



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

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	Grid-connected Solar PV project in Mérina Dakhar (UNPA Reference Number: 10368)
Scale of the project activity	<input checked="" type="checkbox"/> Large-scale <input type="checkbox"/> Small-scale
Version number of the verification and certification report	Version 43
Completion date of the verification and certification report	2815/0744/20198
Monitoring period number and duration of this monitoring period	Monitoring Period Number: 1 Duration of the monitoring period: 20/11/2017 – 30/06/2018 ¹
Version number of the monitoring report to which this report applies	Version 1. 53
Crediting period of the project activity corresponding to this monitoring period	20/11/2017 – 19/11/2024 ²
Project participants	Ten Mérina Ndakhar SA
Host Party	Senegal
Applied methodologies and standardized baselines	ACM0002 version 17 - Grid-connected electricity generation from renewable sources
Mandatory sectoral scopes	Sectoral Scope 01
Conditional sectoral scopes, if applicable	NA
Estimated amount of GHG emission reductions or GHG removals for this monitoring duration in the registered PDD	21,163 tCO ₂ e
Certified amount of GHG emission reductions or GHG removals for this monitoring period	20,768 tCO ₂ e
Name and UNFCCC reference number of the DOE	Carbon Check (India) Private Ltd. (E-0052)
Name, position and signature of the approver of the verification and certification report	Vikash Kumar Singh, Compliance Officer

¹ The monitoring period has been changed from the webhosted version (01/10/2017 – 30/06/2018) to 20/11/2017 – 30/06/2018 as the crediting period was changed by the PP.

² The crediting period has been changed from the webhosted version (01/10/2017 – 30/09/2024) to 20/11/2017 – 19/11/2024 as the crediting period was changed by the PP.

Vikash L. Singh

SECTION A. Executive summary

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Introduction:

The Project Participant, Ten Mérina Ndakhar SA, has commissioned the DOE, Carbon Check (India) Private Ltd. (CC IPL) to perform an independent verification of the CDM Project Activity “Grid-connected Solar PV project in Mérina Dakhar” (UNPA ref no. 10368) in Senegal (hereafter referred to as “Project Activity”). The project is a 29.49 MW solar PV plant located in Mérina Dakhar, department of Tivouane, region of Thiès, Senegal, producing electricity and supplying to the grid. The electricity generated by the project replaces the grid electricity generated from fossil fuels and reduce GHG emissions for the duration of the project. This project consists of 92,160 modules of 320 W each, connected to the national grid with a total installed capacity of 29.49 MW. The solar PV power plant covers an area of 82.9 hectares. This report summarises the findings of the verification of the project, performed on the basis of paragraph 62 of the CDM Modalities & Procedures, as well as criteria given to provide for consistent project operations, monitoring and reporting and the subsequent decisions by the CDM Executive Board. Verification is required for all registered CDM project activities intending to confirm their achieved emission reductions and proceed with request for issuance of CERs. This report contains the findings and resolutions from the verification and a certification statement for the certified emission reductions.

Objective:

Verification is the periodic independent review and ex-post determination of both quantitative and qualitative information by a Designated Operational Entity (DOE) of the monitored reductions in GHG emissions that have occurred as a result of the registered CDM project activity during a defined monitoring period.

Certification is the written assurance by a DOE that, during a specific period in time, a project activity achieved the emission reductions as verified.

The objective of this verification was to verify and certify emission reductions reported for the project activity for the period from 20/11/2017 to 30/06/2018 (including both the days).

The purpose of verification is to review the monitoring results and verify that the monitoring methodology was implemented according to the monitoring plan and monitoring data and used to confirm the reductions in anthropogenic emissions by sources is sufficient, definitive and presented in a concise and transparent manner. CC IPL's objective is to perform a thorough, independent assessment of the registered project activity.

In particular, the monitoring plan, monitoring report and the project's compliance with relevant UNFCCC and host Party criteria are verified in order to confirm that the component project/s has/have been implemented in accordance with the previously registered/~~included component~~ project design and conservative assumptions, as documented. It is also confirmed if the monitoring plan is in compliance with the registered/revised approved PDD/B04/ and the approved monitoring methodology/B02/.

