



**Verification and certification report form for
CDM project activities
(Version 03.0)**

BASIC INFORMATION

Title and UNFCCC reference number of the project activity	San Antonio El Sitio Wind Power Project UNFCCC ref. No- 6973
Scale of the project activity	<input checked="" type="checkbox"/> Large-scale <input type="checkbox"/> Small-scale
Version number of the verification and certification report	03
Completion date of the verification and certification report	20/11/2019
Monitoring period number and duration of this monitoring period	First Monitoring period 19/04/2015 to 31/07/2018(First and Last date included)
Version number of the monitoring report to which this report applies	03
Crediting period of the project activity corresponding to this monitoring period	Fixed crediting period Start date: 19/04/2015 Length: 10 years (19/04/2015 to 18/04/2025)
Project participants	Eólico San Antonio El Sitio, S.A.
Host Party	Guatemala
Applied methodologies and standardized baselines	Selected Methodology: ACM0002 Version 12.3.0 – “Consolidated baseline methodology for grid-connected electricity generation from renewable sources” Selected standardized baseline: N/A
Mandatory sectoral scopes	Sectoral scope : 1- Energy industries (renewable - / non-renewable sources)
Conditional sectoral scopes, if applicable	NA
Estimated amount of GHG emission reductions or GHG removals for this monitoring duration in the registered PDD	267,590 tCO ₂ e
Certified amount of GHG emission reductions or GHG removals for this monitoring period	286,006 tCO ₂ e
Name and UNFCCC reference number of the DOE	LGAI Technological Center, S.A. (Applus+ Certification) UNFCCC Ref. No.: E-0032
Name, position and signature of the approver of the verification and certification report	Mr. Juan Sendín Caballero <i>Applus+ Certification Business Unit Managing Director</i> Signature:

SECTION A. Executive summary

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>>LGA Technological Center, S.A. (hereafter referred to as Applus+ Certification) has been contracted by Eólico San Antonio El Sitio, S.A. to perform the first verification of "San Antonio El Sitio Wind Power Project" (UNFCCC Ref. No. 6973) applying the methodology ACM0002 Version: 12.3.0. The management of Eólico San Antonio El Sitio, S.A. is responsible for the preparation of the GHG emissions data and the reported GHG emission reductions.

A desk review and a site visit have been conducted to verify the data submitted in the monitoring report. Applus+ Certification confirms the following has been reviewed:

- The approved registered PDD/1.3/, including the monitoring plan and the corresponding validation report;
- Monitoring report of previous monitoring period as well as corresponding verification report;
- Monitoring report of this monitoring period;
- The applied monitoring methodology;
- Relevant decisions, clarifications and guidance from the CMP and the CDM Executive Board;
- All information and references relevant to the project activity's resulting in emission reductions.

The project activity involves electricity generation by wind turbine generators (WTGs) and supplying the same to the Guatemalan National Interconnected System. This is renewable energy generation which can replace the fossil fuel dominated grid connected electricity generation. The project activity consists of 16 WTGs (3.45 MW capacity each), making the total installed capacity to be 55.2 MW in Los Llanos village of the municipality of Villa Canales, Guatemala. The WTGs are of Vestas (V112) make.

The generated electricity is evacuated to Guatemalan National Interconnected System. The project activity generates power by using the kinetic energy of wind, thus resulting in zero emissions during electricity production. The power produced displaces an equivalent amount of power from the grid, which is fed mainly by fossil fuel fired power plants. Hence, it results in reduction of GHG emissions.

The current verification has been performed as per latest valid version of the CDM Standards i.e., CDM PS for PAs version 02.0, CDM VVS for PAs version 02.0.

Applus+ Certification confirms that the project is implemented in accordance with the validated and registered PDD. The monitoring plan complies with the applied methodology ACM0002 Version: 12.3.0 and the monitoring have been carried out in accordance with the monitoring plan. The monitoring system is in place and the emission reductions are calculated without material misstatements. Our opinion relates to the project's 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 reviewed and evaluated Applus+ Certification confirms that the implementation of the project has resulted in 286,006 tCO_{2e} emission reductions during period 19/04/2015 to 31/07/2018.

SECTION B. Verification team, technical reviewer and approver

B.1. Verification team member

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)	Involvement in			
						Desk/document review	On-site inspection	Interviews	Verification findings
1.	Team Leader / Technical Expert	OR	Ahirwar	Vivek Kumar	GCEES	Y	Y	Y	Y
2.	Auditor in Training	IR	Calle	Agustín	Applus+ Certification	Y	N	N	Y

	(Verification) / Technical Expert in Training (1.2)								
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B.2. Technical reviewer and approver of the verification and certification report

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)
1.	Technical Reviewer	EI	Cortés	Miguel	Applus+ Certification
2.	Approver	IR	Sendín	Juan	Applus+ Certification

SECTION C. Application of materiality

C.1. Consideration of materiality in planning the verification

No.	Risk that could lead to material errors, omissions or misstatements	Assessment of the risk		Response to the risk in the verification plan and/or sampling plan
		Risk level	Justification	
1.	Manual adjustment of otherwise automatically recorded activity levels: This error may be due to manually recording of actual readings in-to original records.	Low	Monitoring Equipment e.g. Energy Meters have totalizer which reduces the chance of error as initial readings and final readings can be cross-check in every record. The reading of JMR is being recorded in the presence of representatives of DISCOM and O&M contractor. So chances of noting down incorrect reading diminish. Monthly share certificates are endorsed by state utility.	100 per cent of the data and information was checked from monthly share certificates and cross-checked from sold electricity invoices.
2.	Human error in the quantification of emissions. This error may be due to transfer of monitored data in-to Emission Reduction calculation sheet/4.1/ for calculation of actual emission reduction archived during monitoring period.	High	The monitoring data is transferred manually, so there is high potential risk of errors/omissions or misstatements.	100 per cent of the data and information was checked from Monthly share certificates and cross-checked from monthly invoices raised to state utility.

C.2. Consideration of materiality in conducting the verification

>> The project activity is large scale project and applicable threshold for materiality in accordance with CDM VVS for PAs Version 02.0 paragraph 326(c) is 2%. All the monthly reported figures for parameter **EG_{facility,y}** were verified with respective monthly share certificates and were found to be consistent. Therefore, it can be stated that the verified value is free from any potential error / omission / misstatement. The project activity, being a wind energy project, has assumed the project emission and leakages to be zero which is in line to the applied methodology and is also reasonable in the opinion of assessment team. Therefore, there are no additional factors which might lead to introduction of error in emission reduction estimation.

SECTION D. Means of verification**D.1. Desk/document review**

>> The Monitoring Report version 1 dated 10/09/2018 submitted by the PP was made publicly available on the UNFCCC website before the verification activities started. The published MR was assessed based on all the relevant documents. The aim of the assessment in the desk review was to:

- verify the completeness of the data and the information presented in the MR;
- check the compliance of the MR with respect to the monitoring plan depicted in the registered PDD and verify that the applied methodology was carried out. Particular attention to the frequency of measurements, the quality of the metering equipment including calibration requirements, and the quality assurance and quality control procedures was paid;
- evaluate the data management and the quality assurance and quality control system in the context of their influence on the generation and reporting of emission reductions.

A complete list of documents reviewed or referenced is available in Appendix 3 of this report.

