-01	$\pm 0.2\%$	1 year	14/10/2011	Certificate issued by LAMSE nº 2011-660 /23/
Oaxaca II substation (Main)	MT-1011A453-01	$\pm 0.2\%$	1 year	14/10/2011	Certificate issued by LAMSE nº 2011-657 /24/
Oaxaca II substation (Back up)	MT-1011A560-01	$\pm 0.2\%$	1 year	14/10/2011	Certificate issued by LAMSE nº 2011-658 /25/

In opinion of the AENOR team the calibration information is deemed appropriate and consistent with the monitoring plan and the relevant guidance provided by the CDM Executive Board.

4.2 Accuracy of GHG Emission Reduction or Removal Calculations

Based on the information in the registered CDM-PDD, the baseline emission factor ($EF_{grid,CM,y}$) was ex-ante determined according to version 12.1.0 of the approved methodology ACM0002 and is fixed for the crediting period. The value of baseline emission factor used in the Monitoring Report is 0.5805 tCO₂e/MWh, which is the same as the one in the registered CDM-PDD.

The different data sources mentioned above permit the comparison of the data and the detection of any deviation between them. In the below table are addresses the values reported and verified for VCU calculation.

Parameter	Monitoring Report version 1.0	Monitoring Report version 2.0
$EG_{facility,y}$	212,994 MWh	212,990 MWh
$EF_{grid,CM,y}$	0.5805 tCO ₂ e/MWh,	0.5805 tCO ₂ e/MWh,

Verified values of monthly Net Energy supplied to the grid (MWh)

Period	EG _{output}	EG _{project}	EG _{another}	EG _{import}	EG _{facility} ¹ (A)	Values from sales receipts (B)	Verified Min(A,B)
November 2011 ²	26,573	20,185	6,161	5	6,209	6,225	6,209
December 2011	100,345	55,656	45,080	41	44,864	44,905	44,864
January 2012	84,055	42,308	42,449	95	42,002	42,098	42,002
February 2012	90,245	44,889	46,139	44	45,698	45,743	45,698
March 2012	76,848	37,052	40,588	90	40,084	40,181	40,084
April 2012	49,381	23,230	26,527	188	26,139	26,352	26,139
May 2012 ³	16,181	8,106	8,213	150	7,994	8,151	7,994
Total	443,628	231,426	215,158	613	212,990	213,655	212,990

According to the formulae and procedure defined in the monitoring plan:

The Baseline Emissions (BE_y) is calculated as follows:

$$BE_y = EG_y * EF_y = 212,990 \text{ MWh} * 0.5805 \text{ tCO}_{2e}/\text{MWh} = 123,640 \text{ tCO}_{2e}.$$

The total Emission Reductions (ER_y) is calculated as follows:

$$ER_y = BE_y - PE_y - L_y,$$

¹ Calculated as per the formula: $EG_{facility,y} = \left(\frac{EG_{project,y}}{EG_{project,y} + EG_{another,y}} * EG_{output,y} \right) - EG_{import,y}$

² From 18/11/2011 onwards.

³ Until 15/05/2012 (inclusive).

As per registered CDM-PDD, Project Emissions (PE_y) and Leakage (L_y) are equal to 0,

$$ER_y = BE_y = 123,640 \text{ tCO}_{2e}$$

PP provided the spreadsheet /16/ used for calculating the GHG emission reductions. AENOR has reproduced all these calculations to obtain the same results, hence, they are deemed appropriate and consistent with the evidence provided and cross-checked by AENOR. Furthermore, appropriate methods and formulae for calculating baseline emissions, project emissions and leakage have been followed, and assumptions and emission factor correctly applied and justified.

4.3 Quality of Evidence to Determine GHG Emission Reductions or Removals

AENOR was able to confirm that the calculations are based on authentic data from CFE, on the monthly systematic monitoring of the electricity supplied by the project and sales receipts. The spreadsheets used to calculate the VCUs calculations and all figures were tracked, checked and found to be consistent. The monitoring information is stored as per the “Monitoring and Verification Manual for CDM/VCS purposes” /26/.

The verification team can confirm that sufficient evidence is available for the whole monitoring period and the same is verifiable and that the data collection system meets the requirements of the monitoring plan and the applied methodology according to the assessment carried out on site and in the document review.

4.4 Management and Operational System

During the on-site visit, the verification team performed an identification of quality control and quality assurance procedures to prevent or identify and correct any errors or omissions in the reported monitoring parameters, and verified the level of implementation of the management system and quality assurance required by the monitoring plan.

During the on-site visit, the audit team was able to verify that monitoring systems and all applied procedures are in compliance with the monitoring plan and the approved methodology. The different QA/QC procedures established in the monitoring plan are applied.

AENOR confirmed that the management system and quality assurance procedures have been implemented during operation through the “Monitoring and Verification Manual for CDM/VCS purposes”. Emergency plan is in place and the responsibilities are properly identified.

Therefore AENOR can confirm that the management system and quality assurance procedures are stipulated in the “Monitoring and Verification Manual for CDM/VCS purposes” and have been implemented during operation. This has been verified during the on-site visit and document review.

5 VERIFICATION CONCLUSION

AENOR has performed the verification of the emission reductions that have been reported for the “Oaxaca IV Wind Energy Project” (CDM Registration No. 6216) for the period 18 November 2011 to 15 May 2012.

In addition, AENOR has also carried out a validation of the project with regard to VCS requirements that apply to projects already registered under the CDM. AENOR was able to confirm that the project is in compliance with the VCS requirements for validation of projects already registered under the CDM.

Verification is performed in accordance with the relevant requirements for VCS and CDM rules.

AENOR conducted the verification on the basis of the approved methodology ACM0002 version 12.1.0, the monitoring plan contained in the registered CDM-PDD and the final monitoring report version 2.0. The verification included i) checking whether the provisions of the monitoring methodology and the monitoring plan were consistently and appropriately applied and ii) the collection of evidence supporting the reported data.

Based on an understanding of the risks associated with reporting GHG emissions data and the controls in place to mitigate these risks, AENOR planned and performed our work to obtain the information and explanations that we considered necessary to provide sufficient evidence for us to give reasonable assurance that the reported amount of GHG emission reductions for the period is fairly stated.

