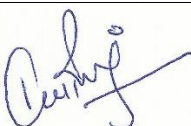




**Verification and certification report form for
CDM project activities
(Version 04.0)**

Complete this form in accordance with the instructions attached at the end of this form.

BASIC INFORMATION

Title and UNFCCC reference number of the project activity	Electricity generation from renewable sources - Windfarms Santa Clara I, Santa Clara II, Santa Clara III, Santa Clara IV, Santa Clara V, Santa Clara VI and Eurus VI UNFCCC Ref #: 5495		
Scale of the project activity	<input checked="" type="checkbox"/> Large-scale <input type="checkbox"/> Small-scale		
Version number of the verification and certification report	1		
Completion date of the verification and certification report	22/06/2021		
Monitoring period number and duration of this monitoring period	3 rd Monitoring period 01/01/2016 to 31/12/2016 (both days included)		
Version number of the monitoring report to which this report applies	2.1		
Crediting period of the project activity corresponding to this monitoring period	Type: Fixed Start date: 01/03/2014, Length: 10 years		
Project participants	CPFL Geração de Energia S/A		
Host Party	Brazil		
Applied methodologies and standardized baselines	ACM0002 ver. 12.1.0 - Consolidated baseline methodology for grid-connected electricity generation from renewable sources		
Mandatory sectoral scopes	1 : Energy industries (renewable - / non-renewable sources)		
Conditional sectoral scopes, if applicable	N/A		
Estimated amount of GHG emission reductions or GHG removals for this monitoring duration in the registered PDD	368,161 tCO ₂ e		
Certified amount of GHG emission reductions or GHG removals for this monitoring period	Amount before 1 January 2013	Amount from 1 January 2013 until 31 December 2020	Amount from 1 January 2021
	0 tCO ₂ e	307,031 tCO ₂ e	0 tCO ₂ e
Name and UNFCCC reference number of the DOE	Earthood Services Private Limited (ESPL) (ref E- 0066)		
Name, position and signature of the approver of the verification and certification report			

	Dr. Kaviraj Singh Managing Director
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SECTION A. Executive summary

Brief summary of the project activity

The project activity consists in the installation and operation of a windfarm Complex called Santa Clara, constituted by 7 wind farms totaling 188 MW. The seven wind farms are Santa Clara I, II, III, IV, V, VI and Eurus VI. They are located in Parazinho city, in the State of Rio Grande do Norte, Brazil.

The plants are connected to the Brazilian National Interconnected System (SIN) by João Câmara II Substation. The project activity reduces the GHG emissions through dispatching GHG-free electricity to the Brazilian National Interconnected System.

The operation start date of the 1st turbine in the Wind Power Complex is on 01/03/2014^{/12/} (Liberation of operation by ANEEL).

Scope of verification

CPFL Geração de Energia S/A has contracted Earthood Services Private Limited to conduct the verification and certification of emission reductions reported for the CDM project activity “Electricity generation from renewable sources - Windfarms Santa Clara I, Santa Clara II, Santa Clara III, Santa Clara IV, Santa Clara V, Santa Clara VI and Eurus VI”, for the period from 01/01/2016 to 31/12/2016 (including both days).

The verification is the periodic independent review and ex post determination of the monitored reductions in GHG emissions that have occurred due to the registered CDM project activity during the defined monitoring period.

The scope of the verification is to establish/verify that:

- the project activity has been implemented and operated as per the registered PDD or any approved revised PDD, 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 in accordance with the latest applicable version of the completeness checklist for requests for issuance of CERs, verifiable, and in accordance with applicable CDM requirements;
- the actual monitoring systems and procedures comply with the monitoring systems and procedures described in the monitoring plan, any revised approved monitoring plan, the approved methodology including applicable tool(s) and/or, where applicable, the approved standardized baseline;
- the data recorded and stored as per the monitoring methodology including applicable tool(s) and, where applicable, the standardized baseline.

Verification process

The verification process involved following:

- Contract with CPFL Geração de Energia S/A for the scope of verification;
- publication of monitoring report;
- desk review;
- issuance of verification findings;
- reporting, calculation checks, QA/QC and resolution of findings;
- issuance of draft verification report;
- independent technical review of the project documentation;
- issuance of the final verification report;
- submission of the request for issuance, as appropriate.

Conclusion

Earthood Services Private Limited has performed the verification of the CDM PA “Electricity generation from renewable sources - Windfarms Santa Clara I, Santa Clara II, Santa Clara III, Santa Clara IV, Santa Clara V, Santa Clara VI and Eurus VI”, having UNFCCC Ref. Number 5495 for the monitoring period from 01/01/2016 to 31/12/2016”. The verification team has confirmed the implementation of the project as per description in the

revised PDD, the monitoring plan of the PDD and the application of the monitoring methodology (ACM0002. ver. 12.1.0). In addition, it was confirmed that the monitoring system is in place and the emission reductions are calculated without material misstatements.

The verified emission reductions amount to 307,031 tCO₂e in the above mentioned monitoring period.

The verification team concluded that the registered CDM PA complies with all relevant CDM procedures/standards/guidance and therefore request for issuance is being submitted in accordance with the CDM procedures.

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	OR	Sebben	Marcelo	Verifit	Y	N	Y	Y
2.	Local Expert	OR	Sebben	Marcelo	Verifit	Y	N	Y	Y
3.	Methodological Expert	OR	Sebben	Marcelo	Verifit	Y	N	Y	Y
4.	Technical Expert	OR	Sebben	Marcelo	Verifit	Y	N	Y	Y

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	IR	Garg	Shreya	Central Office
2.	Technical Expert	IR	Garg	Shreya	Central Office
3.	Approver	IR	Singh	Kaviraj	Central Office

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.	Download of raw data not to be duly transferred to ER calculation spreadsheet	Low	The hourly raw data is directly downloaded from the system and then transferred to ER calculations spreadsheet	No sampling has been carried out as 100% of data has been checked.
2.	Download of cross-check data	Low	The cross-check data is directly obtained from official sources and therefore the risk is very low	No sampling has been carried out as 100% of data has been checked.