D.2. On-site inspection

Duration of on-site inspection: 18/12/2018 -19/12/2018				
No.	Activity performed on-site	Site location	Date	Team member
1.	Confirm the implementation and operation of the project;	WTG project site at Los Llanos village of the municipality of Villa Canales, Guatemala	18/12/2018 - 19/12/2018	Vivek Kumar Ahirwar
2.	Review the data flow for generating, aggregating and reporting the monitoring parameters;	WTG project site at Los Llanos village of the municipality of Villa Canales, Guatemala	18/12/2018 - 19/12/2018	Vivek Kumar Ahirwar
3.	Confirm the correct implementation of procedures for operations and data collection;	WTG project site at Los Llanos village of the municipality of Villa Canales, Guatemala	18/12/2018 - 19/12/2018	Vivek Kumar Ahirwar
4.	Cross-check the information provided in the MR documentation with other sources;	WTG project site at Los Llanos village of the municipality of Villa Canales, Guatemala	18/12/2018 - 19/12/2018	Vivek Kumar Ahirwar
5.	Check the monitoring equipment against the requirements of the PDD and the approved methodology, including calibrations, maintenance, etc.;	WTG project site at Los Llanos village of the municipality of Villa Canales, Guatemala	18/12/2018 - 19/12/2018	Vivek Kumar Ahirwar
6.	Review the calculations and assumptions used to obtain the GHG data and ER;	WTG project site at Los Llanos village of the municipality of Villa Canales, Guatemala	18/12/2018 - 19/12/2018	Vivek Kumar Ahirwar

7.	Identify if the quality control and quality assurance procedures are in place to prevent or correct errors or omissions in the reported parameters.	WTG project site at Los Llanos village of the municipality of Villa Canales, Guatemala	18/12/2018 - 19/12/2018	Vivek Kumar Ahirwar
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D.3. Interviews

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Aguirre	Isabel	Econegocios	18/12/2018 - 19/12/2018	Electricity Generation Records (monthly energy statements, Invoices and break up sheets), Reliability & accuracy of readings considered for emission reduction calculations, Calibration procedure QA/QC procedures, data management, internal audits to maintain data quality & reliability, maintenance Practices Consideration of monitoring period, monitoring methodology, project documentation and emission reduction calculations	Vivek Kumar Ahirwar
2	Espinoza	Selvin	Eólico San Antonio el Sitio S.A	18/12/2018 - 19/12/2018	Monitoring and measuring system, Collection of measurements, Observations of established practices and Data Verification of monitoring parameters	Vivek Kumar Ahirwar

D.4. Sampling approach

>> Not Applicable, as all monitoring data as reported in MR and ER calculation sheet were verified and checked from actual records.

D.5. Clarification requests (CLs), corrective action requests (CARs) and forward action requests (FARs) raised

Areas of verification findings	No. of CL	No. of CAR	No. of FAR
Compliance of the monitoring report with the monitoring report form	-	CAR#1	-
Compliance of the project implementation and operation with the registered PDD	-	-	-
Post-registration changes	-	-	-
Compliance of the registered monitoring plan with the methodologies including applicable tools and standardized baselines	-	-	-
Compliance of monitoring activities with the registered monitoring plan	-	-	-
Compliance with the calibration frequency requirements for measuring instruments	CL #1	CAR#2	-
Assessment of data and calculation of emission reductions or net removals	-	-	-
Assessment of reported sustainable development co-benefits	-	-	-
Global stakeholder consultation	-	-	-
Others (please specify)	-	-	-
Total	1	2	-

SECTION E. Verification findings

E.1. Compliance of the monitoring report with the monitoring report form

Means of verification	The Monitoring Report version 3.0 is compliant with Monitoring Report form (Version 06.0) and guidance as provided by UNFCCC. Applus+ Certification considers that the attachment "Instructions for filling out the monitoring report form" at the end of template "Monitoring report form (Version 06.0)" has been followed. Relevant information was provided by the project participant in the applicable Monitoring Report sections.
Findings	CAR#1 was raised and resolved
Conclusion	Applus+ Certification confirms that the monitoring report is in compliance with the relevant valid form and instructions therein as accordance to "Clean Development Mechanism Validation and Verification Standard for Project Activity" (CDM- VVS for PA) v02.0 §§ 352-353.

E.2. Remaining forward action requests from validation and/or previous verifications

>> This is first verification of the project. There are no pending issues from the validation. This was verified and confirmed from the project documents on the UNFCCC project webpage.

E.3. Compliance of the project implementation and operation with the registered project design document

Means of verification	<p>The project activity is fully implemented according to the description presented in the registered PDD and approved revised PDD. The assessment team confirms, through the visual inspection that all physical features of the CDM project activity including data collecting systems and storage have been implemented in accordance with the approved registered PDD and approved revised PDD.</p> <p>This project activity involves generation of electricity from WTGs and supplying the generated electricity to the Guatemalan National Interconnected System. The project, located Los Llanos village of the municipality of Villa Canales, Guatemala, has an installed capacity of 55.2 MW (16X3.45MW, Vestas V112model). The PP has signed a PPA with Guatemalan National Interconnected System for the sale of electricity to the grid.</p> <p>The project was registered as a CDM project on 24/08/2012 and the crediting period (fixed) chosen from 01/11/2013 to 31/10/2023; however the project start date was changed due to a delay in the financial closure i.e. new start date of crediting period is 19/04/2015 which is date of first WTG commissioned as per</p>
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commissioning certificate. Therefore, the PP has applied for change of crediting period from 19/04/2015 to 18/04/2025. This was approved by EB on 06/09/2018 with reference number PRC-6973-001. It was verified and confirmed from the UNFCCC project webpage. This is the first verification of the project activity covering the period from 19/04/2015 to 31/07/2018.

The project has been implemented; equipment installed and is being operated as described in the registered PDD. The monitoring plan implemented during the current monitoring period is in compliance with the approved registered monitoring plan and the applied methodology. This was verified during the site visit.

Project location as mentioned in the below table is verified through Google Maps (<https://www.gps-coordinates.net/>) and found consistent with the same mentioned in the revised approved PDD and MR.

Village	Country	Centred geo-coordinates
Los Llanos village of the municipality of Villa Canales	Guatemala	Longitude: 14°21'32.31" N Latitude : 90°33'26.90" W

The project activity WTGs were commissioned starting from 09/12/2013 and commercial operation approval was granted on 19/04/2015 as mentioned in the Monitoring Report, commissioning dates of WTGs have been verified against the commissioning certificates and is found to be correct. The line diagram of the metering system of the project activity showing metering points is indicated in section C of the MR.

During the site visit current status of each WTG was verified by the verification team through the online CMS system maintained at project site and confirmed that all the 16 machines were functional.

Actual emission reductions achieved during the current monitoring period are 6.88% higher than the same estimated in the approved registered CDM-PDD for comparable period. This is due to good plant load factor achieved during the current monitoring period (kindly refer section E.8.6 of this report for further details).

No events or situations that may impact the applicability of the methodology occurred during this monitoring period, which was confirmed by checking the operational/shut down details available at site office and interviewing the site personnel.

The project was checked against the applicability criteria in the applied methodology ACM0002 Version 12.3.0 and it is confirmed that the methodology is applicable to the project activity. The data and variables provided in the Monitoring Report are the same as stated in the registered monitoring plan.

Findings

No non-conformability was observed during assessment for project implementation. Therefore, no finding was raised.

Conclusion

Applus+ Certification confirms that the implementation of project activity is in compliance with the CDM requirement stipulated under CDM-VVS for PA v02.0 §§ 354-356.