Scope:

The scope of the verification is:

- To verify the project implementation and operation with respect to the registered/revised approved PDD/B04/
- To verify the implemented monitoring plan with the registered PDD or approved revised PDD/B04/ and the applied baseline and monitoring methodology.
- To verify that the actual monitoring systems and procedures are in compliance with the monitoring systems and procedures described in the monitoring plan.
- To evaluate the GHG emission reduction data and express a conclusion with a reasonable level of assurance about whether the reported GHG emission reduction data is free from material misstatement.
- To verify that reported GHG emission data is sufficiently supported by evidence.

The verification shall ensure that the reported emission reductions are complete and accurate in order to be certified.

The verification comprises a review of the monitoring report over the monitoring period from ~~from~~ 20/11/2017 to 30/06/2018 and based on the registered/revised approved PDD/B04/ in part of the monitoring parameters and monitoring plan, emission reduction calculation spreadsheet, monitoring methodology and all related evidence provided by project participant.

On-site visit and stakeholders' interviews are also performed as part of the verification process.

The verification team assigned by the DOE concludes that the PDD /B04/ and the Monitoring report /02/, meet all relevant requirements of the UNFCCC for CDM project activities including article 12 of the Kyoto Protocol and paragraph 62 of CDM M& P, the modalities and procedures for CDM (Marrakesh Accords) and the subsequent decisions by the COP/MOP and CDM Executive Board. The verification has been conducted in-line with the CDM VVS for project activities, version 021.0 /B01-1/.

The project activity was correctly implemented according to selected monitoring methodology, monitoring plan and the registered/revised approved PDD /B04/. The monitoring system was installed, maintained in a proper manner, while collected monitoring data allowed for the verification of the amount of achieved GHG emission reductions. Through the review and on site visit the verification team confirms that the project activity has resulted in the 20,768 t CO₂e emission reductions during the first monitoring period.

CC IPL as a DOE is therefore pleased to issue a positive verification opinion expressed in the attached Certification statement.

Four (04) Corrective Action Requests (CAR) and Two (02) Clarification Actions (CL) had been raised and satisfactorily closed during the verification process. Two (02) Forward Action Requests (FARs) had been raised during the validation which have been closed during the verification. No Forward Action Requests (FARs) have been raised during the first periodic verification.

SECTION B. Verification team, technical reviewer and approver

B.1. Verification team member

No.	Role	└ >	Last name	First name	Affiliation	Involvement in
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					(e.g. name of central or other office of DOE or outsourced entity)	Desk/document review	On-site inspection	Interviews	Verification findings
1.	Team Leader/ Technical Expert/ Verifier	IR	Dimri	Anubhav	CC IPL	X	X	X	X
2.	Local Expert	EI	Mar	Papa Moussa	CC IPL		X	X	

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	Singh	Vikash Kumar	CC IPL
2.	Approver	IR	Singh	Vikash Kumar	CC IPL

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.	<i>Human error in the quantification of emissions</i>	<i>Low</i>	<p><i>According to the monitoring plan and the Monitoring Report, there are QA/QC procedures applied for monitoring parameters and data management/information flow.</i></p> <p><i>Calculation spread-sheets are used to determine the emissions reductions. Further data collected are through calibrated meters and automated system.</i></p>	<p><i>Verification team of CC IPL has focused on assessment of the following:</i></p> <ul style="list-style-type: none"> <i>• Procedure of raw data collection/ Monitoring procedures.</i> <i>• Data & information flow with a special focus on any material mistake</i> <i>• Calculation spreadsheets.</i> <i>• Procedures/QA/QC established to detect and correct any error or omission in monitoring parameters.</i> <i>• Quality control for monitored parameters and metering systems.</i> <p><i>Complete verification (100 % data) of all the monitoring records (measurement records, invoices and the calibration certificates) was done by the verification team and compared</i></p>

				<i>with the values indicated in the emission reduction spread-sheet. No risk identified.</i>
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C.2. Consideration of materiality in conducting the verification

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The Project is a large-scale CDM project activity achieving total emission reductions of less than 300,000 tons of CO₂e per year; as such, a 2 per cent materiality threshold is applied /B01-1/. Accordingly, the materiality threshold is 416 tons of CO₂e. The materiality thresholds have been calculated in accordance with the § 32~~69~~²⁴ (c) of CDM VVS for project activities, version 0~~2~~⁴ /B01-1/.