3.	Download of EF data	Low	The EF is directly calculated by Brazilian DNA and therefore the risk of transferring the data is very low	No sampling has been carried out as 100% of data has been checked.
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C.2. Consideration of materiality in conducting the verification

The concept of materiality has not been applied during this verification as no sampling was conducted. All data (100%) could be checked during the verification process.

SECTION D. Means of verification

D.1. Desk/document review

A desk review was conducted by the verification team that included:

- a review of the data and information presented to verify its completeness;
- a review of the registered monitoring plan, the monitoring methodology including applicable tool(s) and, where applicable, the applied standardized baseline, paying particular attention to the frequency of measurements, the quality of metering equipment including calibration requirements, and the quality assurance and quality control procedures;
- an evaluation of 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/evidences reviewed is included as Appendix 3.

D.2. On-site inspection

Duration of on-site inspection: DD/MM/YYYY to DD/MM/YYYY				
No.	Activity performed on-site	Site location	Date	Team member
1.	-	-	-	-

The on-site inspection was not conducted during this verification process due to the COVID-19 pandemic. The alternative means of conducting an audit process have been considered in accordance with Board recommendation that allows for the period between 23/03/2020 to 31/12/2021, to deviate from the requirements in paragraphs 30 and 339 of the VVS-PA. The assessment for the applicability of this recommendation is kept in the DOE database.

Instead, the DOE used other standard auditing techniques for verification, as referred to in sections 7.1.3 and 9.1.3 of the VVS-PA as follows:

- Confirmation from PP that no changes occurred in the installed technology, monitoring plan, measuring equipment, obtained from interview with PPs and previous on-site visit carried out by the same TL (as explained below)*
- Current pictures of main equipment^{20/}.
- Document review
- Real time Videoconference with demonstration of installed electricity meters and with directly demonstration of raw data extraction of electricity generation.

*Moreover, it is important to point out that the PRC (change of starting date of CP) has been submitted and approved on 31/05/2020 with on-site visit being conducted on 10/03/2020 by the same

team leader of this process. Thus, it also corroborates that the information provided is reliable and no changes occurred in the PA, in accordance with the current valid version of PDD^{09/}.

These audit techniques used have been considered sufficient and credible by the verification team for the purpose of the present validation.

D.3. Interviews

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Moraes	Arthur	Carbotrader	19/05/2021	- General aspects - CDM aspects - EF calculation ER calculation	Marcelo Sebben
2.	Prado	Guilherme	CPFL	19/05/2021	Extraction of electricity raw data Operation and Maintenance of Power plant	Marcelo Sebben
3.	De Souza	Lucas	CPFL	19/05/2021	Raw data extraction and cross-check measures	Marcelo Sebben
4.	Bustamante	Danielle	CPFL	19/05/2021	Raw data extraction and cross-check measures	Marcelo Sebben
5.	Fonseca	Bruno	CPFL	11/06/2021	Operation and Maintenance of Power plant and metering	Marcelo Sebben
6.	Silva	Arnaldo	CPFL	11/06/2021	Operation and Maintenance of Power plant and metering	Marcelo Sebben

D.4. Sampling approach

Not applicable as no sampling has been used during the verification

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	-	-	-
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	-	-	-
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	-	-	-

SECTION E. Verification findings

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

Means of verification	The MR was crosschecked with the CDM-MR-FORM template available at the UNFCCC website and with the instructions for filling it out. No inconsistencies were found.
Findings	N/A
Conclusion	A valid version of the verification template (CDM-MR-FORM – version 08.0) available at the UNFCCC website has been used. It has been filled out in accordance with the “Instructions for filling out the monitoring report form”.

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

Means of verification	The validation report ^{/12/} and the previous verification report ^{/13/} have been reviewed and it was observed that no FARs were open during these phases.
Findings	N/A
Conclusion	No FARs were opened during validation and validation of PRC processes.

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

Means of verification

The project activity consists the installation and operation of a windfarm Complex called Santa Clara, constituted by 7 wind farms totaling 188 MW. The seven wind farms are Santa Clara I, II, III, IV, V, VI and Eurus VI. They are located in Parazinho city, in the State of Rio Grande do Norte, Brazil.

The geographical location of each wind farm is described below:

Wind farm	Latitude	Longitude
Santa Clara I	-5.2611	-35.8982
Santa Clara II	-5.2529	35. 9091
Santa Clara III	5.2716	-35.9169
Santa Clara IV	-5.2393	-35.9077
Santa Clara V	-5.2647	-35.9270
Santa Clara VI	-5.2374	-35.9160
Eurus VI	-5.2352	-35.9368

The technical description of the plants are described below:

Wind farm	Number of turbines	Turbine/generator model	Installed capacity
Santa Clara I	15 (2 MW each)	Turbine: - Enercon E82 E2 - Power: 2 MW - Wind class IEC IIA - Speed: 6 to 18 rpm Generator: - Enercon	30 MW
Santa Clara II	15 (2 MW each)		30 MW
Santa Clara III	15 (2 MW each)		30 MW
Santa Clara IV	15 (2 MW each)		30 MW
Santa Clara V	15 (2 MW each)		30 MW
Santa Clara VI	15 (2 MW each)		30 MW

	Eurus VI	4 (2 MW each)	- Synchronous	8 MW
			- Power: 2000kW	
	Total	94		188 MW
	<p>The plants are connected to the Brazilian National Interconnected System (SIN) by João Câmara II Substation.</p> <p>The project activity reduces the GHG emissions through dispatching GHG-free electricity to the Brazilian National Interconnected System.</p> <p>The operation start date of the 1st turbine in the Wind Power Complex is on 01/03/2014^{14/} (Operation release by ANEEL).</p>			
Findings	N/A			
Conclusion	<p>The verification team confirms that all physical features (technology, project equipment, and monitoring and metering equipment) of the wind power complex were in place and are in accordance with the PDD.</p> <p>The wind farms are operated as per PDD.</p>			

E.4. Post-registration changes

E.4.1. Temporary deviations from the registered monitoring plan, applied methodologies, standardized baselines or other methodological regulatory documents¹

No temporary deviations have been identified for the present monitoring period.