- i. The implementation and operation of the project activity has been conducted in accordance with the description contained in the registered PDD.
- ii. By means of an on-site inspection the verification team is able to confirm that all physical features (technology, project equipment, and monitoring and metering equipment) of the registered CDM project activity are in place and that the project participants have operated the project activity as per the registered PDD.
- iii. No information with regard to data and variables was identified that may surpass the estimated quantity of ERs in the registered PDD.

The emission reductions achieved during the current monitoring period are 286,006 tCO₂e, within the estimated quantity (267,590 tCO₂e) in the approved registered PDD for the comparable period.

E.4. Post-registration changes**E.4.1. Temporary deviations from the registered monitoring plan, applied methodologies, standardized baselines or other methodological regulatory documents¹**

>> There are no temporary deviations from the monitoring plan of approved registered PDD or applied methodology during the current monitoring period. It was verified and confirmed from the Monitoring Report, approved registered PDD, UNFCCC project webpage and on-site verification.

E.4.2. Corrections

>> There are no corrections identified during the current monitoring period.

E.4.3. Changes to the start date of the crediting period

>> There is a change to the start date of crediting period from 01/11/2013 to 19/04/2015 as identified during the current monitoring period. This was approved by EB on 06/09/2018 with reference number PRC-6973-001. It was verified and confirmed from the UNFCCC project webpage (Ref: Validation opinion on changes in PDD, version 04.3, dated 04/07/2018).

E.4.4. Inclusion of a monitoring plan

>> There is no inclusion of a monitoring plan identified during the current monitoring period.

E.4.5. Permanent changes from registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines or other methodological regulatory documents

>> There is no permanent change from registered monitoring plan, or not a permanent deviation of monitoring from the applied methodologies during the current monitoring period. It was verified and confirmed from the Monitoring Report, approved registered PDD, UNFCCC project webpage and on-site verification.

E.4.6. Changes to the project design

>> There is no change to project design of the registered project activity identified during the current monitoring period. It was verified and confirmed from the Monitoring Report, approved registered PDD, UNFCCC project webpage and on-site verification.

E.4.7. Changes specific to afforestation and reforestation project activities

>> Not Applicable.

E.5. Compliance of the registered monitoring plan with applied methodologies, applied standardized baselines, and other applied methodological regulatory documents

Means of verification	<p>The monitoring plan as contained in the revised approved PDD was reviewed against the monitoring requirements of the applied methodology ACM0002 version 12.3.0. Based on this review it was found that the monitoring plan contained in the revised approved PDD includes all the required parameters to be monitored in the context of project design and description and allows proper determination of emission reductions in accordance with the PDD and applied methodology ACM0002 version 12.3.0.</p> <p>It was observed during the site visit that, the WTGs are connected to the grid substation through 34.5 kV underground circuit cables. The collector substation consists of a building that houses the system of medium voltage, control equipment, protection and communications associated with substations. This voltage is set-up from 34.5 kV to 230 kV at this substation. This was also verified by interviewing the staff at the sub-station and the officials of the state utility.</p>
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¹ Other standards, methodologies, methodological tools and guidelines (to be) applied in accordance with the applied(selected) methodologies are collectively referred to as the other (applied) methodological regulatory documents).

It was confirmed through the interviews of representatives of the O&M provider during the site visit, that the procedure to derive the electricity exported to the grid by project owner is completely under jurisdiction of the state utility.

Values of the parameter “Quantity of net electricity generation supplied by the project plant/unit to the grid in period y ” is sourced from the monthly metering records of energy supplied to grid taking into account the electricity imports, cross-checked against values mentioned in the invoices and receipts of sales. Gross generation data and imports from the grid are also available on the website of the Wholesale Market Administrator (website: www.amm.org.gt). The verification team has verified these values from website against original log book records and invoices maintained at project site and found to be consistent and correct, hence accepted.

During the site visit, it was observed that, the WTGs belonging to the project activity are connected to the grid through an appropriate power evacuation system.

A comparison between the requirement of the methodology, for the parameter $EG_{\text{facility},y}$, and the description of the same parameter in the registered monitoring plan is provided in the table below:

Registered PDD Approved Methodology	Requirement in the applicable methodology and relevant EB documents	Requirement in the registered monitoring plan	Opinion
Data/Parameter	$EG_{\text{facility},y}$	$EG_{\text{facility},y}$	In compliance with the applicable methodology.
Description	Quantity of net electricity supplied to the grid in year y	Quantity of net electricity supplied to the grid in year y	In compliance with the applicable methodology.
Measured/Calculated /Default	Directly measured	Calculated	This parameter is continuously metered; generation data is aggregated monthly for billing purposes. Electricity consumption from the grid (for start-up or auxiliary purposes) is deducted from gross exports to the latter in order to obtain net electricity supplied to the NIS. This approach has been described in section B.7.2 of the approved registered PDD, hence accepted.
Source of data	Not Specified	Monthly recordings from Wholesale Market Administrator (AMM).	This is as per the actual practice on site by the state utility for this project activity. Hence accepted.
Monitoring equipment	Energy meters	Energy Meters	This parameter is directly from measured values of electricity exports and imports measured at metering points. Hence

				accepted.
	Measuring/Reading/Recording frequency	Hourly measurement and monthly Recording	Hourly measurements from metering system and monthly recordings from Wholesale Market Administrator (AMM).	The Hourly measurement and monthly Recording is for the directly measured $EG_{\text{facility}, y}$ as per the applicable methodology. However this parameter is calculated as justified in the row "Measured/Calculated /Default" above, hence the monthly recording frequency is acceptable since it is as per the actual practice on site by the state utility. Hence accepted.
	Calculation method (if applicable)	Not Applicable	$EG_{\text{facility}, y} = EG_{\text{facility}, \text{Export}, y} - EG_{\text{facility}, \text{Import}, y}$	This is as per the actual practice on site by the state utility. Hence accepted. The same formula is mentioned in the registered monitoring plan.
	QA/QC procedures	Measurement results shall be cross-checked with records for sold electricity.	The values for $EG_{\text{facility}, \text{Export}, y}$ and $EG_{\text{facility}, \text{Import}, y}$, hence $EG_{\text{facility}, y}$ are cross-checked against values mentioned in the invoices and receipts of sells raised on the state utility.	This is in compliance with the applicable methodology.
	In view of the above assessment, the verification team is able to confirm that the registered monitoring plan of the registered project is in accordance with the applied methodology.			
Findings	No non-conformability was observed during assessment for monitoring plan against applied monitoring methodology. Therefore, no finding was raised.			
Conclusion	Applus+ Certification confirms that the monitoring plan is in accordance with the approved methodology and correctly applied by the registered CDM project activity and CDM-VVS for PA v02.0 §§ 357-359 have been met.			

E.6. Compliance of monitoring activities with the registered monitoring plan

E.6.1. Data and parameters fixed ex ante or at renewal of crediting period

Means of verification	The following three parameters are fixed ex-ante defined in registered PDD:			
	Data/parameter:	$EF_{OM, y}$	$EF_{BM, y}$	EF_y or $EF_{\text{grid}, CM, y}$
	Unit	tCO ₂ /MWh	tCO ₂ /MWh	tCO ₂ /MWh
	Description	Operating margin CO ₂ emission factor	Build margin CO ₂ emission factor for the project	Combined margin CO ₂ emission factor of the

		for the project electricity system in year y	electricity system in year y	national connected grid.
	Source of data	General Market Administrator (Administrador del Mercado Mayorista –AMM) Data for the 2012-2014 period is shown on: Table 10 (build margin) of PDD		
	Value(s) applied	0.681	0.358	0.6
Findings	No non-conformability was observed during assessment for monitoring plan against applied monitoring methodology. Therefore, no finding was raised.			
Conclusion	Value of all 3 parameters reported in the monitoring report and corresponding emission reduction calculations spreadsheet are consistent with the registered PDD. The applied values are correct and justified.			