In line with Guidelines for Application of materiality in verifications /B06/, a reasonable level of assurance is defined for the verification of the project by complete verification of all the monitoring records (measurement records, invoices and the calibration certificates) was done by the verification team and compared with the values indicated in the emission reduction spread-sheet.

Some mistakes were identified and subsequently findings were raised. These findings are detailed in Appendix 4 and they were successfully closed. Therefore, related identified mistakes as listed in findings in Appendix 4 to this report have been determined to be immaterial. Thus, it is confirmed that there are no material errors, omissions or misstatements and a reasonable level of assurance is established.

SECTION D. Means of verification

D.1. Desk/document review

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The verification was performed primarily based on the review of the Monitoring report /01/ and the supporting documentation. This process included review of data and information presented to verify their completeness and review of the monitoring plan/B04/ and monitoring methodology/B02/. Documents reviewed or referenced during the verification are listed in Appendix 3 below.

D.2. On-site inspection

Duration of on-site inspection: 07/08/2018 to 08/08/2018				
No.	Activity performed on-site	Site location	Date	Team member
1.	An assessment of the implementation and operation of the registered project activity as per the registered/ <u>revised</u> <u>approved</u> PDD/B04/.	Merina Dakhar solar site, Thiess region, Senegal	07/08/2018 to 08/08/2018	Anubhav Dimri, Papa Moussa Mar
2.	A review of information flows for generating, aggregating and reporting the monitoring parameters.	Merina Dakhar solar site, Thiess region, Senegal	07/08/2018 to 08/08/2018	Anubhav Dimri, Papa Moussa Mar
3.	Interviews with the relevant personnel to determine whether the operational and data collection procedures are implemented in accordance with the monitoring plan in the PDD/B04/.	Merina Dakhar solar site, Thiess region, Senegal	07/08/2018 to 08/08/2018	Anubhav Dimri, Papa Moussa Mar
4.	A cross check between information provided in the monitoring report and data from other sources such as plant logbooks, inventories, purchase records or similar data sources.	Merina Dakhar solar site, Thiess region, Senegal	07/08/2018 to 08/08/2018	Anubhav Dimri, Papa Moussa Mar
5.	A check of the monitoring equipment including calibration performance and observations of monitoring practices against the requirements of the PDD/B04/ and the selected methodology and corresponding tool(s), where applicable.	Merina Dakhar solar site, Thiess region, Senegal	07/08/2018 to 08/08/2018	Anubhav Dimri, Papa Moussa Mar

6.	A review of calculations and assumptions made in determining the GHG data and emission reductions.	Merina Dakhar solar site, Thiess region, Senegal	07/08/2018 to 08/08/2018	Anubhav Dimri, Papa Moussa Mar
7.	An identification of quality control and quality assurance procedures in place to prevent or identify and correct any errors or omissions in the reported monitoring parameters.	Merina Dakhar solar site, Thiess region, Senegal	07/08/2018 to 08/08/2018	Anubhav Dimri, Papa Moussa Mar

D.3. Interviews

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Thiam	Amadou	Eiffage	07/08/2018	Project technical specification and operation including metering and QA/QC, Project operation, Quality Assurance – Management and operating system	Anubhav Dimri, Papa Moussa Mar
2.	Gueye	Momar Talla	Eiffage	07/08/2018	Monitoring equipment and metering	Anubhav Dimri, Papa Moussa Mar
3.	Sy	Amadou	Meridiam	07/08/2018	Financials and project milestones	Anubhav Dimri, Papa Moussa Mar
4.	Fall	Assane	Previsieur Teacher Lyce'e Kelle School	07/08/2018	Project operation	Anubhav Dimri, Papa Moussa Mar
5.	Ndour	Sat Sall	Surveillant General Supervisor of Kelle Lyce'e School	07/08/2018	Project operation	Anubhav Dimri, Papa Moussa Mar
6.	Mayr	Sebastian	Aera Group	07/08/2018	Project operation, CER calculation and completeness of monitoring report, Quality Assurance – Management and operating system, compliance of monitoring plan with monitoring methodology and PDD.	Anubhav Dimri, Papa Moussa Mar
7.	Diakhate	Yera	Lyce'e Kelle School	07/08/2018	Project operation	Anubhav Dimri, Papa Moussa Mar
8.	Ba	Abdourahmane	Cabinet EES	07/08/2018	Environmental and Social aspects of the project activity,	Anubhav Dimri, Papa Moussa Mar