It is AENOR’s responsibility to express an independent GHG verification opinion on the GHG emissions and on the calculation of GHG emission reductions from the project for the period 18/11/2011 to 15/05/2012 based on the reported emissions reductions in the Monitoring Report for the same period.

In our opinion the GHG emissions reductions of the “Oaxaca IV Wind Energy Project” for the period 18 November 2011 to 15 May 2012 are fairly stated in the final monitoring report.

The GHG emission reductions were calculated correctly on the basis of the approved methodology ACM0002 version 12.1.0 and the monitoring plan contained in the registered CDM-PDD.

AENOR is able to certify that the emission reductions from the “Oaxaca IV Wind Energy Project” during the period 18 November 2011 to 15 May 2012 amount to 123,640 tonnes of CO₂ equivalent, detailed as below.

Reporting period: From [18-11-2011] to [15-05-2012]

Verified GHG emission reductions or removals in the above reporting period:

GHG Emission Reductions or Removals	tCO ₂ e
Baseline Emissions	123,640
Project Emissions	0
Leakage	0
Net GHG emission reductions or removals	123,640

ANNEX 1: REFERENCE LIST

- /1/ CDM-PDD registered dated 23/12/2011
- /2/ VCS Standard: version 3.3 issued 4 October 2012
- /3/ Clean Development Mechanism Validation and Verification Standard version 03.0
- /4/ VCS-PD version 2.0 dated 14/05/2012
- /5/ VCS-PD template version 3.1 issued 4 October 2012
- /6/ CDM Validation Report version 2 dated 12/03/2012
- /7/ Commissioning Report sent to CFE for Oaxaca IV Wind Energy Project dated 22/11/2011
- /8/ VCS Registration and Issuance Process version 3.4 issued 4 October 2012
- /9/ CFE resolution for the award of contract dated 08/03/2010
- /10/ PPA with CFE dated 08/04/2010
- /11/ Letter of Approval from the Mexican DNA dated 12/11/2010
- /12/ Environmental Impact Manifest approval by SETENA dated 21/09/2010
- /13/ Undertaking letter with subject of GHG related Environmental Credits for Oaxaca IV Wind Energy Project, dated 06/05/2013
- /14/ Monitoring Report version 1.0 dated 07/02/2013
- /15/ Monitoring Report version 2.0 dated 14/05/2013
- /16/ Emission Reduction Calculation Spreadsheet
- /17/ VCS-PD version 1.0 dated 07/02/2013

- /18/ Monthly Reading Records of Oaxaca IV meter covering from 18/11/2011 to 15/05/2012
- /19/ Sales receipts for net electricity supplied to the grid, issued by CFE to wind farm, covering from 18/11/2011 to 15/05/2012
- /20/ Calibration Certificate Ixtepec substation main meter dated 13/10/2011
- /21/ Calibration Certificate Ixtepec substation back up meter dated 13/10/2011
- /22/ Calibration Certificate Oaxaca IV substation main meter dated 14/10/2011
- /23/ Calibration Certificate Oaxaca IV substation back up meter dated 14/10/2011
- /24/ Calibration Certificate Oaxaca II substation main meter dated 14/10/2011
- /25/ Calibration Certificate Oaxaca II substation back up meter dated 14/10/2011
- /26/ Monitoring and Verification Manual for CDM/VCS purposes

ANNEX 2: VCS VERIFICATION PROTOCOL

VCS VERIFICATION PROTOCOL

PROJECT: "Oaxaca IV Wind Energy Project"

MONITORING AND REPORTING PERIOD:

FROM 18/11/2011 to 15/05/2012

Verification Team:

Marcelino Pellitero – Chief Verifier.

Raquel del Castillo – Verifier in trainee

Version of this Verification Protocol: 2

Date: 24/05/2013

Checklist Question	Ref	Comments	Draft conclusion	Final conclusion
1. Gap Validation				
Does the used project title clearly enable to identify the unique VCS activity? Is it consistent in all section of the VCS PD and in all documents?	1.1.	The project title is Oaxaca IV Wind Energy Project which clearly identifies the project activity. CAR 1.- The PP shall use the latest VCS PD template version available The final version of the VCS PD has been updated to template version 3.1 CAR 1 is closed.	CAR 1	OK
Are there any indication concerning the revision number and the date of the revision?	1.2	Yes, the VCS PD is dated on 14 May 2013 and refers to version 2.0.	OK	OK
Is this consistent with the time line of the project's history?	1.3	Yes, it is consistent.	OK	OK
Has the PD been listed on the project pipeline?	1.4	Yes, the project has been listed on the project pipeline before the opening meeting between the validation/verification body and the project proponent.	OK	OK
Are the sectoral scope and the project type clearly stated?	1.5	Yes, the sectoral scope 1 "Energy Industries (renewable/non-renewable sources)" is clearly indicated in section 1.2 of the VCS PD.	OK	OK
Is the information required for the indication of project proponent correctly presented?	1.6	Yes, there is only one project proponent "CE Oaxaca Cuatro S de RL de CV" and this is correctly indicated.	OK	OK
Are there other entities other than the project proponent involve in the project?	1.7.	Not applicable.	N/A	N/A

Checklist Question	Ref	Comments	Draft conclusion	Final conclusion
Is all information on proponent / Parties provided in consistency with details provided by further chapters of the VCS PD?	1.8.	Yes, the information of CE Oaxaca Cuatro S de RL de CV is consistent in the entire VCS PD.	OK	OK
Is the project's starting date clearly defined and reasonable?	1.9	CAR 2.- The starting date and the crediting period of the project shall be consistent in the VCS PD and the Monitoring Report. Yes, the starting date of the project activity is established on 18 November 2011, which is the commissioning date of the firsts wind turbine generators. CAR 2 is closed CL 1.- Evidence of the selected starting date shall be provided to the VVB. Appropriate and reliable evidence has been provided. CL 1 is closed. Yes, the project's starting date clearly defined and reasonable.	CAR 2 CL 1	OK
Is the assumed crediting time clearly defined and reasonable (renewable crediting period of max 10 years with potential for 2 renewals?)	1.10	Yes, the crediting time of 10 years has been clearly stated in section 1.6 of the VCS	CAR 2	OK
Is the proposed project a large-project (ERs greater than 300,000 tCO ₂ e/year) or a project (ERs less or equal than 300,000 tCO ₂ e/year)?	1.11	The estimated emission reductions are less than 300,000 tCO ₂ e/year; therefore, the project is not categorized as large.	OK	OK