E.6.2. Data and parameters monitored

Means of verification	The analysis of the compliance of the actual monitoring, of the monitoring parameter with the approved registered monitoring plan is provided as following: Quantity of net electricity generation supplied by the project plant/unit to the grid in period y, $EG_{\text{facility}, y}$ (MWh):			
	Monitoring Report, onsite checks Registered Monitoring Plan & Approved Methodology	Requirement in the approved registered monitoring plan	Implementation of the project	Conclusion on the compliance of the implementation with the monitoring plan
	Data/Parameter	$EG_{\text{facility}, y}$	$EG_{\text{facility}, y}$	In compliance
	Description	Quantity of net electricity generation supplied by the project activity to the grid in year y.	Quantity of net electricity generation supplied by the project plant/unit to the grid in period y	In compliance
	Measured/Calculated /Default	Measured and Calculated	Measured and calculated	In compliance
	Source of data	Metering system located at the substation. The data is read remotely using tele-measurement technology via a MWP6000 software. Records of gross energy supplied to grid and imports are also available on the website of the Wholesale Market Administrator (www.amm.org.gt)	Metering system located at the substation. The data is read remotely using tele-measurement technology via a MWP6000 software. Records of gross energy supplied to grid and imports are also available on the website of the Wholesale Market Administrator (www.amm.org.gt)	In compliance
	Monitoring equipment	Energy Meters	Energy Meters	In compliance
	Measuring/Reading/ Recording frequency	Hourly measurements from metering system and monthly recordings from Wholesale	Hourly measurements from metering system and monthly recordings from Wholesale Market Administrator (AMM).	In compliance

		Market Administrator (AMM).		
	Calculation method (if applicable)	Electricity consumption from the grid (for start-up or auxiliary purposes) will be deducted from gross exports to the latter in order to obtain net electricity supplied to the NIS.	Electricity consumption from the grid (for start-up or auxiliary purposes) will be deducted from gross exports to the latter in order to obtain net electricity supplied to the NIS.	In compliance
	QA/QC procedures	Data can be cross-checked with the receipts of sales and with the invoices raised by state utility, as well as from the data provided by the Wholesale Market Administrator (www.amm.org.gt)	Monthly values have been cross-checked against values mentioned in the invoice raised to the state utility as well as from the data provided by the Wholesale Market Administrator (www.amm.org.gt) and found consistent.	In compliance
<p>EG_{facility,y} is a measured and calculated parameter, as indicated in the table above. This calculation is carried out by the state utility. The PP has no role in the calculation. This was verified by interviewing the site officials during the site visit. The PP has correctly reported the monthly values in the emission reduction spread sheet. Monthly values of EG_{facility,y} have been cross checked with the monthly invoices/sales receipts raised by the PP and are found to be consistent.</p> <p>The value of EG_{facility,y} for the current monitoring period is 477,759.84 MWh (actual monitored value). However, due to application of meter error factor for calibration delay, the value of this parameter EG_{facility,y} as 476,678 MWh is directly used for the emission reduction calculations.</p> <p>In summary, the actual of monitoring for EG_{facility,y} is in compliance with the approved registered monitoring plan. The “Wholesale Market Administrator” data, from which the parameter EG_{facility,y} is sourced, is prepared and endorsed by an external government agency i.e. the State Electricity Board and the PP has no influence in the entire procedure. Hence the data issued by the state electricity board through “Wholesale Market Administrator” data is considered to be authentic.</p>				
Findings	CL#1 was raised and closed.			
Conclusion	<p>Applus+ Certification confirms that the actual monitoring activities observed on site are in compliance with the monitoring plan and as described in the approved registered PDD and the same is in line with the monitoring methodology.</p> <p>The applicable parameters stated in the approved monitoring plan and the applied methodology have been sufficiently monitored. The responsibilities and authorities for monitoring and reporting are in accordance with what is stated in the revised approved PDD monitoring plan. The information flow (data generation, aggregation, recording, calculation and reporting) for the parameters to be monitored including its values in the final version of the MR have been correctly reported and confirmed. Hence, the requirement of CDM-VVS for v02.0 §§ 360-364 have been met.</p>			

E.6.3. Implementation of sampling plan

Means of verification	No sampling plan is defined in the registered monitoring plan. All the data and information has been checked during verification assessment, thus no sampling plan has been applied in the Project.
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Findings	Not Applicable
Conclusion	Not Applicable

E.7. Compliance with the calibration frequency requirements for measuring instruments

Means of verification	<p>As per the monitoring plan in the revised approved PDD the meters are to be tested and calibrated annually. The calibration frequency has been followed for the substation meters in the current monitoring period.</p> <p>The calibration certificates of meters have been checked to confirm the same. The project activity metering has been physically inspected during the site visit. The details of monitoring equipment involved in the project activity and their calibration method are mentioned in Section C of the MR. All the energy meters and substation meters are of accuracy class of 0.2% and a calibration frequency of annual. The installation and working condition of the meters were checked during the on-site inspection and it was found to be satisfactory. These meters are duly approved, installed, tested, sealed and in the custody of the state utility. The PP has no control over the same.</p> <p>Energy Meter Calibration :</p> <p>At grid sub-station, there are two meters installed as Main and Backup Power meter. The calibrations of these meters were annually conducted by the third party appointed by grid authority. The calibration details are mentioned below which has been confirm from calibration certificates provided by the PP.</p>		
	Element	Main Power Meter	Back-up Power Meter
	Type of meter	Bidirectional	Bidirectional
	Accuracy class	0.2s	
	Meter Serial Number	Old Meter : MW-1412A961-01 New (Current Meter): MW-1505A646-02	Old Meter: MW – 1412A962-01 New (Current Meter): MW-1505A652-02
	Date of Meter Replacement (if any)	Old Meter is placed by New (Current Meter) on 29/05/2015	Old Meter is placed by New (Current Meter) on 29/05/2015
	Calibration Dates	Old Meter : 11/12/2014 New (Current Meter): 29/05/2015, 15/03/2016, 17/03/2017, 27/03/2018	Old Meter : 11/12/2014 New (Current Meter): 29/05/2015, 15/03/2016, 17/03/2017, 27/03/2018
	Calibration Frequency	1 year	1 year
	Calibration Validity	27/03/2019	27/03/2019
	Delay in calibration	From 14/03/2017 to 16/03/2017 And From 16/03/2018 to 26/03/2018	From 14/03/2017 to 16/03/2017 And From 16/03/2018 to 26/03/2018
	Maximum permissible error application	<p>For delay period from 14/03/2017 to 16/03/2017, the PP has applied a 0.039 error factor instead of 0.02 because it has been verified during calibration of energy meter conducted on 15/03/2017 that there is a 0.039 error factor, as reported by calibration entity. This factor is a larger error factor compared to maximum permissible error (+/- 2%) for the meter. Furthermore, the PP has applied conservatively larger error factor for whole month of March 2017 since the official values of energy produced published by the wholesale market administrator (AMM) are published per month. This is found to be correct and as per calibration requirement mentioned in the CDM Validation and verification standard for project activities, version 02.0</p> <p>For delay period from 16/03/2018 to 26/03/2018, the</p>	