					Sustainable Development benefits	
9.	Wade	Mahgone	Village Representative	07/08/2018	Sustainable Development benefits, Gold Standard Parameters	Anubhav Dimri, Papa Moussa Mar
10.	Diakhate	Mor	Village Chief	07/08/2018	Sustainable Development benefits, Gold Standard Parameters	Anubhav Dimri, Papa Moussa Mar
11.	Sow	Colo	Senelec	08/08/2018	Metering and invoicing, Grid connections and capacity, calibration procedure requirements	Anubhav Dimri, Papa Moussa Mar

D.4. Sampling approach

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Not Applicable

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	00	01	00
Compliance of the project implementation and operation with the registered PDD	00	01	00
Post-registration changes	01	00	00
Compliance of the registered monitoring plan with the methodologies including applicable tools and standardized baselines	00	00	00
Compliance of monitoring activities with the registered monitoring plan	01	00	00
Compliance with the calibration frequency requirements for measuring instruments	00	01	00
Assessment of data and calculation of emission reductions or net removals	00	01	00
Assessment of reported sustainable development co-benefits	00	00	00
Global stakeholder consultation	00	00	00
Others (please specify)	00	00	00
Total	02	04	00

SECTION E. Verification findings

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

Means of verification	Document Review, Interview
Findings	CAR 01 had been raised in this regard and has been resolved.
Conclusion	CC IPL had made the version 1.1, dated 06/07/2018 of the Monitoring report /01/, covering the monitoring period from 20/11/2017 to 30/06/2018 (both days inclusive) publicly available on 17/07/2018 through its dedicated interface on the UNFCCC website /B05/. The monitoring period has been changed from the webhosted version (01/10/2017 – 30/06/2018 24) to 20/11/2017 – 30/06/2018 as the crediting period was changed by the PP in accordance with the para 235 of the PS for the project activities, version 0 2 <u>4</u> /B01-2/. The MR /02/ uses the latest form

	<p>available at UNFCCC website. The MR /02/ is complete and meets all the requirements of the Instructions for filling out the monitoring report form version 06.0 /B03/ and CDM project standard version 024.0 /B01-2/.</p> <p>This confirms compliance with the §314, §315, §352 and §353§355 and §356 of CDM VVS for project activities, version 024.0 /B01-1/.</p>
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E.2. Remaining forward action requests from validation and/or previous verifications

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Yes, there are two forward action requests from the validation and the FARs have been listed in the Appendix 4 of the Verification Report. Both the Forward Action Requests (FARs) have been closed during the first verification. This is the first periodic verification of the project activity and thus FARs from previous verifications is not applicable.