E.4.2. Corrections

Small corrections were carried out prior to this verification process. The corrections referred mainly to the update of the estimated ERs due to the change of starting date of CP and were approved under ref # PRC-5495-001 on 31/05/2020. No corrections were due during this monitoring period.

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

Change of starting date of crediting period was carried out prior this verification process. The start date was postponed from 01/07/2012 to 01/03/2014 due to delays in implementation of PA and were approved under ref # PRC-5495-001 on 31/05/2020.

E.4.4. Inclusion of a monitoring plan

Not applicable as monitoring plan is part of the registered PDD.

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

Not applicable as no permanent changes from the registered monitoring plan or from monitoring methodology have been submitted to the UNFCCC prior and/or during the current monitoring period

E.4.6. Changes to the project design

Not applicable as no change of project design is being requested during the current monitoring period

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

Not applied as this project does not consist in afforestation and reforestation PAs.

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 MP of the registered PDD was reviewed against the monitoring requirements of the applied methodology and applicable tools.</p> <p>The methodologies and tools have been duly applied in the monitoring of this project activity.</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).

Findings	N/A
Conclusion	It has been observed that the MP of the project activity is totally in accordance with the applied methodology (ACM0002 ver. 12.1.0 / ¹⁰ / - Consolidated baseline methodology for grid-connected electricity generation from renewable sources) and applicable TOOL07 - Tool to calculate the emission factor for an electricity system - v 02.0/ ¹¹ /.

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	According to the registered PDD/ ⁰⁹ /, the following parameters are fixed for the crediting period: - W _{OM} - Weighting of operating margin emissions factor: 75%. - W _{BM} - Weighting of build margin emissions factor: 25%
Findings	N/A
Conclusion	All fixed parameters were included in the MR section D.1 and are in accordance with registered PDD.

E.6.2. Data and parameters monitored

Means of verification	All monitored parameters listed in MR used to calculate baseline GHG emissions of the PA were checked against the registered/revised PDD. No project or leakage emissions are due as per applied methodology and registered PDD. The parameters of the registered PDD were verified in order to check its consistency with CDM tools and guidance to ER calculations.	
	1. <i>EG_{facility,y}: Quantity of net electricity generation supplied by the project plant to the grid in year y</i>	
	Criteria/Requirements	Assessment Observation
	Measuring / Reading / Recording frequency	The parameter is continuously read, measured and recorded every one hour automatically by four meters (2 main and 2 backup) in the João Camara II Substation. The raw data was available for download in the Company's system.
	Is the measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology?	Yes
	Monitoring equipment	04 (four) bi-directional electricity meters (main and backup). 1- Main P3 - S/N: MN-1206A056-01. 2- Backup P3 - S/N: MN-1206A053-01 3- Main P4 -S/N: MN-1206A054-01. 4- Backup P4 - S/N: MN-1206A055-01
	Is the accuracy of the monitoring equipment as stated in the monitoring plan? If the monitoring plan does not specify the accuracy of the monitoring equipment, does the accuracy of the monitoring equipment comply with local/national standards, or as per the manufacturer's specification?	The accuracy of the equipment is 0.2 as required by Brazilian Regulations/ ¹⁵ /
	Is the accuracy valid for the entire measuring range or do different	Accuracy class is valid for the entire range.

	accuracy levels apply to different measuring ranges?	
	Calibration frequency / interval	5 years as per National resolution ^{/15/}
	Is the calibration interval in line with the monitoring plan and/or methodology? If the monitoring plan does not specify the frequency of calibration, is the selected frequency in accordance with the local/national standards, or as per the manufacturer's specifications?	The calibration interval is in line with the monitoring plan as it is set as per national regulations ^{/15/} .
	Is the calibration of measuring equipment carried out by an accredited person or institution?	An accredited institution has carried out calibration of equipment ^{/29/} .
	Is(are) the calibration(s) valid for the entire reporting period?	Yes. The calibration is valid for the whole MP
	Is the calibration carried out for a measuring range comparable with the range for which measurements have been carried out?	Yes.
	How were the values in the monitoring report verified?	The values of the MR were verified through the comparison between the raw data ^{/16/} and values applied in the Excel spreadsheets.
	If applicable, has the reported data been crosschecked with other available data?	The monitored values are to be reviewed by crosschecking 100% of the data with reports from CliqCCEE which is the Government Chamber of Electricity Commercialization (Official Source) ^{/17/} . The conservative values were used in the ER Calculations spreadsheet. It is important to point out that in section D.2 of the MR, the cross-check value for the electricity generated has been reported as it refers to the most conservative data and, consequently, to the data used in the ER calculations.
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Data management system was found to be reliable and appropriate. All data is in accordance with evidences provided.
	In case project participants have temporarily not monitored the parameter, has either i) a deviation been approved by the CDM EB or ii) has the parameter been estimated as stipulated by paragraph 231 b) the CDM Project Standard for PA-version 02.0?	Not applied
2. $EF_{grid,CM,y}$: Combined margin CO2 emission factor for the project electricity system in year y		
Criteria/Requirements	Assessment Observation	
Measuring / Reading / Recording frequency	The parameter is calculated yearly based on EF_{OM-DD} and EF_{BM} provided by	