	<p>PP has applied 0.02 as error factor for whole month of March 2018 as if the error identified in the delayed calibration is smaller than the maximum permissible error, the maximum permissible error shall be used. This is checked and found to be correct and appropriate as per calibration requirement mentioned in the CDM Validation and verification standard for project activities, version 02.0</p> <p>Apart from above, there is no other calibration delay identified during current monitoring period.</p> <p>The value of $EG_{\text{facility},y}$ for the current monitoring period is 477,760 MWh (actual monitored value). However, due to application of meter error factor for calibration delay, the value of parameter $EG_{\text{facility},y}$ as 476,678 MWh is directly used for the emission reduction calculations.</p> <p>As evident from the calibration certificates provided for energy meters, Apart from above two delays there is no other calibration delay in calibration of energy meter identified during the current monitoring period.</p>
Findings	CAR#2 was raised and resolved
Conclusion	Applus+ Certification confirms that the calibration is conducted at the frequency following the relevant national standards as specified by the methodology and the monitoring plan contained in the approved registered PDD. Therefore, the requirement of CDM-VVS for PA v02.0 §§ 370 has been met.

E.8. Assessment of data and calculation of emission reductions or net removals

E.8.1. Calculation of baseline GHG emissions or baseline net GHG removals by sinks

Means of verification	<p>The verification team verified that</p> <ol style="list-style-type: none"> A complete set of data for the monitoring period was available for the monitoring period and the verification of each monitoring parameter is elaborated under Section E.6.2 of this report. The complete monitoring data is also presented in the corresponding ER sheet of final Monitoring Report. The information provided in the monitoring report was cross checked with other sources, wherever appropriate and available, and such information is also included under Section E.6.2 of this report. The calculations of baseline emissions as presented in the corresponding ER sheet of final Monitoring Report were checked and found to be consistent with the formulae and methods described in the registered monitoring plan and the applied methodology. All assumptions used in the emission calculations were found appropriate and therefore justified. Appropriate emission factors and other reference values have been correctly applied. This has also been elaborated under Section E.6.1 of this report. No standardized baseline was prescribed in the registered PDD and therefore it has not been applied. There is no pro-rata approach applied to the calculations of GHG emission reductions in the current monitoring period in as the monitoring period starts after 31 December 2012. <p>The baseline emissions are the product of net electricity supplied to the grid $EG_{\text{facility},y}$ expressed in MWh of electricity produced by the renewable generating unit multiplied by the grid emission factor. Baseline emission factor is calculated as combined margin, consisting of a combination of operating margin (OM) and build margin (BM) factors.</p> $BE_y = EG_{\text{facility},y} * EF_{\text{grid, CM, y}}$ <p>Where:</p>
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	<p>BE_y: Baseline Emissions in year y; t CO₂</p> <p>EG_{facility,y}: Net electricity supplied to the grid by the CDM project activity in year y (MWh)</p> <p>EF_{grid, CM, y}= Combined margin CO₂ emission factor (tCO₂/MWh)</p> <p>As per the revised approved PDD, combined margin emission factor is 0.6 tCO₂/MWh. Hence the baseline emissions for the project activity for the current monitoring period are as follows.</p> <p>BE_y = 476,678 * 0.6 = 286,006 tCO₂e</p>
Findings	No non-conformability was observed during assessment for monitoring plan against applied monitoring methodology. Therefore, no finding was raised.
Conclusion	<p>Applus+ Certification confirms that the requirement outlined under CDM-VVS for v02.0 §§ 374 have been meet as:</p> <ul style="list-style-type: none"> • A complete set of data for the monitoring period is available. • Information on the baseline GHG emission calculation provided in the monitoring report has been cross-checked with other sources. • Calculations of baseline emissions have been carried out in accordance with the formulae and methods described in the monitoring plan and the applied methodology document. • Appropriate emission factor of the power grid has been correctly applied.

E.8.2. Calculation of project GHG emissions or actual net anthropogenic GHG removals by sinks

Means of verification	The approved registered PDD and applied monitoring methodology does not prescribe any project emissions to be considered. The onsite visit and project design also did not reveal any potential source to be considered in this regard.
Findings	No non-conformability was observed during assessment for this section. Therefore, no finding was raised.
Conclusion	No project emissions were required to be calculated.

E.8.3. Calculation of leakage GHG emissions

Means of verification	The approved registered PDD and applied monitoring methodology does not prescribe any leakage emissions to be considered. The onsite visit and project design also did not reveal any potential source to be considered in this regard.
Findings	No non-conformability was observed during assessment for this section. Therefore, no finding was raised.
Conclusion	No leakage emissions were required to be calculated.

E.8.4. Summary calculation of GHG emission reductions or net anthropogenic GHG removals by sinks

Means of verification	<p>As elaborated above, the entire emission reductions from the project activity were based on baseline emissions. The calculations presented in this regard in the final monitoring report and corresponding ER calculation sheet were found appropriate and complying with the provisions prescribed in the registered monitoring plan of approved registered PDD and applied methodology.</p> <p>The verification team confirms that an audit trail that contains the evidence and records that validated the stated figures were checked and found acceptable.</p>
Findings	No non-conformability was observed during assessment for this section. Therefore, no finding was raised.
Conclusion	<p>Applus+ Certification confirms that the requirement outlined under CDM-VVS for PA v02.0 §§ 374 have been meet as:</p> <ul style="list-style-type: none"> • A complete set of data for the monitoring period is available. • Information provided in the monitoring report has been cross-checked with other sources; • Calculations of baseline emissions, and 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. • There are no assumptions in emission reductions calculation. • Appropriate emission factor of the power grid has been correctly applied.

E.8.5. Comparison of actual GHG emission reductions or net anthropogenic GHG removals by sinks with estimates in registered PDD

Means of verification	As verified and evident from the final Monitoring Report and corresponding ER sheet, the actual emission reductions achieved by the project activity in the current monitoring period were found higher than the estimated quantity in the approved registered PDD for the comparable period. This is largely due to good plant load factor achieved during the current monitoring period.			
	Annual CERs estimated in the registered PDD (tCO ₂ e)	Estimated CERs for current monitoring period(365 days), tCO ₂ e	Actual CERs achieved in the current monitoring period, tCO ₂ e	Difference
	81,392	267,590	286,006	+ 6.88%
	Considering, there is 6.88% increase in ERs than the estimated amount due to good PLF; it was found acceptable to the assessment team.			
Findings	No non-conformability was observed during assessment for this section. Therefore, no finding was raised.			
Conclusion	Applus+ Certification confirms that the requirement outlined under CDM-PS for PA v02.0 §§ 266 have been meet as: <ul style="list-style-type: none"> A comparison of actual GHG emission reductions or net anthropogenic GHG removal of the project activity achieved during this monitoring period with the estimates in the approved registered PDD has been provided in the Monitoring Report. The verification team confirms that the calculation of the comparison is correct. 			

E.8.6. Remarks on difference from estimated value in registered PDD

Means of verification	The verification team has assessed the cause of any variation in the actual GHG emission reductions achieved during the current monitoring period. There is increase of 6.88%in the actual emission reductions achieved during the current monitoring period from that stated in the approved registered PDD. This is largely due to good plant load factor achieved during the current monitoring period. It is to be noted that PLF is completely governed by the availability of wind, which is natural phenomenon and it is beyond the control of PP. The actual emission reductions were less than the estimation in the approved registered PDD for an equivalent length of the monitoring period therefore no further explanation is required.
Findings	No non-conformability was observed during assessment for this section. Therefore, no finding was raised.
Conclusion	Applus+ Certification confirms that the requirement outlined under CDM-PS for PA v02.0 §§ 267and CDM-VVS for PA v02.0 §§ 356 (d) have been meet as: <ul style="list-style-type: none"> The verified emission reductions are higher than the estimated value in the monitoring period. The project participants have explained the cause of the increase in the actual GHG emission reductions achieved during the current monitoring period, and including all information (i.e. data and/or parameters) that is different from that stated in the approved registered PDD. The variation is deemed to be reasonable.