Checklist Question	Ref	Comments	Draft conclusion	Final conclusion
Is the form required for the indication of projected emission reductions correctly applied?	1.12	Yes, the form for the indication of projected ERs is correct.	OK	OK
Does the information provided on the location of the project activity allow for a clear identification of the site(s)?	1.13.	Maps of the location of the project activity have been included in section 1.9 of the VCS PD. The maps indicate the location of the project activity. "Oaxaca IV Wind Energy Project" project activity is located in the municipality of La Venta, Oaxaca State, Mexico. The Validation/verification Body verified the coordinates against the information obtained during the on-site visit.	OK	OK
Describe the conditions prior to the project initiation. Explain why the project has not been implemented only with the purpose to generate ERs.	1.14	The project activity consists of 68 wind turbines with a total installed capacity of 102 MW generating power to offset the combustion of thousands of tonnes of fossil fuels and, in doing so, will help preserve non-renewable resources by promoting the exploitation and use of renewable resources and technologies. Therefore, the proposed project activity is primarily implemented for power generation, and not with the purpose to create GHG emissions and their subsequent reduction, removal or destruction. The audit team confirmed this information during the onsite visit through meetings carried out.	OK	OK
Compliance with laws, statutes and other regulatory frameworks	1.15	The E.I.A approval has been provided to the audit team, as well as further information regarding other laws, permits, or authorizations such as: - Generation Permit - Fulfilment with the Municipality legal framework. - Construction permit	OK	OK
Right of use?	1.16	The award contract with CFE, the Letter of Approval from the Mexican DNA and	OK	OK

Checklist Question	Ref	Comments	Draft conclusion	Final conclusion
		the EIA approval were checked and deemed to be sufficient evidence of ownership of the plant as well as right of use arising by virtue of a contractual right in the plant that generates GHG emission reductions.		
Will the generated ERs be used for compliance with an emissions trading program, or to meet the binding limits on GHG emissions?	1.17	The project is not included in an emissions trading program except being registered as CDM project, and does not take place in a jurisdiction or sector in which binding limits are established on GHG emissions.	OK	OK
Is the project registered under any other GHG-program? Are the registration number and details clearly stated in VCS PD?	1.18	The proposed project activity has been registered under CDM programs of Kyoto Protocol. The registration number is 6216. There is no other form of GHG-related environmental credit generated by the proposed project activity.	OK	OK
Does the project intend to generate any other form of GHG-related environmental credit? (e.g. renewable energy certificates)	1.19	CL 2.- The PP is requested to clarify how it can be confirmed that the project has not created another form of GHG-related environmental credit other than that under the CDM. Appropriate and reliable evidence has been provided. CL 2 is closed. By means of the undertaking letter from the PP it is demonstrated that the project does not intend to generate any other form of GHG-related environmental credit	CL 2	OK
Has the proposed project been rejected by any other GHG program?	1.20.	N/A. The proposed project has not been rejected by any other program.	N/A	N/A
In case of grouped projects, are	1.21	N/A. The proposed project is not part of any other grouped project.	N/A	N/A

Checklist Question	Ref	Comments	Draft conclusion	Final conclusion
there clear eligibility criteria for potential new participants (VCS term: Project Instances)?				
Is the leakage management properly described?	1.22	N/A, no leakage in the project activity.	N/A	N/A
Has commercially sensitive information been excluded from the VCS PD? Explain to which items this information refers to.	1.23	No commercially sensitive information has been excluded from the VCS PD.	OK	OK
Is there any further information available regarding the project?	1.24	All information in the project documents is available for the public review, as claimed by PP in the VCS Project Description.	OK	OK
2. Project history				
Open issues from validation Check (in case of 1st periodic verification) whether there are any open issues indicated in the CDM validation report (e.g. FAR) Have they been addressed appropriately?	2.1.	All corrective actions and clarifications indicated in the validation report were closed. Validation report does not indicate the existence of open issues.	OK	OK
Open issues from previous verification Check (in case of further periodic verifications) whether there are any open issues	2.2.	N/A. This is the first periodic verification.	N/A	N/A

Checklist Question	Ref	Comments	Draft conclusion	Final conclusion
indicated in previous verification (FAR) Have they been addressed appropriately?				
Requests for Deviations/Revisions of Monitoring Plan Check if there have been any requests for deviations from the monitoring methodology or requests for revisions of the monitoring plan. If any, make sure that they are considered during verification	2.3.	N/A. There have not been any requests for deviations from the monitoring methodology or requests for revisions of the monitoring plan.	N/A	N/A
3. Project implementation in accordance with the CDM registered project document and the VCS project description				
Has the VCS project activity been implemented as per the registered CDM-PDD and VCS-PD?	3.1.	The project activity is registered under the Clean Development Mechanism of the UNFCCC; and the actual implementation and operation of the project activity is in accordance with the registered CDM-PDD.	OK	OK
Are all physical features of the VCS project activity proposed in the PD, in place?	3.2.	Yes, all the physical features are in place.	OK	OK
Have the project participants operated the VCS project activity as per the CDM-PDD and the VCS-PD?	3.3.	Yes, project participants have operated the project as per registered CDM-PDD and the VCS-PD.	OK	OK

Checklist Question	Ref	Comments	Draft conclusion	Final conclusion
Actual status of installation works Project installation should be finished at time of initial verification in so far as the project should be ready to generate emission reductions afterwards. It shall be clearly described the starting date of operation and the progress of the project activity. Is the implementation delayed? What were the reasons for the delay?	3.4.	The project installation was finished at the time of initial verification. Situations regarding the actual operation of the project activity during the monitoring period and situations which may impact the applicability of the methodology and their resolution have been addressed in the monitoring report.	OK	OK
Project boundaries Check whether the project boundaries are still in compliance with the ones indicated by the PD.	3.5.	Yes. The project boundaries are in compliance with those indicated in the VCS PD and registered CDM-PDD.	OK	OK
On-site visit Was an on-site visit conducted? If not, justify the rationale of the decision.	3.6.	The on site visit was conducted on 23 April 2013.	OK	OK
4. Update on Changes and Incidents (during the Monitoring Period)				