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

Means of verification	Document Review, Interview														
Findings	CAR 02 had been raised in this regard and has been resolved.														
Conclusion	<p>The verification team determined the conformity of the actual project activity and its operation with the registered/ <u>revised approved</u> PDD /B04/ and the monitoring plan contained therein. CCIPL has, by means of a desk review and on-site visit, assessed that all physical features of the project activity proposed in the <u>registered/ revised approved</u> PDD /B04/ are in place, and that the project participants have operated the CDM project activity as per the validated PDD /B04/.</p> <p>CC IPL by means of an on-site inspection and document review, assessed that all the features (technology, project equipment and monitoring) of the registered/ <u>revised approved</u> PDD /B04/ are in place and that the project participants have operated the project as per the registered/ <u>revised approved</u> PDD /B04/.</p> <p>The verification team has reviewed the grid synchronisation certificates /06/, Power Purchase Agreements (PPA) /07/, continuous electricity generation records /08/ and the electricity sales invoices/05/. The implemented project activity's physical features viz., MW capacity, make, model and its operation, location, grid connectivity are as per the registered/ <u>revised approved</u> PDD /B04/, thus comply with requirement of § 383 to 384 of VVS for the project activities (version <u>24.0</u>)/B01-1/.</p> <p>The project activity is a grid connected (connected to SENELEC) 29.49 MW solar PV power plant located in Mérina Dakhar, department of Tivouane, region of Thiès, Senegal. The solar power plant covers an area of 82.9 hectares and is equipped with 92,160 modules of 320 W each, connected to the national grid. The PV modules are provided by JinkoSolar manufacturer: modules JKM320PP-72 of poly silver frame solar panel. The configuration of the solar panel/09-2/ is provided below:</p> <table border="1" style="width: 100%;"> <tr> <td>Manufacturer</td> <td>JinkoSolar</td> </tr> <tr> <td>Model</td> <td>JKM320PP-72</td> </tr> <tr> <td>Type of cells</td> <td>Poly Silver Frame</td> </tr> <tr> <td>Peak Power (W)</td> <td>320</td> </tr> <tr> <td>Rated voltage (Vmpp) STC (V)</td> <td>37.4</td> </tr> <tr> <td>Rated current (Impp) STC (A)</td> <td>8.56</td> </tr> <tr> <td>Dimension</td> <td>1956 x 992 x 40 (mm)</td> </tr> </table> <p>The date of the synchronisation of the project activity/07/ with the national grid of Senegal, SENELEC is 20/11/2017.</p> <p>The start date of the crediting period is 20/11/2017. A change of start date of the crediting period has been done for the project activity from 01/10/2017 to 20/11/2017, the change has been made on the interface yet in accordance with the para 235 of the PS for the project activities, version <u>024</u>/B01-2/. It was confirmed through the document review and during the site visit that the PP had</p>	Manufacturer	JinkoSolar	Model	JKM320PP-72	Type of cells	Poly Silver Frame	Peak Power (W)	320	Rated voltage (Vmpp) STC (V)	37.4	Rated current (Impp) STC (A)	8.56	Dimension	1956 x 992 x 40 (mm)
Manufacturer	JinkoSolar														
Model	JKM320PP-72														
Type of cells	Poly Silver Frame														
Peak Power (W)	320														
Rated voltage (Vmpp) STC (V)	37.4														
Rated current (Impp) STC (A)	8.56														
Dimension	1956 x 992 x 40 (mm)														

operated the proposed CDM project activity as per the registered/ revised approved PDD/B04/ during the current monitoring period. The start date of the monitoring period is also 20/11/2017. PP has changed the start date of the monitoring period from 01/10/2017 to 20/11/2017 due to the change in the start date of the crediting period.

Furthermore, the verification team, through OSV, interview with representatives of the PP and review of the grid synchronization certificate /06/ confirms that the registered CDM project activity was implemented and monitored as per the registered/ revised approved PDD /B04/. This fulfills the requirement contained in §359 (a) of the VVS for the project activities (version 24).

CCIPL's verification team considers the project implementation to be complete and accurate.

In summary, the monitoring period is reasonable and the operation of the project activity is in accordance with the registered/ revised approved PDD /B04/. The verification team took cognizance of §256~~7~~ of the CDM Project Standard (version 024.0)/B01-2/ and §341 (b)(i), §357, §358 and §359~~§357-§359~~ of the CDM VVS (version 024.0)/B01-1/.

E.4. Post-registration changes

E.4.1. Temporary deviations from the registered monitoring plan, applied methodologies, standardized baselines or other methodological regulatory documents³

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Not Applicable.

E.4.2. Corrections

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Not Applicable.