E.8.7. Actual GHG emission reductions or net anthropogenic GHG removals by sinks during the first commitment period and the period from 1 January 2013 onwards

Means of verification	Based on the assessment done in section E.8.1 to E.8.6, the verification team is able to certify that the emission reductions from the CDM project activity 6973 "San Antonio El Sitio Wind Power Project" in Guatemala during the period from 19/04/2015 to 31/07/2018 (including both days) is 286,066 tCO ₂ e.
Findings	No non-conformability was observed during assessment for this section. Therefore, no finding was raised.
Conclusion	Applus+ Certification confirms that the requirement outlined under CDM-PS for PA v02.0 §§ 265 is not applicable as the project participant has calculated GHG emission reductions from 1 Jan 2013 onwards.

E.9. Assessment of reported sustainable development co-benefits

Means of verification	Not applicable
Findings	Not applicable
Conclusion	Not applicable

E.10. Global stakeholder consultation

Means of verification	Not applicable
Findings	Not applicable
Conclusion	Not applicable

SECTION F. Internal quality control

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As a final step of verification, the final documentation including the verification report has to undergo an internal quality control by the Technical Reviewer. Each report has to be finally approved either by the DOE's Technical Manager or the Deputy. In case one of these two persons is part of the assessment team, the approval can only be given by the person who is not a part of the assessment team. If the documents have been satisfactorily approved, the Request for Issuance is submitted to the CDM-EB along with the relevant documents.

SECTION G. Verification opinion

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Applus+ Certification has been contracted by Eólico San Antonio El Sitio, S.A. to perform the verification of the emission reductions reported for the CDM project "San Antonio El Sitio Wind Power Project" in the period 19/04/2015 to 31/07/2018.

Applus+ Certification concludes that the CDM Project "San Antonio El Sitio Wind Power Project", as described in the monitoring plan contained in the approved registered PDD (Version 4.3, dated 04/07/2018) and Monitoring Report (Version 3, 11/11/2019), meets all relevant requirements of the UNFCCC for CDM project activities including article 12 of the Kyoto Protocol, the modalities and procedures for CDM (Marrakesh Accords) and the subsequent decisions by the COP/MOP and CDM Executive Board. The verification is conducted in line with the (CDM-VVS for PA) Version 02.0 requirements. The Project is implemented according to selected monitoring methodology and the revised approved PDD. The monitoring equipment was installed, calibrated and maintained in a proper manner. The monitoring system is in place and the Project is generating GHG emission reductions as a CDM project.

Applus+ Certification confirms that the project is implemented in accordance with the validated and approved registered Project Design Document and revised approved 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 seen and evaluated we confirm that the implementation of the project has resulted in 286,006 tCO₂e emission reductions during the period 19/04/2015 to 31/07/2018 (both days included).

Applus+ Certification therefore issues the positive verification opinion expressed in the Certification statement in Section H.

SECTION H. Certification statement

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Applus+ Certification has been engaged by Eólico San Antonio El Sitio, S.A. to perform the first verification of the 'San Antonio El Sitio Wind Power Project' (UNFCCC Ref. No. 6973).

The management of Eólico San Antonio El Sitio, S.A. is responsible for the preparation of the GHG emissions data and the reported GHG emissions reductions on the basis set out within the project's approved registered PDD version 4.3, completed on 04/07/2018 and the applied methodology ACM0002 Version: 12.3.0.

Our verification approach was based on the requirements as defined under the Kyoto Protocol, Marrakesh accord, as well as those defined by the CDM Executive Board. Our approach is risk-based, drawing on an

understanding of the risks associated with reporting GHG emissions data and the controls in place to mitigate these. The verification can confirm that:

- the project is operated as planned and described in the project design document approved by the EB;
- the approved monitoring plan is as per the applied methodology;
- the monitoring in Monitoring Report is as per the PDD and the monitoring plan approved by the EB;
- the development and maintenance of records and reporting procedures are in accordance with the approved registered monitoring plan;
- the installed equipment being essential for generating emission reduction runs reliably and is calibrated appropriately;
- the monitoring system is in place and generates GHG emission reductions data;
- the GHG emission reductions are calculated without material misstatements.

In our opinion, the GHG emission reductions for 'San Antonio El Sitio Wind Power Project' for the monitoring period 19/04/2015 to 31/07/2018 as reported in Monitoring Report, prepared on the basis of the project's Monitoring Plan are fairly stated.

Based on the information we have seen and evaluated, we confirm the following statement:

Reporting period:	From 19/04/2015 to 31/07/2018
Verified emissions in the above reporting period:	
Leakage emissions	00,000 tCO ₂ equivalents
Project emissions	00,000 tCO ₂ equivalents
Baseline emissions	286,006 tCO ₂ equivalents
Emission reductions in this monitoring period (i.e. 19/04/2015 to 31/07/2018	286,006 tCO ₂ equivalents
Emission reductions achieved during the period up to 31 December 2012.	Nil
Emission reductions achieved during the period from 1 January 2013 onwards. (i.e. 19/04/2015 to 31/07/2018)	286,006 tCO ₂ equivalents

Appendix 1. Abbreviations

Abbreviations	Full texts
AMM	Administrador del Mercado Mayorista (Wholesale market administrator)
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CDM PCP	Clean Development Mechanism Project Cycle Procedure
CDM PS	Clean Development Mechanism Project Standard
CDM VVS	Clean Development Mechanism Validation and Verification Standard
EB	Executive Board
EF	Emission Factor
ER	Emission Reductions
CER	Certified Emission Reduction
CL	Clarification Request
DOE	Designated Operational Entity
DNA	Designated National Authority
FAR	Forward Action Request
GHG	Greenhouse Gas(es)
IPCC	Intergovernmental Panel on Climate Change
JMR	Joint Meter Reading
MP	Monitoring Plan
MR	Monitoring Report
MW / MWh	Megawatt / Megawatt hour
PDD	Project Design Document
PPA	Power Purchase Agreement
PP	Project Participant
PRC	Post Registration Changes
TR	Technical Review(er)
UNFCCC	United Nations Framework Convention on Climate Change
WTG	Wind Turbine Generator

Appendix 2. Competence of team members and technical reviewers

According to the sectoral scope / technical area and experience in the sectoral or national business environment, Applus+ Certification has composed a project assessment team in accordance with the appointment rules in the internal Quality Management System of Applus+ Certification.

The composition of audit team shall be approved by the Applus+ Certification ensuring that the required skills are covered by the team.

The four qualification levels for team members that are assigned by formal appointment rules are as presented below:

- Lead Auditor (LA).
- Auditor (A) / Auditor in Training (AiT).
- Technical Expert (TE).
- Technical Reviewer (TR).

The sectoral scope / technical area knowledge linked to the applied methodology/ies shall be covered by the assessment team.