Checklist Question	Ref	Comments	Draft conclusion	Final conclusion
Incidents Identify if there have been any significant incidents, deviant operation modes and/or downtimes of the equipment? Consider e.g. interviews with operational personnel, operational log sheets and analysis of performance data.	4.1.	Not significant incidents, deviant operation modes and/or downtimes of the equipment have been identified during the proposed crediting period. This has been verified by means of interviews during the on site visit and the analysis of the performance data.	OK	OK
Is the information (data and variables) provided in the monitoring report different from that stated in the PD? Has it caused an increase in estimates of the emission reductions in the current monitoring period or is highly likely to increase the estimates of emission reductions in the future monitoring periods?	4.2.	No. All data and variables provided in the Monitoring Report are consistent with the PD.	OK	OK
Personnel Find out, if relevant monitoring personnel have been exchanged? In case of changes, assure that the implemented monitoring	4.3.	No relevant monitoring personnel have been exchanged as verified during on site visit.	OK	OK

Checklist Question	Ref	Comments	Draft conclusion	Final conclusion
procedures have not been affected.				
Legislation Find out whether relevant legislation with effect on the project activity in the host country has been changed.	4.4.	No relevant legislation affecting the project activity has changed in the host country.	OK	OK
5. Monitoring Report – General				
Is the monitoring report (and other supporting documents) provided complete in accordance with latest applicable version of the VCS Program Guide?	5.1.	Yes, provided monitoring report and supporting documents are complete.	OK	OK
Is the VCS Monitoring Report Form used by the Project Participants in the monitoring report?	5.2.	CAR 3.- The PP shall use the latest VCS Monitoring Report template version available. The final version of the VCS PD has been updated to template version 3.2 CAR 3 is closed.	CAR 3	OK
Monitoring period Check if the monitoring period is in line with a) the crediting period and/or b) previous monitoring periods?	5.3	Yes, the monitoring period is in line with the crediting period. This is the 1 st periodic verification.	CAR 2	OK

Checklist Question	Ref	Comments	Draft conclusion	Final conclusion
Transparency Assess if the monitoring report is transparent, i.e. clear and unequivocal	5.4.	Yes, the monitoring report is clear and unequivocal.	OK	OK
Misstatements on general issues Assess whether the monitoring report is free of material misstatements regarding issues other than the monitoring parameters. Discuss the monitoring parameters in detail in chapter "Monitoring Parameters".	5.5.	The monitoring is free of material misstatements regarding issues other than the monitoring parameters.	OK	OK
6. Compliance of the monitoring plan with the monitoring methodology.				
Is the validated monitoring plan of the proposed VCS project activity in accordance with the applied methodology?	6.1.	Yes. It has been assessed whether the monitoring plan is in accordance with the applicable methodology. The methodology used for the project activity is ACM0002 "Consolidated baseline methodology for Grid Connected Electricity Generation from Renewable Sources", version 12.1.0, (which is available at UNFCCC website). The same is consistent with PDD registered under the Clean Development Mechanism of the UNFCCC.	OK	OK

Checklist Question	Ref	Comments	Draft conclusion	Final conclusion
Are there any monitoring aspects of the project activity that are not specified in the methodology, particularly in the case of small-scale methodologies (e.g. additional monitoring parameters, monitoring frequency and calibration frequency)?	6.2.	No, all the monitoring aspects are specified in the methodology.	OK	OK
7. Compliance of monitoring with the monitoring plan				
Is the monitoring of reductions in GHG emissions to result from the proposed VCS project activity implemented in accordance with the monitoring plan contained in the PD or the accepted revised monitoring plan?	7.1.	Yes, monitoring of reductions in GHG emissions is implemented in accordance with the monitoring plan.	OK	OK
Have the monitoring plan and the applied methodology been properly implemented and followed by the project participants?	7.2.	Yes, both have been properly implemented.	OK	OK
Have all parameters stated in the monitoring plan, the applied methodology and relevant CDM	7.3.	Yes, all parameters stated in the monitoring plan, the applied methodology has been sufficiently monitored and updated as applicable.	OK	OK

Checklist Question	Ref	Comments	Draft conclusion	Final conclusion
Executive Board decisions been sufficiently monitored and updated as applicable (Project emission, baseline emission, leakage, management and operational system and environmental and social parameters)		All baseline emission parameters have been monitored. According to the methodology ACM0002 version 12.1.0 and the validated PD, no leakage needs to be considered.		
Are the responsibilities and authorities for monitoring and reporting in accordance with the responsibilities and authorities stated in the monitoring plan?	7.4.	Yes, responsibilities and authorities for monitoring and reporting are in accordance with the responsibilities and authorities stated in the monitoring plan.	OK	OK
8. Monitoring Parameters				
8.1. $EG_{facility,y}$	8.1.	“Net electricity supply to the grid by the project in year y”		
Measurement / Determination method Describe how the monitoring parameter was measured / determined. Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination	8.1.1.	Net electricity supplied by the project activity to the grid. Electricity generation is measured continuously and recorded monthly and double checked by receipt of sales. The net electricity generation is measured in the meter installed at the delivery point of energy. This project activity shares the transmission line with another project; for this reason the meter in the substation uses a software that calculates the net electricity exported to the grid by the project activity: $EG_{facility,y} = \left(\frac{EG_{project,y}}{EG_{project,y} + EG_{another,y}} * EG_{output,y} \right) - EG_{import,y}$	OK	OK