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

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CL01 had been raised in this regard and has been resolved. The start date of the crediting period is 20/11/2017. A change of start date of the crediting period has been done for the project activity from 01/10/2017 to 20/11/2017, the change has been made on the interface yet in accordance with the para 235 of the PS for the project activities, version 024/B01-2/. The change has been made in accordance with the para 127(b) and 128 of the Project Cycle Procedure, version 024/B01-3/. The change does not require approval by the Board of the change but shall involve notification to the secretariat, by e-mail through a dedicated e-mail address, of the change.

E.4.4. Inclusion of a monitoring plan

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Not Applicable.

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

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Not Applicable. The following permanent changes to the registered monitoring plan have been approved by the Executive Board on 2 July 2019 (PRC-10368-002): Update of situation, number, maintenance and testing and calibration requirements of MV electricity meters.

³ 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).

The PRC was done in response to the issues raised by the UNFCCC during the Information and Reporting Check.

E.4.6. Changes to the project design

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Not Applicable.

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

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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	Document Review, Interview
Findings	No findings have been raised on this section of the VR.
Conclusion	<p>The verification team has checked the actual monitoring plan against the registered/ <u>revised approved</u> —monitoring plan/B04/ and monitoring methodology/B02/ and applicable tools. Furthermore, the verification team has checked monitoring system during the onsite inspection by means of comparison with the information given in the monitoring plan and monitoring methodology. The monitoring plan is completely in accordance with the approved methodology applied by the registered/ <u>revised approved</u> PDD/B04/.</p> <p>All the parameters need to be monitored and corresponding monitoring approach have been discussed in the monitoring plan in the registered/ <u>revised approved</u> PDD/B04/ and QA/QC procedure has been stipulated. <u>The monitoring plan was revised during the verification in response to the Information and Reporting Check findings. The prior approval track PRC was approved on 02/07/2019 (PRC-10368-002: Update of situation, number, maintenance and testing and calibration requirements of MV electricity meters).</u></p> <p>The verification team confirms that the monitoring plan complies with the applied methodology and the monitoring system and all applied procedures are completely in compliance to the latest approved monitoring plan and the methodology ACM0002 version 17.0 /B02/.</p> <p>The verification team took cognizance of §360, §361 and §362 of CDM VVS for project activities, version 024 /B01-1/.</p>

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	Document Review, Interview																
Findings	No findings have been raised on this section of the VR.																
Conclusion	<p>The verification team has determined whether the registered/ <u>revised approved</u> monitoring plan in the PDD /B04/ has been properly implemented and followed by the PP and whether all parameters fixed ex-ante for emission reduction calculation are as per the registered/ <u>revised approved</u> PDD /B04/. The verification team’s assessment of each data and parameter fixed ex-ante is provided below:</p> <table border="1"> <thead> <tr> <th>Parameter</th> <th>Description</th> <th>Value</th> <th>Unit</th> <th>Source</th> <th>Assessment</th> </tr> </thead> <tbody> <tr> <td>EF_{CO2,i,y}</td> <td>CO₂ emission factor of fuel type i used in power unit m in year y</td> <td>Refer to the Excel sheet of the registered ex-ante ER calculation</td> <td>t CO₂/ GJ</td> <td>IPCC default values</td> <td>The parameter is used for the ex-ante calculation of the emission factor for the project activity. The emission factor is fixed for the 1st renewable crediting period</td> </tr> </tbody> </table>					Parameter	Description	Value	Unit	Source	Assessment	EF _{CO2,i,y}	CO ₂ emission factor of fuel type i used in power unit m in year y	Refer to the Excel sheet of the registered ex-ante ER calculation	t CO ₂ / GJ	IPCC default values	The parameter is used for the ex-ante calculation of the emission factor for the project activity. The emission factor is fixed for the 1 st renewable crediting period
Parameter	Description	Value	Unit	Source	Assessment												
EF _{CO2,i,y}	CO ₂ emission factor of fuel type i used in power unit m in year y	Refer to the Excel sheet of the registered ex-ante ER calculation	t CO ₂ / GJ	IPCC default values	The parameter is used for the ex-ante calculation of the emission factor for the project activity. The emission factor is fixed for the 1 st renewable crediting period												