	the Brazilian DNA ^{/18/} as per registered PDD and applied version of the TOOL07 "Tool for calculating emission factor for an electricity system".
Is the measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology?	Yes
Monitoring equipment	N/A
Is the accuracy of the monitoring equipment as stated in the monitoring plan? If the monitoring plan does not specify the accuracy of the monitoring equipment, does the accuracy of the monitoring equipment comply with local/national standards, or as per the manufacturer's specification?	N/A
Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges?	N/A
Calibration frequency / interval	N/A
Is the calibration interval in line with the monitoring plan and/or methodology? If the monitoring plan does not specify the frequency of calibration, is the selected frequency in accordance with the local/national standards, or as per the manufacturer's specifications?	N/A
Is the calibration of measuring equipment carried out by an accredited person or institution?	N/A
Is(are) the calibration(s) valid for the entire reporting period?	N/A
Is the calibration carried out for a measuring range comparable with the range for which measurements have been carried out?	N/A
How were the values in the monitoring report verified?	The calculation is checked in the ER calculations spreadsheet and their parameters EF _{OM-DD,y} and EF _{BM,y} are checked in the Brazilian DNA website ^{/18/} .
If applicable, has the reported data been crosschecked with other available data?	Not applied as no cross-check is done in this parameter. It is determined based on publicly available data.
Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Correct data has been transferred from DNA database to the ER calculation spreadsheet. Correct QA/QC procedures are in place.
In case project participants have temporarily not monitored the parameter, has either i) a deviation been approved by the CDM EB or ii) has the parameter been estimated as stipulated by paragraph 231 b)	N/A

	the CDM Project Standard for PA–version 02.0?	
	3. $EF_{grid,OM-DD,y}$: CO₂ Operating margin emission factor of the grid, in a year y	
	Criteria/Requirements	Assessment Observation
	Measuring / Reading / Recording frequency	The parameter was calculated by the Brazilian DNA. The values are considered correct by verification team and can be seen in the ER calculations spreadsheet ^{108/} .
	Is the measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology?	Yes
	Monitoring equipment	N/A
	Is the accuracy of the monitoring equipment as stated in the monitoring plan? If the monitoring plan does not specify the accuracy of the monitoring equipment, does the accuracy of the monitoring equipment comply with local/national standards, or as per the manufacturer's specification?	N/A
	Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges?	N/A
	Calibration frequency / interval	N/A
	Is the calibration interval in line with the monitoring plan and/or methodology? If the monitoring plan does not specify the frequency of calibration, is the selected frequency in accordance with the local/national standards, or as per the manufacturer's specifications?	N/A
	Is the calibration of measuring equipment carried out by an accredited person or institution?	N/A
	Is(are) the calibration(s) valid for the entire reporting period?	N/A
	Is the calibration carried out for a measuring range comparable with the range for which measurements have been carried out?	N/A
	How were the values in the monitoring report verified?	The data was directly checked in the DNA website ^{118/} and then compared to the information provided in the MR. Information is consistent.
	If applicable, has the reported data been crosschecked with other available data?	Not applied as no cross-check is done in this parameter. It is determined based on publicly available data.
Does the data management ensure correct transfer of data and reporting of emission reductions	Correct data has been transferred from DNA database to the ER calculation	

	and are necessary QA/QC processes in place?	spreadsheet. Correct QA/QC procedures are in place.
	In case project participants have temporarily not monitored the parameter, has either i) a deviation been approved by the CDM EB or ii) has the parameter been estimated as stipulated by paragraph 231 b) the CDM Project Standard for PA-version 02.0?	N/A
	4. $EF_{grid,BM,y}$: CO2 Build margin emission factor of the grid, in a year y	
	Criteria/Requirements	Assessment Observation
	Measuring / Reading / Recording frequency	According the registered PDD the parameter is determined ex-post. Thus, as per applied tool for calculating emission factor for an electricity system, information on power units built until 2016 (which is the monitored year) have been used for determination of the parameter. The Brazilian DNA is the responsible entity for providing the yearly EF_{BM} value.
	Is the measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology?	Yes
	Monitoring equipment	N/A
	Is the accuracy of the monitoring equipment as stated in the monitoring plan? If the monitoring plan does not specify the accuracy of the monitoring equipment, does the accuracy of the monitoring equipment comply with local/national standards, or as per the manufacturer's specification?	N/A
	Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges?	N/A
	Calibration frequency / interval	N/A
Is the calibration interval in line with the monitoring plan and/or methodology? If the monitoring plan does not specify the frequency of calibration, is the selected frequency in accordance with the local/national standards, or as per the manufacturer's specifications?	N/A	
Is the calibration of measuring equipment carried out by an accredited person or institution?	N/A	
Is(are) the calibration(s) valid for the entire reporting period?	N/A	

	Is the calibration carried out for a measuring range comparable with the range for which measurements have been carried out?	N/A
	How were the values in the monitoring report verified?	The data was directly checked in the DNA website ^{/18/} and compared to the data used in the ER calculations.
	If applicable, has the reported data been crosschecked with other available data?	Not applied as no cross-check is done in this parameter. It is determined based on calculated values by the Brazilian DNA.
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Data management system was found to be reliable and appropriate.
	In case project participants have temporarily not monitored the parameter, has either i) a deviation been approved by the CDM EB or ii) has the parameter been estimated as stipulated by paragraph 231 b) the CDM Project Standard for PA-version 02.0?	N/A
Findings	N/A	
Conclusion	All parameters were determined in a conservative manner and in accordance with requirements of applied tools, methodology and monitoring plan. The data used for the parameter EG _{facility} were the one measured by meters installed in the grid connection point (Joao Camara II) and cross-checked with values from CCEE ^{/17/} (official source). The smaller value between both sources was applied, which is a conservative measure as less ERs were achieved with it.	