Checklist Question	Ref	Comments	Draft conclusion	Final conclusion
methods have been used. Assess whether the measurement or determination method (data generation, frequency, aggregation, equipment, recording, reporting, standards) is in line with the registered monitoring plan of the PD and the applied methodology.		$EG_{output,y}$ $EG_{import,y}$ $EG_{project,y}$ and $EG_{another,y}$ are measured directly by electricity meters. The measurement or determination method (data generation, frequency, aggregation, equipment, recording, reporting, and standards) is in line with the registered monitoring plan of the PDD and the applied methodology.		
Monitoring Equipment Is the equipment of used for monitoring (quality, type, accuracy, calibration requirements) in accordance with the relevant guidance provided by the CDM Executive Board and is equipment controlled and calibrated in accordance with the monitoring plan?	8.1.2.	Oaxaca IV Wind Farm has two meters (the main and the backup) at the exit of the wind farm and two meters (the main and the backup) in Ixtepec Substation. The project activity shares the transmission line to Ixtepec Substation with another wind project. The energy production from the project activity is by means of CFE certified meters located in the Ixtepec Substation. According to the monitoring plan the meters are calibrated every year and have 0.2% accuracy class Monitoring equipment is controlled and calibrated in accordance with the monitoring plan. Calibration certificates of the meters have been provided to the verification team.	OK	OK
Accuracy In case of measured (or estimated) values, check whether significant inaccuracies occur; in this case, make sure that appropriate discounts have	8.1.3.	Inaccuracies were not detected.	OK	OK

Checklist Question	Ref	Comments	Draft conclusion	Final conclusion
been considered for ER calculation.				
Monitoring results Are monitoring results consistently recorded as per approved frequency?	8.1.4.	Yes, monitoring results were recorded as per approved frequency.	OK	OK
Quality assurance and quality control procedures Have quality assurance and quality control procedures been applied in accordance with the monitoring plan to prevent or identify and correct any errors or omissions in the reported monitoring parameters?	8.1.5.	Yes, quality assurance and quality control procedures have been applied in accordance with the monitoring plan.	OK	OK
Verification Describe how the value and the information flow (from data generation, aggregation, to recording, calculation and reporting) were verified. Consider the measurement / determination procedure, accuracies, QA/QC procedure, source and nature of the evidences.	8.1.6.	CAR 4.- Values of $EG_{output,y}$, $EG_{import,y}$, $EG_{project,y}$ and $EG_{another,y}$ in the spreadsheet and the MR are not correct, since they cover the period from 1 November 2011 to 15 May 2012. The values of monitored parameters $EG_{output,y}$, $EG_{import,y}$, $EG_{project,y}$ and $EG_{another,y}$ in the spreadsheet and the MR are now correct since they cover the proposed monitoring period from 18 November 2011 to 15 May 2012. CAR 4 is closed. The consistency of the meter reading is checked by the Exploitation Director and crosschecked with the receipt of sales. The verification team considers this data correct.	CAR 4	OK

Checklist Question	Ref	Comments	Draft conclusion	Final conclusion
Consider as well plausibility checks as far as possible. Check if the applied value could be backed up by corresponding evidences covering the full monitoring period.				
8.2. EG_{output,y}	8.2.	“Electricity supplied to the grid by the proposed project and “another project B” during year y” in year y”		
Measurement / Determination method Describe how the monitoring parameter was measured / determined. Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Assess whether the measurement or determination method (data generation, frequency, aggregation, equipment, recording, reporting, standards) is in line with the registered monitoring plan of the PD and the applied	8.2.1.	Electricity generation supplied by the project activity and the project B to the grid is measured continuously and recorded monthly. The measurement or determination method (data generation, frequency, aggregation, equipment, recording, reporting, and standards) is in line with the registered monitoring plan of the PDD and the applied methodology.	OK	OK

Checklist Question	Ref	Comments	Draft conclusion	Final conclusion
methodology.				
Monitoring Equipment Is the equipment of used for monitoring (quality, type, accuracy, calibration requirements) in accordance with the relevant guidance provided by the CDM Executive Board and is equipment controlled and calibrated in accordance with the monitoring plan?	8.2.2.	This parameter is measured by M3 main meter or M3 backup meter installed in the Ixtepec substation. The main meter has the identification code MT-1011A383-01 and the backup meter the identification code MT-1011A456-01. The verification team checked the identification code during the on site visit. According to the monitoring plan the meters are calibrated every year and have 0.2% accuracy class Monitoring equipment is controlled and calibrated in accordance with the monitoring plan. Calibration certificates of the meters have been provided to the verification team.	OK	OK
Accuracy In case of measured (or estimated) values, check whether significant inaccuracies occur; in this case, make sure that appropriate discounts have been considered for ER calculation.	8.2.3.	Inaccuracies were not detected.	OK	OK
Monitoring results Are monitoring results consistently recorded as per approved frequency?	8.2.4.	Yes, monitoring results were recorded as per approved frequency.	OK	OK
Quality assurance and quality	8.2.5.	Yes, quality assurance and quality control procedures have been applied in	OK	OK

Checklist Question	Ref	Comments	Draft conclusion	Final conclusion
control procedures Have quality assurance and quality control procedures been applied in accordance with the monitoring plan to prevent or identify and correct any errors or omissions in the reported monitoring parameters?		accordance with the monitoring plan.		
Verification Describe how the value and the information flow (from data generation, aggregation, to recording, calculation and reporting) were verified. Consider the measurement / determination procedure, accuracies, QA/QC procedure, source and nature of the evidences. Consider as well plausibility checks as far as possible. Check if the applied value could be backed up by corresponding evidences covering the full monitoring period.	8.2.6.	Value of monitored parameter $EG_{output,y}$ in the MR is consistent with the value provided in the ER calculation spreadsheet. The Finance Director aggregates and validates the monthly data and registers the energy data in the Monthly production sheets of the meter located in the Monitoring Emissions Folder of the intranet system as stated in the "Monitoring and Verification Manual for CDM/VCS purposes". The verification team considers this data correct.	CAR 4	OK
8.3. $EG_{import,y}$	8.3.	"Electricity purchased from the grid by the proposed project and "another project B" during year y"		