						and shall be revised at the renewal of each crediting period. The value is consistent with registered/ revised approved PDD/B04/ and fixed ex-ante for the project activity.
	NCV _{i,y}	Net calorific value (energy content) of fuel type i in year y	Refer to the Excel sheet of the registered ex-ante ER calculation	GJ/m ³ or volume unit	All NCV values have been provided by the national power utility (SENELEC)	The parameter is used for the ex-ante calculation of the emission factor for the project activity. The emission factor is fixed for the 1 st renewable crediting period and shall be revised at the renewal of each crediting period. The value is consistent with registered/ revised approved PDD/B04/ and fixed ex-ante for the project activity.
	EF _{grid,CM,y}	Combined margin CO ₂ emission factor for grid connected power generation in year y calculated using the latest version of the "Tool to calculate the emission factor for an electricity system"	0.6798	tCO ₂ /MWh	As per data provided by Senelec	The emission factor is fixed for the 1 st renewable crediting period and shall be revised at the renewal of each crediting period. The value is consistent with registered/ revised approved PDD/B04/ and fixed ex-ante for the project activity.
	EF _{grid,OM,y}	Operating Margin CO ₂ emission factor for grid connected power generation in year y calculated using the latest version of the "Tool to calculate the emission factor for an electricity system"	0.6795	tCO ₂ /MWh	As per data provided by Senelec	The parameter is used for the ex-ante calculation of the emission factor for the project activity. The emission factor is fixed for the 1 st renewable crediting period and shall be revised at the renewal of each crediting period. The value is consistent with registered/ revised approved PDD/B04/ and fixed ex-ante for the project activity.

	EF _{grid, BM, y}	Build Margin CO ₂ emission factor for grid connected power generation in year y calculated using the latest version of the "Tool to calculate the emission factor for an electricity system"	0.6808	tCO ₂ /MWh	As per data provided by Senelec	The parameter is used for the ex-ante calculation of the emission factor for the project activity. The emission factor is fixed for the 1 st renewable crediting period and shall be revised at the renewal of each crediting period. The value is consistent with registered/ <u>revised approved</u> PDD/B04/ and fixed ex-ante for the project activity.
	FC _{i, m, y}	Amount of fuel type i consumed by power unit m in year y	Refer to the Excel sheet of the registered ex-ante ER calculation	Mass or volume unit	As per data provided by Senelec	The parameter is used for the ex-ante calculation of the emission factor for the project activity. The emission factor is fixed for the 1 st renewable crediting period and shall be revised at the renewal of each crediting period. The value is consistent with registered/ <u>revised approved</u> PDD/B04/ and fixed ex-ante for the project activity.
	EG _{m, y}	Net electricity generated by power plant/unit m, k or n (or in the project electricity system in case of EGy) in year y or hour h	Refer to the Excel sheet of the registered ex-ante ER calculation	MWh	For grid-connected plants, data are provided by the SENELEC. For off-grid power plants, "the value of 10 per cent of the total electricity generation by grid power plants in the electricity system" is used for the purpose of the operating margin determination ; "The value of 10 per cent of the electricity generation by grid power	The parameter is used for the ex-ante calculation of the emission factor for the project activity. The emission factor is fixed for the 1 st renewable crediting period and shall be revised at the renewal of each crediting period. The value is consistent with the registered/ <u>revised approved</u> PDD/B04/ and fixed ex-ante for the project activity.

					plants included in the sample group as per Step 5" is used for the purpose of the build margin determination .	
	$\eta_{m,y}$	Average net energy conversion efficiency of power unit m or k in year y	37.50% for natural gas steam turbine for new units (after 2000).	-	Among the 3 options below: a) Documented manufacturer 's specifications (if the efficiency of the plant is not significantly increased through retrofits or rehabilitation s); or b) For grid power plants: data from the utility, the dispatch center or official records if it can be deemed reliable; or c) The default values provided in the table below in appendix 1 (if available for the type of power plant) Option c) is chosen because data for option a) and b) are not available.	The parameter is used for the ex-ante calculation of the emission factor for the project activity. The emission factor is fixed for the 1 st renewable crediting period and shall be revised at the renewal of each crediting period. The value is consistent with the registered/ <u>revised approved</u> PDD/B04/ and fixed ex-ante for the project activity.
	The percentage share of total installed capacity of grid-connected solar PV	The percentage share of total installed capacity of grid-connected solar PV in the total installed grid connected power generation capacity in the host country	0.05%	%	Senelec data and governmental communications	The parameter is required for additionality demonstration at the time of validation and has been provided in accordance with the para 31 (a) of the methodology, ACM002, version 17/B02/. The value is consistent with registered/ <u>revised approved</u>