E.6.3. Implementation of sampling plan

Means of verification	The project participants have not applied sampling approach in the monitoring period. All parameters were fully checked as described in the monitoring plan during the operational period of the wind farms. Documents were checked and interviews with PP's representatives and personnel were performed in order check this information.
Findings	-
Conclusion	No sampling plan was used.

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

Means of verification	Manuals of equipment, national regulations registered monitoring plan and calibration certificates were checked in order to verify the compliance and frequency of the calibrations/inspections requirements of measuring equipment. In this project activity, the only equipment used are electricity meters that measure the parameters EG _{facility} . These equipment comprehend the following electricity meters: two main and two backup for all wind farm complex (comprehending the 7 wind farms belonging to this PA):		
	Parameter	Electricity meter S/N	Calibration dates (frequency required 5 years ^{/15/})
	EG _{facility,y}	Main P3 S/N: MN-1206A056-01	07/08/2015
		Backup P3 S/N: MN-1206A053-01	07/08/2015

	Main P4 S/N: MN-1206A054-01	07/08/2015	No
	Backup P4 S/N: MN-1206A055-01	07/08/2015	No
	The calibration certificates that cover the whole monitoring period were provided to the verification team. Therefore, no delays have been observed		
Findings	N/A		
Conclusion	<p>Calibration certificates were provided for the whole monitoring period to the verification team.</p> <p>Therefore, the measured values were reported in the ER calculations spreadsheet. In order to be conservative, the PPs compared the measured electricity values to the cross-check values and applied the smallest value to the calculations. The smallest values correspond to the cross-check values that correspond to the official data obtained from Commercialization Chamber (CCEE).</p> <p>Moreover, regarding the calibration frequency stated in the MR, it is important to point out that the calibration frequency of 5 years is regulated by National Regulation ^{/15/} and therefore, the frequency complies with applied TOOL05, which defines the quality procedures for the parameter EG_{facility} when it is said: "The project participants do not need to apply for post registration changes(...) when Changing the calibration frequency of meter within the range stipulated in the national standards or requirements set by the meter supplier or requirements set by the grid operators"</p> <p>Therefore, the measure is considered accurate and conservative by the verification team.</p>		

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 calculations of baseline emission have been done in accordance with registered monitoring plan and applied methodology. The equation used is the follow:</p> $BE_y = EF_{grid,CM,y} \times EG_y$ <p>Where: BE_y = Baseline emissions in the year y $EF_{grid,CM,y}$ = Combined Margin Emission factor of the grid in the year y EG_y = Net electricity of the all wind farms delivered to grid in the year y (hourly value aggregated for each year)</p> <p>The Combined margin emission factor of the grid ($EF_{grid,CM,y}$) was calculated as follows:</p> $EF_{grid,CM,y} = EF_{OM} \times w_{OM} + EF_{BM} \times w_{BM}$ <p>Where w_{OM} and w_{BM} are the Operating margin weight is fixed as 0.75 and the build margin weight is fixed as 0.25 as per applied tool for calculating emission factor for an electricity system.</p> <p>For the determination of $EF_{OM-DD,y}$ and $EF_{BM,y}$ the PP applied the parameters provided by the Brazilian DNA^{/18/}. Therefore, the grid emission factor has been determined in accordance with TOOL07 requirements and with registered PDD.</p>
Findings	N/A
Conclusion	<p>The verification team confirms that:</p> <ol style="list-style-type: none"> the monitored data was available in accordance with the registered monitoring plan for the operational period of the wind farm complex; the reported data were crosschecked, as prescribed in the revised approved PDD, with the relevant supporting and were found consistent; appropriate methods and formulae for calculating baseline GHG emissions have been followed;

	<p>d. the assumptions, emission factors and default values that were applied in the calculations are correct and evidenced;</p> <p>e. the calculations are transparent, consistent, correct and complete.</p> <p>Baseline emissions for the whole monitoring period are:</p> <p style="text-align: center;">$BE = 307,031 \text{ tCO}_2\text{e}$</p>
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E.8.2. Calculation of project GHG emissions or actual net anthropogenic GHG removals by sinks

Means of verification	According to the applied methodology, no project emissions are due for wind energy generation. Therefore $PE = 0$ for this PA.
Findings	N/A
Conclusion	No project emissions are to be accounted for wind energy generation as per applied methodology. Therefore $PE = 0$. The monitoring report correctly states this situation.

E.8.3. Calculation of leakage GHG emissions

Means of verification	As this correspond to a greenfield project and no energy is generated from transferred equipment, leakage are considered to be equal to zero. $LE_y = 0$
Findings	
Conclusion	No leakage emissions are to be accounted

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

Means of verification	<p>The emission reductions from the project activity are based on baseline emission only.</p> <p>The calculations presented at the final MR and corresponding ER calculation spreadsheet were found to be appropriate.</p> <p>The verification team confirms an audit trail that contains the evidences and records of validated figures.</p>
Findings	-
Conclusion	<p>The verification team confirms that appropriate methods and formulae for calculating baseline GHG emissions reductions have been followed.</p> <p>The summary table has been correctly presented at the MR and the figures are correct and justified.</p> <p>$ER = BE - PE - LE$</p> <p>$PE = LE = 0$</p> <p>Thus,</p> <p style="text-align: center;">$ER = BE = 307,031 \text{ tCO}_2\text{e}$</p>

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

Means of verification	The actual emission reductions were checked against the estimates of the registered PDD.
Findings	N/A
Conclusion	The comparison of actual values of the monitoring period with the estimates in the registered PDD is properly presented at the MR.