Checklist Question	Ref	Comments	Draft conclusion	Final conclusion
Measurement / Determination method Describe how the monitoring parameter was measured / determined. Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Assess whether the measurement or determination method (data generation, frequency, aggregation, equipment, recording, reporting, standards) is in line with the registered monitoring plan of the PD and the applied methodology.	8.3.1.	Electricity purchased from the grid by the proposed project and the project B is measured continuously and recorded monthly. The measurement or determination method (data generation, frequency, aggregation, equipment, recording, reporting, and standards) is in line with the registered monitoring plan of the PDD and the applied methodology.	OK	OK
Monitoring Equipment Is the equipment of used for monitoring (quality, type, accuracy, calibration requirements) in accordance with the relevant guidance provided by the CDM Executive	8.3.2.	This parameter is measured by M3 main meter or M3 backup meter installed in the Ixtepec substation. The main meter has the identification code MT-1011A383-01 and the backup meter the identification code MT-1011A456-01. The verification team checked the identification code during the on site visit. According to the monitoring plan the meters are calibrated every year and have 0.2% accuracy class Monitoring equipment is controlled and calibrated in accordance with the	OK	OK

Checklist Question	Ref	Comments	Draft conclusion	Final conclusion
Board and is equipment controlled and calibrated in accordance with the monitoring plan?		monitoring plan. Calibration certificates of the meters have been provided to the verification team.		
Accuracy In case of measured (or estimated) values, check whether significant inaccuracies occur; in this case, make sure that appropriate discounts have been considered for ER calculation.	8.3.3.	Inaccuracies were not detected.	OK	OK
Monitoring results Are monitoring results consistently recorded as per approved frequency?	8.3.4.	Yes, monitoring results were recorded as per approved frequency.	OK	OK
Quality assurance and quality control procedures Have quality assurance and quality control procedures been applied in accordance with the monitoring plan to prevent or identify and correct any errors or omissions in the reported monitoring parameters?	8.3.5.	Yes, quality assurance and quality control procedures have been applied in accordance with the monitoring plan.	OK	OK

Checklist Question	Ref	Comments	Draft conclusion	Final conclusion
Verification Describe how the value and the information flow (from data generation, aggregation, to recording, calculation and reporting) were verified. Consider the measurement / determination procedure, accuracies, QA/QC procedure, source and nature of the evidences. Consider as well plausibility checks as far as possible. Check if the applied value could be backed up by corresponding evidences covering the full monitoring period.	8.3.6.	Value of monitored parameter $EG_{import,y}$ in the MR is consistent with the value provided in the ER calculation spreadsheet. The Finance Director aggregates and validates the monthly data and registers the energy data in the Monthly production sheets of the meter located in the Monitoring Emissions Folder of the intranet system as stated in the "Monitoring and Verification Manual for CDM/VCS purposes". The verification team considers this data correct.	CAR 4	OK
8.4. $EG_{project,y}$	8.4.	"Electricity measured by meters installed at the project site Oaxaca II substation"		
Measurement / Determination method Describe how the monitoring parameter was measured / determined. Check if relevant equipment has been exchanged and if in	8.4.1.	Electricity generation is measured continuously and recorded monthly and cross-checked with records for sold electricity. The measurement or determination method (data generation, frequency, aggregation, equipment, recording, reporting, and standards) is in line with the registered monitoring plan of the PDD and the applied methodology.	OK	OK

Checklist Question	Ref	Comments	Draft conclusion	Final conclusion
cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Assess whether the measurement or determination method (data generation, frequency, aggregation, equipment, recording, reporting, standards) is in line with the registered monitoring plan of the PD and the applied methodology.				
Monitoring Equipment Is the equipment of used for monitoring (quality, type, accuracy, calibration requirements) in accordance with the relevant guidance provided by the CDM Executive Board and is equipment controlled and calibrated in accordance with the monitoring plan?	8.4.2.	This parameter is measured by power meter M2 main meter or M2 backup meter installed at the project site Oaxaca IV substation. CAR 5.- The verification team noted during site visit that the serial number of the main meter does not match with that appearing in monitoring report and the Monitoring and Verification Manual for CDM/VCS purposes. There was a typo in the label appearing in the meter and PP provided evidence that the correct serial number of the meters as stated in the calibration certificates are: MT-1011A453-01 for the main meter and MT-1011A560-01 for the backup meter. CAR 5 is closed. According to the monitoring plan the meters are calibrated every year and have 0.2% accuracy class Monitoring equipment is controlled and calibrated in accordance with the monitoring plan. Calibration certificates of the meters have been provided to the	CAR 5	OK

Checklist Question	Ref	Comments	Draft conclusion	Final conclusion
		verification team.		
Accuracy In case of measured (or estimated) values, check whether significant inaccuracies occur; in this case, make sure that appropriate discounts have been considered for ER calculation.	8.4.3.	Inaccuracies were not detected.	OK	OK
Monitoring results Are monitoring results consistently recorded as per approved frequency?	8.4.4.	Yes, monitoring results were recorded as per approved frequency.	OK	OK
Quality assurance and quality control procedures Have quality assurance and quality control procedures been applied in accordance with the monitoring plan to prevent or identify and correct any errors or omissions in the reported monitoring parameters?	8.4.5.	Yes, quality assurance and quality control procedures have been applied in accordance with the monitoring plan.	OK	OK
Verification Describe how the value and the information flow (from data	8.4.6.	Value of monitored parameter $EG_{project,y}$ in the MR is consistent with the value provided in the ER calculation spreadsheet. The Finance Director aggregates and validates the monthly data and registers the	CAR 4	OK

Checklist Question	Ref	Comments	Draft conclusion	Final conclusion
generation, aggregation, to recording, calculation and reporting) were verified. Consider the measurement / determination procedure, accuracies, QA/QC procedure, source and nature of the evidences. Consider as well plausibility checks as far as possible. Check if the applied value could be backed up by corresponding evidences covering the full monitoring period.		energy data in the Monthly production sheets of the meter located in the Monitoring Emissions Folder of the intranet system as stated in the “Monitoring and Verification Manual for CDM/VCS purposes”. The verification team considers this data correct.		
8.5. EG_{another,y}	8.5.	“Electricity measured by meters installed at “another project B” (Oaxaca II) project site substation”		
Measurement / Determination method Describe how the monitoring parameter was measured / determined. Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used.	8.5.1.	Electricity generation is measured continuously and recorded monthly and cross-checked with records for sold electricity. The measurement or determination method (data generation, frequency, aggregation, equipment, recording, reporting, and standards) is in line with the registered monitoring plan of the PDD and the applied methodology.	OK	OK