Name	Qualification	Coverage of scope	Coverage of technical Area	Financial aspect	Host country Experience	Attendance to the On-Site Assessment
Vivek Kumar Ahirwar	Lead Auditor (LA)	Yes (1)	Yes (1.2)	N/A	Yes	Yes
Vivek Kumar Ahirwar	Technical Expert (TE)	Yes (1)	Yes (1.2)	N/A	Yes	Yes
Agustín Calle	Auditor in Training (Verification) (AiT) / Technical Expert in Training (1.2) (TEiT)	N/A	N/A	N/A	N/A	No
Miguel Cortés	Technical Reviewer (TR)	Yes (1)	Yes (1.2)	N/A	N/A	N/A

The curricula vitae of the DOE's team members are provided below:

Vivek Kumar Ahirwar is a BEE-Certified Energy Auditor by Govt of India with over eight years of relevant experience in energy efficiency, energy audit, thermal and electrical energy generation technology from renewable source and energy conservation in energy intensive industries, designated consumers and commercial buildings, implementation of energy conservation building codes, research, process and green building projects. He is a certified lead auditor for ISO 14001 EMS and 14064. He has experience under various categories of projects stating from renewable to waste to supercritical projects and WCD. He has successfully audited more than 100 GHG (CDM/VCS/GS) projects in different states across the India. He has done Mater in Technology (Energy Management) from a premier institute, School of Energy & Environmental Studies, DAVV, Indore (M.P.), India and Bachelor of Engineering (Mechanical Engineering) from Govt. Engineering college, Rewa, RGPV, India.

Agustín Calle (Bachelor's Degree on Environmental Sciences and Master's Degree on Environmental Control and Management in Companies) has more than 9 years of experience on implementation, outsourcing and audit of Management Systems and waste management consultancy services, CDM and sustainability, as well as an active participation in Spanish Normalization Committees, among other activities.

In Applus+ since July 2017, being appointed as Technical Manager and Quality Manager, mainly managing internally the CDM Department to ensure quality performances, coordinate global team and maintenance of the Accreditations.

Miguel Cortés holds a Bachelor Science Degree on Civil and Environmental Engineering, being specialized on Hydric Resources. He has worked as CDM and environmental consultant for different industries of multidisciplinary sectors world widely. Miguel counts with several years of CDM experience, working and being qualified as Lead Auditor and Technical Reviewer for different DOE's world widely. Furthermore, he has focused his professional CDM portfolio career within LATAM, developing projects in Argentina, Mexico, Panama, Colombia and Chile among others.

Appendix 3. Documents reviewed or referenced

No.	Author	Title	References to the document	Provider
1.	Basic Documents (Monitoring Report, Project Design Documents, Previous Verification Reports)			
1.0	Eólico San Antonio El Sitio, S.A.	MR, version 1 (Published)	Dated 19/09/2018	PP
1.2	Eólico San Antonio El Sitio, S.A.	MR, version (final), version 3	Dated 11/11/2019	PP
1.3	Eólico San Antonio El Sitio, S.A.	Revised approved PDD, Version 4.3	Dated 04/07/2018	PP
1.4	Applus	Validation Opinion on PRC, Version 03	Dated 17/07/2018	Other: UNFCCC
1.5	UNFCCC	CDM Project activity view page "San Antonio El Sitio Wind Power Project" https://cdm.unfccc.int/Projects/DB/RWTUV1344719367.74/view	-	Other: UNFCCC
1.6	Eólico San Antonio El Sitio, S.A.	MR, version 2	Dated 05/02/2019	PP
2.	References and requirements at UNFCCC/IPCC/etc.			
2.1	UNFCCC website	Clean Development Mechanism Validation and Verification Standard for Project Activities (CDM-VVS for PA), version 02.0 as per EB 101, Annex 2	Dated 29/11/2018	Other: UNFCCC
2.2	UNFCCC website	CDM Project Standard for Project Activities (CDM-PS for PA), version 02.0 as per EB 101, Annex 1	Dated 29/11/2018	Other: UNFCCC
2.3	UNFCCC website	Approved Consolidated Methodology ACM0002, Version 12.3.0	Dated 02/03/2012	Other: UNFCCC
2.4	UNFCCC website	Guidance to Complete "Monitoring Report Form (CDM-MR-FORM), Version 06.0" as accordance with the Attachment "Instructions for filling out the monitoring report form"	Dated 07/06/2017	Other: UNFCCC
2.5	UNFCCC website	Tool to calculate the emission factor for an electricity system, Version 6 as per EB 97, Annex 7	Dated 01/11/2017	Other: UNFCCC
3.	Project implementation information			
3.1	State utility	Commissioning certificates for all 16 WTGs	-	PP
3.2	State utility	Power Purchase Agreement	-	PP
3.3	State utility	Monthly Report - San Antonio by Vestas	For the period 19/04/2015 to 31/07/2018	PP
3.4	Eólico San Antonio El Sitio, S.A.	Monthly invoices issued by PP	For the period 19/04/2015 to 31/07/2018	PP
3.5	AMM	General Market Administrator (Administrador del Mercado Mayorista –AMM) Data for the 2012-2014 period is shown on: Table 10 (build margin) of PDD	-	Other
3.6	AMM	General Market Administrator (Administrador del Mercado Mayorista –AMM) data for gross generation and	-	Other

		imports, as well as net generation data and invoices for sales.		
4.	ER calculation and cross checking issue			
4.1	Eólico San Antonio El Sitio, S.A.	Emission reduction calculation sheet, version 02	Dated 11/11/2019	PP
4.2	Eólico San Antonio El Sitio, S.A.	Emission reduction calculation sheet, version 01	Dated 05/02/2019	PP
5.	Calibration issues			
5.1	State utility	Calibration certificates of energy meters	-	PP
6.	Others			
6.1	Applus+ Certification	Site Visit Attendance Sheet	18/12/2018 - 19/12/2018	-
6.2	Applus+ Certification	Site Visit Photograph	18/12/2018 - 19/12/2018	-

Appendix 4. Clarification requests, corrective action requests and forward action requests

Table 1. Remaining FAR from validation and/or previous verifications

FAR ID	N/A	Section no.	N/A	Date: N/A
Description of FAR				
N/A				
Project participant response				Date: N/A
N/A				
Documentation provided by project participant				
N/A				
DOE assessment				Date: N/A
N/A				

Table 2. CL from this verification

CL ID	01	Section no.	E.6.2	Date : 29/12/2018
Description of CL				
The PP is requested to provide following documents checked at onsite visit for further cross-checking:				
<ul style="list-style-type: none"> a. Monthly Report- San Antonio by VESTAS b. Dispatch Data for each month from AMM c. Bill Receipt issued by the PP d. Calibration Certificate of Energy Meters 				
Project participant response				Date : 06/02/2019
Documents have been provided as annexes.				
Documentation provided by project participant				
Annexed documents				
<ul style="list-style-type: none"> 1. Monthly Report- San Antonio by VESTAS 2. Dispatch Data AMM 3. Bill Receipt issued by the PP 4. Calibration Certificate of Energy Meters 				
DOE assessment				Date: 06/02/2019

The PP has submitted all supporting documents and same have been verified and found to be correct, hence accepted. CL#1 closed.