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

Means of verification	The verification team has compared the actual ER calculated and the estimated ERs reported in the PDD for the same period and it was observed that the actual ERs obtained are lower than the estimated values.
Findings	N/A
Conclusion	The actual ERs are lower than the estimated emission reductions reported in the revised PDD, thus, no justification is needed

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	Earthood Services Private Limited is able to certify that the emission reductions from the CDM project activity “Electricity generation from renewable sources - Windfarms Santa Clara I, Santa Clara II, Santa Clara III, Santa Clara IV, Santa Clara V, Santa Clara VI and Eurus VI” – Ref. 5495 for the monitoring period from 01/01/2016 to 31/12/2016 (including both days) is as follows: Verified and certified emission reductions as per commitment period:	
	Commitment period	Amount
	Up to 31/12/2012 (1 st commitment period)	0 tCO ₂ e
	From 01/01/2013 until 31/12/2020	307,031 tCO ₂
	From 01/01/2021 onwards	0 tCO ₂ e
Findings	-	
Conclusion	The GHG emissions reductions have been totally generated from between 01/01/2013 and 31/12/2020	

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

Means of verification	Not applicable
Findings	-
Conclusion	The PPs have not requested the DOE to verify the sustainable development co-benefits for this project activity

E.10. Global stakeholder consultation

Means of verification	As per PCP paragraph 186, “The DOE shall make the monitoring report publicly available through a dedicated interface on the UNFCCC CDM website, at the latest 21 days prior to undertaking the on-site inspection for the verification, if to be conducted.” The MR was made publicly available on 22/04/2021 whereas the verification process was conducted from 19/05/2021, thus fulfilling the above requirement. The verification team checked the UNFCCC CDM website and observed that no comments have been made public during the comments period.
Findings	-
Conclusion	The assessment was made in accordance with VVS para. 391 and PCP paras 186 and 187. No comments were received.

SECTION F. Internal quality control

The draft verification report that is prepared by verification team is reviewed by an independent technical review team (one or more members) to confirm if the internal procedures established and implemented by ESPL were duly complied with and such opinion/conclusion is reached in an objective manner that complies with the applicable CDM rules/requirements.

The technical review team is collectively required to possess the technical expertise of all the technical area/sectoral scope to which the project activity is related. All members of technical review team are independent of the verification team.

During the technical review process, additional findings may be identified or the closed out findings may be opened, which needs to be satisfactorily resolved before the request for issuance is submitted to UNFCCC. The independent technical reviewer may either approve the report as such or reject/return the same in such case providing the comments/findings/issues that needs to be resolved by the verification team. The decision taken by the technical reviewer is final and is authorized on behalf of ESPL.

SECTION G. Verification opinion

Earthood Services Private Limited, contracted by CPFL Geração de Energia S/A, has performed the independent verification of the emission reductions for the CDM project activity “Electricity generation from renewable sources - Windfarms Santa Clara I, Santa Clara II, Santa Clara III, Santa Clara IV, Santa Clara V, Santa Clara VI and Eurus VI” – Ref.: 5495 – in Brazil, for the monitoring period from 01/01/2016 to 31/12/2016 (including both days) as reported in the Monitoring Report (public). Carbotrader Assessoria e Consultoria em

Energia EIRELI is responsible for the compilation of data in accordance with the monitoring plan and the reporting of GHG emissions reductions from the project activity.

ESPL commenced the verification based on the baseline and monitoring methodology ACM0002. ver. 12.1.0, the monitoring plan contained in the registered PDD, Monitoring Report (public).

ESPL's verification approach is based on the understanding of the risks associated with reporting of GHG emission data and the controls in place to mitigate these. ESPL planned and performed the verification by obtaining evidence and other information and explanations that ESPL considered necessary to give reasonable assurance that reported GHG emission reductions are fairly stated.

The verification team confirms that:

- the project activity was found completely implemented as per the description given in the registered PDD for the operational period of the PA; and
- the actual operation conforms to the description in the revised PDD.

SECTION H. Certification statement

Earthood Services Private Limited, contracted by CPFL Geração de Energia S/A, has performed the independent verification of the emission reductions for the CDM project activity "Electricity generation from renewable sources - Windfarms Santa Clara I, Santa Clara II, Santa Clara III, Santa Clara IV, Santa Clara V, Santa Clara VI and Eurus VI" – Ref.: 5495 – in Brazil, for the monitoring period from 01/01/2016 to 31/12/2016 (including both days) as reported in the Monitoring Report (public). Carbotrader Assessoria e Consultoria em Energia EIRELI is responsible for the compilation of data in accordance with the monitoring plan and the reporting of GHG emissions reductions from the project activity.

ESPL commenced the verification based on the baseline and monitoring methodology ACM0002. ver. 12.1.0, the monitoring plan contained in the registered PDD, Monitoring Report (public).

ESPL's verification approach is based on the understanding of the risks associated with reporting of GHG emission data and the controls in place to mitigate these. ESPL planned and performed the verification by obtaining evidence and other information and explanations that ESPL considered necessary to give reasonable assurance that reported GHG emission reductions are fairly stated.

In our opinion the GHG emissions reductions reported for the project activity for this monitoring period are fairly stated in the Monitoring Report (final). The GHG emission reductions were calculated correctly based on the baseline and monitoring methodology and the monitoring plan contained in the Registered PDD.