Checklist Question	Ref	Comments	Draft conclusion	Final conclusion
Assess whether the measurement or determination method (data generation, frequency, aggregation, equipment, recording, reporting, standards) is in line with the registered monitoring plan of the PD and the applied methodology.				
Monitoring Equipment Is the equipment of used for monitoring (quality, type, accuracy, calibration requirements) in accordance with the relevant guidance provided by the CDM Executive Board and is equipment controlled and calibrated in accordance with the monitoring plan?	8.5.2.	This parameter is measured by power meter M1 main meter or M1 backup meter installed at “another project B” project site substation (Oaxaca II). The main meter has the identification code MT-1011A453-01 and the backup meter the identification code MT-1011A560-01. The verification team checked the identification code during the on site visit. According to the monitoring plan the meters are calibrated every year and have 0.2% accuracy class Monitoring equipment is controlled and calibrated in accordance with the monitoring plan. Calibration certificates of the meters have been provided to the verification team.	OK	OK
Accuracy In case of measured (or estimated) values, check whether significant inaccuracies occur; in this case, make sure that appropriate discounts have been considered for ER	8.5.3.	Inaccuracies were not detected.	OK	OK

Checklist Question	Ref	Comments	Draft conclusion	Final conclusion
calculation.				
Monitoring results Are monitoring results consistently recorded as per approved frequency?	8.5.4.	Yes, monitoring results were recorded as per approved frequency.	OK	OK
Quality assurance and quality control procedures Have quality assurance and quality control procedures been applied in accordance with the monitoring plan to prevent or identify and correct any errors or omissions in the reported monitoring parameters?	8.5.5.	Yes, quality assurance and quality control procedures have been applied in accordance with the monitoring plan.	OK	OK
Verification Describe how the value and the information flow (from data generation, aggregation, to recording, calculation and reporting) were verified. Consider the measurement / determination procedure, accuracies, QA/QC procedure, source and nature of the evidences. Consider as well plausibility	8.5.6.	Value of monitored parameter $EG_{another,y}$ in the MR is consistent with the value provided in the ER calculation spreadsheet. The Finance Director aggregates and validates the monthly data and registers the energy data in the Monthly production sheets of the meter located in the Monitoring Emissions Folder of the intranet system as stated in the "Monitoring and Verification Manual for CDM/VCS purposes". The verification team considers this data correct.	CAR 4	OK

Checklist Question	Ref	Comments	Draft conclusion	Final conclusion
checks as far as possible. Check if the applied value could be backed up by corresponding evidences covering the full monitoring period.				
9. Compliance with the calibration frequency requirements for measuring instruments				
Has the calibration been delayed and the calibration has been implemented after the monitoring period in consideration (results of delayed calibration are available)? If so, which conservative approach has been adopted: a) Applying the maximum permissible error of the instrument to the measured values taken during the period between the schedule date of calibration and the actual date of calibration, if the results of the delayed calibration do not show any error, or if the error is smaller than maximum permissible error, or	9.1	The calibration of the equipments have not been delayed, therefore this section it is not applicable.	N/A	N/A

Checklist Question	Ref	Comments	Draft conclusion	Final conclusion
b) Applying the error identified in the delayed calibration test, if the error is beyond the maximum permissible error.				
Has the error been applied: a) In a conservative manner, such that the adjusted measured values of the delayed calibration has result in fewer claimed emission reductions?, and b) For all measures taken during the period between the scheduled date of calibration and the actual date of calibration.	9.2	The calibration of the equipments have not been delayed, therefore this section it is not applicable.	N/A	N/A
If the results of the delayed calibration are not available, or the calibration has not been conducted at the time of the verification; has been request to the project participants to conduct the required calibration? If so, has the project participants calculated the emission reductions conservatively?	9.3	The calibration of the equipments have not been delayed, therefore this section it is not applicable.	N/A	N/A

Checklist Question	Ref	Comments	Draft conclusion	Final conclusion
If it is not possible for the project participant to conduct the calibration at a frequency specified by either the applied methodology, guidance provided by the Board, and/or registered monitoring plan due to reasons beyond the control of project participants; has been followed the requirements for post registration changes in accordance with CDM VVS?	9.4	The calibration of the equipments have not been delayed, therefore this section it is not applicable.	N/A	N/A
If calibration frequency for measuring equipments are not specified neither the monitoring methodology nor the monitoring plan; has the equipments been calibrated in accordance with specifications of the local/national standards, or as manufacturer's specification, or international standards?	9.5	The calibration frequency of the electricity meters it is in accordance with the national standard.	OK	OK
10. Assessment of data and calculation of greenhouse gas emission reductions				
It is assessed if GHG emission reductions achieved by the proposed VCS project activity are calculated applying the	10.1.	Yes, the emissions reductions are calculated following the methodologies and tools included in the registered PDD. The methodology and tools applied to this project are:	OK	OK

Checklist Question	Ref	Comments	Draft conclusion	Final conclusion
selected methodology.		ACM0002: consolidated baseline methodology for grid-connected electricity generation from renewable sources- version 12.1.0 Tool to calculate the emission factor for an electricity system version. 02.1.0		
Is a complete set of data for the specified monitoring period available? Are available evidences sufficient both in terms of frequency and in covering the full monitoring period? Are the source and the nature of evidences identified (external or internal, oral or documented, etc.)?	10.2.	Yes, a complete set of data and evidence are available. The nature of evidence is also identified.	OK	OK
Whether data were not available because activity levels or non-activity parameters were not monitored in accordance with the registered monitoring plan has the most conservative assumption theoretically possible been made?	10.3.	Not applicable since data were available for the whole proposed monitored period.	OK	OK
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.	10.4	Yes, the spreadsheet provided is fully traceable.	CAR 4	OK