Table 3. CAR from this verification

CAR ID	01	Section no.	E.1	Date	:29/12/2018
Description of CAR					
<ol style="list-style-type: none"> 1. The PP is requested to clarify how the estimated emission reduction value (i.e. 291,654 tCO₂) of ex-ante calculated for current monitoring period. There is no reference of estimated emission reduction value is mentioned on MR page 01 and corresponding section E.5. 2. The section A.1 of MR is not provided the details of monitoring period and actual achieve emission reduction for the current monitoring period. 3. In section C of MR, the line diagram is not shown the location of monitoring equipment (i.e. Energy Meters). 4. In section D.1 of MR, the “value applied” for each parameter is not provide correct value for corresponding parameter. 5. In section D.2 of the MR, the “source of data” is not mentioned correctly and not provides the proper reference of document. 6. In section D.2 of the MR, the “value of monitored parameter” is not reported as desired frequency of registered monitoring plan. 7. In section D.2 of the MR, the “monitoring equipment” is not provided the complete details of all energy meters used during current monitoring period and also calibration details of respective meter also not provided. 8. In section D.2 of the MR, the “Measuring/reading/recording frequency”, the given information is not clear, please further clarify the same. 9. In section E.6 of the MR, the justification of difference of actual emission reduction and estimated emission reduction value is not complete, please provide the same. 					
Project participant response					Date : 06/02/2019
<ol style="list-style-type: none"> 1. A reference to document ER CDM has been added to MR to indicate how emission reductions where calculated. 2. Details of monitoring period and achieved emission reductions have been included in section A.1. 3. In Section C, Figure 1 the location of the meters is shown in relation to the turbines (34.5 kV Meters, 230 kV ION Meters). Additionally it is referenced that the meters (ION 8650) are located at the substation (interconnection facility to the grid). 4. In section D.1 the value applied have been added to fixed ex ante parameters. 5. In section D.2. the source of data has been corrected to property reference documents. 6. In section D.2. the value of monitored parameter has been added. 7. In section D.2. the monitoring equipment information has been corrected and calibration documents have been provided. Annex 4. Calibration Certificate of Energy Meters 8. In section D.2. the measuring/reading/recording frequency has been clarified. 9. In section E.6 justification of difference has been expanded. 					
Documentation provided by project participant					
Revised Monitoring Report Version 02 dated 05/02/2019					
Emission Reduction Sheet Version 01 dated 05/02/2019					
DOE assessment					Date :16/02/2019

The PP has made appropriate corrections and modifications in revised MR and ER sheet, same has been verified as below:

1. The PP has provided the calculation of estimated emission reduction value (i.e. 291,654 tCO₂) for current monitoring period and the same was checked and found to be correct , hence accepted.
2. The PP has provided the details of monitoring period and actual achieve emission reduction for the current monitoring period section A.1 of revised MR. This was found to be correct and hence accepted.
3. The PP has provided the line diagram that shown the location of monitoring equipment (i.e. Energy Meters) in section C of revised MR. This was checked and found to be correct as per site visit observations, hence accepted.
4. The PP has provided the correct value for each parameter in the “value applied” in section D.1 of revised MR. The values are verified and found to be consistent and correct with document verified during site visit, hence accepted.
5. The PP has corrected the “source of data” in section D.2 of the revised MR by providing the correct reference of document; this is found to be correct, hence accepted.
6. The PP has corrected monitoring frequency of monitored parameter in “value of monitored parameter” of section D.2 of the revised MR. This is found to be correct as per registered monitoring plan, hence accepted. ,
7. The PP has provided details of energy meters and its details of calibration in “monitoring equipment” of section D.2 of the revised MR. This was checked and found to be consistent and correct with calibration certificates as verified during site visit ; hence accepted.
8. The PP has provided the correct information “Measuring/reading/recording frequency” of section D.2 of the revised MR. The is found to be correct as monitoring report template requirement, hence accepted.
9. The PP has provided the justification of difference of actual emission reduction and estimated emission reduction value in section E.6 of the revised MR. This is found to be correct and hence accepted.

Based on review of above response and corrected documents (MR and ER sheet), verification team confirmed that all issues have been sufficiently corrected in submitted revised MR and ER sheet by the PP. Hence, accepted. CAR#1 closed.

CAR ID	02	Section no.	E.7	Date : 26/09/2019
Description of CAR				

1. The PP is requested to provide information for each equipment used to monitor each parameter, including details on accuracy class, and calibration information (frequency, date of calibration and validity), if applicable as per the registered monitoring plan (paragraph 259 and 260(b) of PS for PA version 2).
2. The following calibration certificate has been verified against annual calibration requirement mentioned in the PDD.

		2015	2016	2017	2018	
Meter 1	MW-1505A64 6-02	29/05/2015	15/03/2016	17/03/2017	27/03/2018	Monitoring Period 19/04/2015 to 31/07/2018
Meter 2	MW-1505A65 2-02					

Further, the PP is requested to clarify following information:

- There is delay in calibration from 14/03/2017 to 16/03/2017, but no error factor applied in ER calculations, or is not traceable.
- There is delay in calibration from 16/03/2018 to 26/03/2018, but no error factor applied in ER calculations, or is not traceable.
- Similarly, there is no information provided for the date of installation of the meters and previous calibration by manufacturer or similar evidences to be provided for the period 19/04/2015 to 29/05/2015, or maximum permissible error factor to be applied in ER calculations.

Project participant response						Date : 31/10/2019
<ol style="list-style-type: none"> 1. The information for each equipment used to monitor the parameters has been included in MR. 2. An error facto has been applied to the ER calculations from 14/03/2017 to 16/03/2017 and is detailed in MR. 3. An error facto has been applied to the ER calculations from 16/03/2018 to 26/03/2018 and is detailed in MR. 4. The information of the installation meters has been provided – The original meters for the project were: MW-1412A961-01 / MW – 1412A962-01, the first calibration by manufacturer is found as annex Equipment Calibration by PowerLogic. The project requested the use of these meters for project start with the commitment to change meters within the next months in accordance to the new regulation, this was approved in annex Meter Request. New meters were installed: MW-1505A646-02 / MW-1505A652-02, in accordance to the regulation and the first calibration by manufacturer is found in annex 2015 (document sent originally), calibration was also done by PowerLogic. The meters were later reviewed by the AMM in July (July2015_Installation revision new meters) but due to lack of wind at the time they were later reviewed in August (August2015_Installation revision new meters) and were approved. Annexes: Equipment Calibration, Meter Request, July2015_Installation revision new meters & August2015_Installation revision new meters. 						
Documentation provided by project participant						
Revised Monitoring Report Version 03 dated 11/11/2019						
Emission Reduction Sheet Version 02 dated 11/11/2019						
DOE assessment						Date: 18/11/2019
Based on review of above response and corrected documents (MR and ER sheet), verification team confirmed that all issues have been sufficiently corrected in submitted revised MR and ER sheet by the PP. Hence, accepted. CAR#1 closed.						

Table 4. FAR from this verification

FAR ID	N/A	Section No.	N/A	Date: N/A
Description of FAR				
N/A				

Project participant response	Date: N/A
N/A	
Documentation provided by project participant	
N/A	
DOE assessment	Date: N/A
N/A	

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Document information

<i>Version</i>	<i>Date</i>	<i>Description</i>
03.0	31 May 2019	Revision to: <ul style="list-style-type: none">• Ensure consistency with version 02.0 of the “CDM validation and verification standard for project activities” (CDM-EB93-A05-STAN);• Make structural and editorial improvements.
02.1	11 January 2018	Editorial revision to correct the numbering of appendices in the instructions.
02.0	31 October 2017	Revision to align with the requirements of the “CDM validation and verification standard for project activities” (version 01.0).
01.0	23 March 2015	Initial publication.
Decision Class: Regulatory Document Type: Form Business Function: Issuance Keywords: project activities, verifying and certifying		