Earthood Services Private Limited is able to certify that the emission reductions from the CDM project activity "Electricity generation from renewable sources - Windfarms Santa Clara I, Santa Clara II, Santa Clara III, Santa Clara IV, Santa Clara V, Santa Clara VI and Eurus VI", in Brazil, for the period above mentioned is equal to:

Verified and certified emission reductions as per commitment period:

Commitment period	Amount
Up to 31/12/2012 (1 st commitment period)	0 tCO ₂ e
From 01/01/2013 to 31/12/2020	307,031 tCO ₂ e
From 01/01/2021 onwards	0 tCO ₂ e
Total	307,031 tCO₂e

Appendix 1. Abbreviations

Abbreviations	Full texts
ABNT	Brazilian Association of Technical Regulation
ANEEL	National Agency of Electric Energy (Government agency)
BE	Baseline Emission
BM	Build Margin
CAR	Corrective Action Request
CCEE	Electric Energy Commercialization Chamber (Government Agency)
CDM	Clean Development Mechanism
CL	Clarification Request
CM	Combined Margin
CME	Coordinating/Managing Entity
CO ₂	Carbon dioxide
CO ₂ e	Carbon dioxide equivalent
CP	Crediting Period
DNA	Designated National Authority
DOE	Designated Operational Entity
EB	Executive Board
EIA	Environmental Impact Assessment
EPE	Energy Research Company of the Ministry of Mines and Energy – Brazil
ESPL	Earthood Services Private Limited
FAR	Forward Action Request
GHG	Green House Gas
GSC/GSP	Global Stakeholder Consultation Process
GW	Giga Watt
GWh	Giga Watt hour
IPCC	Intergovernmental Panel on Climate Change
KP	Kyoto Protocol
kW	kilo Watt
kWh	kilo Watt hour
LoA	Letter of Approval/Authorization
MoC	Modalities of Communication
MoV	Means of Validation
MP	Monitoring Plan
MW	Mega Watt
MWh	Mega Watt hour
N ₂ O	Nitrous Oxide
OM	Operating Margin
ONS	National System Operator (from Portuguese – Operador Nacional do Sistema)
PA	Project Activity
PCP	Project Cycle Procedure
PDD	Project Design Document
PE	Project Emission
PP	Project Participant
PS	Project Standard
tCO ₂ e	Tonnes of Carbon di oxide equivalent
UNFCCC	United Nations Framework Convention on Climate Change
VT	Verification Team
VVS	Validation and Verification Standard

Appendix 2. Competence of team members and technical reviewers

Competence Statement			
Name	Marcelo Sebben		
Country	Brazil		
Education	M.Sc. (Sustainable Energy System) B. Eng. (Chemical Engineering)		
Experience	+12.5 Years		
Field	Chemical process industry, CDM, Energy, Climate Change		
Approved Roles			
Team Leader	Yes		
Validator	Yes		
Verifier	Yes		
Methodology Expert	Yes (ACM0001, ACM0002, ACM0006, AM0065, AMS ID, AMS-I.E, AMS-I.C, AM0026, AMS-I.A, AMS-I.F, AMS-III.H, AMS-III.I. GS: Ecologically Sound Fuel Switch to Biomass with Reduced Energy Requirement, GS: Technologies and Practices to Displace Decentralized Thermal Energy Consumption)		
Local expert	Brazil, Chile, Honduras, Colombia		
Financial Expert	Yes		
Technical Reviewer	No		
TA Expert	Yes (TA 1.1, 1.2, 4.1, 5.1, 9.1, 13.1)		
Reviewed by	Shreya Garg	Date	05/03/2020
Approved by	Anshika Gupta	Date	05/03/2020

Competence Statement			
Name	Shreya Garg		
Country	India		
Education	M.Sc. (Climate Science & Policy), TERI University		
Experience	6 Years +		
Field	Climate Change		
Approved Roles			
Team Leader	YES		
Validator	YES		
Verifier	YES		
Methodology Expert	AMS.I.A., AMS.I.C., AMS.I.D., AMS.I.F., AMS.II.D., AMS.II.G., AMS.II.J., AMS.III.AV., ACM0002, ACM0012		
Local expert	YES (India)		
Financial Expert	NO		
Technical Reviewer	YES		
TA Expert	YES (TA 1.2, TA 3.1)		
Reviewed by	Abhishek Mahawar	Date	01/03/2018
Approved by	Ashok Gautam	Date	01/03/2018

Appendix 3. Documents reviewed or referenced

No.	Author	Title	References to the document	Provider
1.	UNFCCC	Standard: CDM PS for PA	version 02.0	Others
2.	UNFCCC	Standard: CDM PCP for PA	version 02.0	Others
3.	UNFCCC	Standard: CDM VVS for PA	version 02.0	Others
4.	UNFCCC	Form: CDM-MR-FORM	version 8.0	Others
5.	PP	Monitoring Report (draft)	version 1.1 – 19/04/2021	PP
6.	PP	Monitoring Report (revised/final)	Version 2 – 11/06/2021 Version 2.1 – 22/06/2021 (final)	PP
7.	PP	<u>ER Spreadsheet (draft)</u> - CERs_5495_2016	Rev 1	PP
8.	PP	ER Spreadsheet (revised/final) - CERs_5495_2016	Rev 2	PP
9.	PP	Registered PDD (current valid version valid as of 31/05/2020)	version 4 – 03/04/2020	Others
10.	UNFCCC	<u>Methodology</u> : ACM0002: “Consolidated baseline methodology for grid-connected electricity generation from renewable sources”	version 12.1.0	Others
11.	UNFCCC	- TOOL07 Tool to calculate the emission factor for an electricity system	version 02.0	Others
12.	DNV	Validation Report “Electricity generation from renewable sources - Windfarms Santa Clara I, Santa Clara II, Santa Clara III, Santa Clara IV, Santa Clara V, Santa Clara VI and Eurus VI” issued by DNV, report # 2010-1771	Revision 2 – 14/05/2012	
13.	ESPL	Last Verification Report from project activity “Electricity generation from renewable sources - Windfarms Santa Clara I, Santa Clara II, Santa Clara III, Santa Clara IV, Santa Clara V, Santa Clara VI and Eurus VI” issued by ESPL	Version 01.1 – 21/08/2020	Other
14.	ANEEL	<u>Start date of Operation</u> : - ANEEL dispatch #500 – liberation of units for start of operation from the Wind Complex Santa Clara from 01/03/2014	28/02/2014	
15.	ONS (National Electric System Operator)	- Procedure 12.2 from ONS (National Electric System Operator) regulating the		