Checklist Question	Ref	Comments	Draft conclusion	Final conclusion
Is the spreadsheet with the emission reductions calculations provided complete?	10.5.	Yes, the spreadsheet provided is complete.	CAR 4	OK
Has information provided in the monitoring report been cross-checked with other sources such as plant log books, inventories, purchase records, laboratory analysis?	10.6.	Yes, information provided in the monitoring report has been cross-checked with the receipt of sales.	CAR 4	OK
Have calculations of baseline emissions, VCS project activity emissions and leakage, as appropriate, been carried out in accordance with the formulae and methods described in the monitoring plan and the applied methodology document?	10.7.	Yes, the calculations of baseline emissions, VCS project activity emissions and leakage have been carried out in accordance with the formulae and methods described in the monitoring plan and the applied methodology.	CAR 4	OK
Have any assumptions used in emission calculations been justified?	10.8.	Yes, they have been justified,	CAR 4	OK
Have appropriate emission factors, IPCC default values and other reference values been correctly applied? Are the most recent data incorporated into the calculation	10.9.	The grid emission factor has been fixed ex-ante and the value of 0.5805 tCO ₂ /MWh as specified in registered CDM-PDD. It has been consistently applied by the project participant.	OK	OK

Checklist Question	Ref	Comments	Draft conclusion	Final conclusion
of the ex-post grid emission factor?				
11. Quality Management; defined organizational structure, responsibilities and competencies Internal QA/QC and document control				
Management System Have the GHG data monitoring system and all VCS monitoring procedures been implemented? Do they comply with the monitoring systems and procedures described in the monitoring plan and the approved methodology?	11.1.	Yes, all the GHG data monitoring system and all VCS monitoring procedures have been implemented and they comply with the monitoring systems and procedures described in the monitoring plan and the approved methodology.	OK	OK
Roles and Positions Check if all roles and positions of each person in the GHG data management process are clearly defined and implemented, from raw data generation to submission of the final data. Check further if only duly qualified personnel is involved in the monitoring procedures.	11.2.	Yes, roles and positions of each person in the GHG data management process are clearly defined and implemented as per "Monitoring and verification manual for CDM/VCS purposes", and only qualified personnel is involved in the monitoring procedures.	OK	OK
Trainings Check if initial trainings have	11.3.	Trainings for personnel involved in the monitoring procedures have been carried out and evidence has been shown to the verification team during on-site visit.	OK	OK

Checklist Question	Ref	Comments	Draft conclusion	Final conclusion
been carried out, in case deemed necessary.				
Troubleshooting procedures Assess whether troubleshooting procedures have been implemented.	11.4.	Yes, troubleshooting procedures have been implemented.	OK	OK
Maintenance procedures Are appropriate maintenance procedures in place?	11.5.	Yes, appropriate maintenance procedures are in place.	OK	OK
Reporting procedures Check how reports with relevance for the later determination of emission reductions will be generated. Is the frequency of emissions reports established?	11.6.	Yes, the reporting procedures and their frequency are established in the Monitoring and Verification Manual.	OK	OK
Internal QA/QC Assess whether there are any procedures in place on when, where and how checks and reviews are to be carried out, and what evidence needs to be documented? (This might include spot checks by a second person not performing	11.7.	Yes, the Monitoring and Verification Manual establishes the procedures on when, where and how checks and reviews are to be carried out, and what evidence needs to be documented.	OK	OK

Checklist Question	Ref	Comments	Draft conclusion	Final conclusion
the calculations over manual data transfers, changes in assumptions and the overall reliability of the calculation processes.)				
Data collection and data processing systems Check the eligibility of used systems. Does data collection system meet the requirements of the monitoring plan as per the applied methodology?	11.8.	Data acquisition and processing systems are appropriate for the project activity.	OK	OK
Data archive Check whether all data of monitoring parameters are recorded and archived according to the monitoring plan and the approved methodology.	11.9.	All records of monitoring parameters are archived according to the monitoring plan.	OK	OK
Data protection Assess whether appropriate measures have been take in order to avoid unintended or intended manipulation of the measured data.	11.10	The access to the databases is controlled and available only for authorized personnel.	OK	OK

Table 2 Resolution of Corrective Action and Clarification Requests

Clarifications and corrective action requests by Verification team	Ref. to table 1	Summary of project owner response	Verification team conclusion
CAR 1.- The PP shall use the latest VCS PD template version available.	1.1	Modifications have been done in VCS-PD, version v3.1 is used.	The final version of the VCS PD has been updated to template version 3.1. Thus, CAR 1 is closed.
CAR 2.- The starting date and the crediting period of the project shall be consistent in the VCS PD and the Monitoring Report.	1.6	Modifications have been done in VCS-PD	The name of the project proponent has been correctly indicated in the final version of the VCS PD. CAR 2 is closed.
CAR 3.- The PP shall use the latest VCS Monitoring Report template version available.	1.10	Modifications have been done in VCS-PD	The final version of the VCS MR has been updated to template version 3.2. Thus, CAR 3 is closed.
CAR 4.- Values of $EG_{output,y}$, $EG_{import,y}$, $EG_{project,y}$ and $EG_{another,y}$ in the spreadsheet and the MR are not correct, since they cover the period from 1 November 2011 to 15 May 2012.	5.2	Modifications have been done in VCS-Monitoring Report and ERs spreadsheet.	The values of monitored parameters $EG_{output,y}$, $EG_{import,y}$, $EG_{project,y}$ and $EG_{another,y}$ in the spreadsheet and the MR are now correct since they cover the proposed monitoring period. CAR 4 is closed.

Clarifications and corrective action requests by Verification team	Ref. to table 1	Summary of project owner response	Verification team conclusion
CAR 5.- The verification team noted during site visit that the serial number of the main meter does not match with that appearing in monitoring report and the Monitoring and Verification Manual for CDM/VCS purposes.	8.5.2.	Meter picture given as evidence to demonstrate meter number correct.	There was a typo in the label appearing in the meter and PP provided evidence that the correct serial number of the meters as stated in the calibration certificates are: MT-1011A453-01 for the main meter and MT-1011A560-01 for the backup meter. CAR 5 is closed.
CL 1.- Evidence of the selected starting date shall be provided to the VVB.	1.9	Evidence of the commissioning report has been provided.	Reliable evidence has been provided to the DOE. Thus, CL 1 is closed.
CL 2.- The PP is requested to clarify how it can be confirmed that the project has not created another form of GHG-related environmental credit other than that under the CDM.	1.19	Letter has been provided confirming that the project does not intend to generate any other form of GHG-related environmental credit	Reliable evidence has been provided to the DOE. Thus, CL 2 is closed.