		accuracy class of the electricity meters - Regulation (ONS Grid Procedure, submodule 12.3) stating 5 years calibration frequency is to be applied to electricity meters		
16.	PP	- Reports of electricity generated by the project activity (E-Meter) for all period for the complex		
17.	CCEE	<p>INFOMERCADO reports – Official source of electric data used for cross-check electricity measurements</p> <ul style="list-style-type: none"> - Select “SELECIONE O BOLETIM” - Select “Infomercado Mensal” - Select year - Download “Infomercado Dados Individuais 2016_rev1”, tab Usinas 	https://www.ccee.org.br/portal/faces/pages_publico/o-que-fazemos/infomercado?_afLoop=198254581209649&_adf.ctrl-state=eq8sm8sup_107#!%40%40%3F_afLoop%3D198254581209649%26_adf.ctrl-state%3Deq8sm8sup_111 Accessed in 19/05/2021	
18.	MCTIC	- Data provided by the Brazilian DNA website regarding the EF _{OM-DD,h} and EF _{BM,y}	https://antigo.mctic.gov.br/mctic/opencms/ciencia/SEPED/clima/textogeral/emissao_despacho.html	
19.	Prolux	<p><u>Calibration Certificates:</u></p> <p><u>Electricity Meter:</u></p> <p>Main P3:</p> <ul style="list-style-type: none"> - Serial # MN-1206A054-01 ION8800 Schneider Electric <ul style="list-style-type: none"> o Certificate issued by Prolux # 2015-452 calibrated on 07/08/2015 <p>Backup P3:</p> <ul style="list-style-type: none"> - Serial # MN-1206A053-01 ION8800 Schneider Electric <ul style="list-style-type: none"> o Certificate issued by Prolux # 2015-453 calibrated on 07/08/2015 <p>Main P4:</p> <ul style="list-style-type: none"> - Serial # MN-1206A056-01 ION8800 Schneider Electric <ul style="list-style-type: none"> o Certificate issued by Prolux # 2015-451 calibrated on 07/08/2015 <p>Backup P4:</p> <ul style="list-style-type: none"> - Serial # MN-1206A055-01 ION8800 Schneider Electric <ul style="list-style-type: none"> o Certificate issued by Prolux # 2015-454 calibrated on 07/08/2015 	<p>Valid until 06/08/2020</p> <p>Valid until 06/08/2020</p> <p>Valid until 06/08/2020</p> <p>Valid until 06/08/2020</p>	

20.	IDEMA – Institute of Sustainable Development and Environment of State of Rio Grande do Norte	<u>Operational licensing</u> 1. Santa Clara I to VI: - Operational license 2016-095904/TEC/RLO-0016 2. EURUS VI: - operational license # 2017-111330/TEC/RLS-0216	Valid until 25/08/2021 Valid until 05/12/2023	PP
21.	PP	<u>Technical description:</u> 1. Pictures of plant 2. Pictures wind turbines	05/2021 05/2021	PP
22.	ANEEL/PP	<u>Installed capacity evidences</u> Technical specification sheet of all wind parks		
23.	PP	<u>Trainings and Duties of Personnel:</u> - Lucas de Souza <ul style="list-style-type: none"> Structure of Electric Sector and CCEE 	19/05/2021	PP
24.	-	DNA of Brazil	https://antigo.mctic.gov.br/mctic/opencms/ciencia/SEPED/clima/cimgc/Comissao_Interministerial_de_Mudanca_Globa_l_do_Clima_CIMGC.html	Other
25.	ANEEL	ANEEL – National Agency of Electric Energy	www.aneel.gov.br	
26.	IPCC	IPCC publications	www.ipcc-nggip.iges.or.jp	Other
27.	UNFCCC	UNFCCC	http://cdm.unfccc.int	Other
28.	UNFCCC	Standard: CDM PS for PA	version 02.0	Others

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

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

FAR ID	xx	Section no.	E.2	Date: DD/MM/YYYY
Description of FAR				
N/A				
Project participant response				Date: DD/MM/YYYY
Documentation provided by project participant				
DOE assessment				Date: DD/MM/YYYY

Table 2. CL from this verification

CL ID	xx	Section no.		Date: DD/MM/YYYY
Description of CL				
N/A				
Project participant response				Date: DD/MM/YYYY
Documentation provided by project participant				
DOE assessment				Date: DD/MM/YYYY

Table 3. CAR from this verification

CAR ID	xx	Section no.		Date : DD/MM/YYYY
Description of CAR				
N/A				
Project participant response				Date : DD/MM/YYYY
Documentation provided by project participant				
DOE assessment				Date: DD/MM/YYYY

Table 4. FAR from this verification

FAR ID	xx	Section No.		Date: DD/MM/YYYY
Description of FAR				
N/A				
Project participant response				Date: DD/MM/YYYY
Documentation provided by project participant				
DOE assessment				Date: DD/MM/YYYY

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Document information

<i>Version</i>	<i>Date</i>	<i>Description</i>
04.0	6 April 2021	Revision to: <ul style="list-style-type: none">• Reflect the “Clarification: Regulatory requirements under temporary measures for post-2020 cases” (CDM-EB109-A01-CLAR).
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		