						PDD/B04/ and fixed ex-ante for the project activity.
	The total installed capacity of solar PV	The total installed capacity of the grid-connected solar PV in the host country	44.03 MW (at the time of PDD submission for registration)	MW	Senelec data and governmental communications	The parameter is required for additionality demonstration at the time of validation and has been provided in accordance with the para 31 (b) of the methodology, ACM0002, version 17/B02/. The value is consistent with registered/ revised approved PDD/B04/ and fixed ex-ante for the project activity.
<p>The values are consistent with the registered/ revised approved PDD/B04/ and defined fixed ex-ante during 1st renewable crediting period of the project activity. The fixed ex-ante data and parameter have been listed in the monitoring report/02/ and confirmed by the verification team as correct and consistent with that stated in the registered/ revised approved PDD/B04/. The verification team confirms that the MR/02/ and the ER calculation spreadsheet/04/ have considered the parameters fixed ex-ante correctly, no deviations have been observed.</p> <p>The verification team took cognizance of §363 of CDM VVS for project activities, version 024 /B01-1/</p>						

E.6.2. Data and parameters monitored

Means of verification	Document Review, Interview
Findings	CL 02 had been raised in this regard and has been resolved.
Conclusion	<p>The verification team confirms that the Data and parameters monitored are in compliance with the registered/ revised approved PDD /B05/. The operation and monitoring of the plant has been done by trained personnel/10/.</p> <p>All relevant monitoring parameters (as listed in section B. 7.1 of the PDD and D.2 of the MR) have been verified with regard to the appropriateness of the applied measurement / determination method, the correctness of the values applied for ER calculation, the accuracy, and applied QA/QC measures. The verification team took cognizance of §363, §364 and 367 of CDM VVS for project activities, version 024 /B01-1/.</p> <ul style="list-style-type: none"> • The monitoring has been carried out in accordance with the monitoring plan in the registered/ revised approved PDD/B04/. • All parameters required by the monitoring plan have been measured / determined without material misstatements and in line with all applicable standards and relevant requirements.

E.6.3. Implementation of sampling plan

Means of verification	Document Review
Findings	Not Applicable
Conclusion	The registered/ revised approved PDD/B04/ does not have any provision of sampling.

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

Means of verification	Document Review, Interview
Findings	CAR03 had been raised in this regard and has been resolved.

<p>Conclusion</p>	<p>The verification team has determined whether the calibration and calibration frequency procedures undertaken by PP for all measuring instruments are in conformance to the requirements stated in the registered/ <u>revised approved</u> PDD /B04/, and as per CDM Project Standard (version 024.0) /B01-2/.</p> <p>The verification team has checked the relevant monitoring equipment to verify the fulfilment of the calibration requirements/06/, especially if calibration frequency and accuracy levels are in line with the requirements of the registered/ <u>revised approved</u> PDD/B04/ and/or the applicable calibration standards. During this monitoring period, the installed measuring instruments have been operating correctly and were duly calibrated prior to installation/06-1/. There are two lines of 30 kV each installed at the site with a possibility of coupling the lines. Total 4 electricity meters have been installed on the site, 2x2 electricity meters (1 maintained by the PP, Ten Mérina Ndakhar SA and 1 by the grid operator, Senelec meter at each of the two measuring points) have been installed at the 30 kV delivery point (cells ITS1-3-5-7-9-11 & cells ITS2-4-6-8-10-12). The grid operator, Senelec installed meters have been treated as main meters as they are used for the generation of electricity sales invoice by the grid. <u>The meters are installed at the onsite delivery substation. The change in the location of the meters was made through a prior approval track PRC (PRC-10368-002: Update of situation, number, maintenance and testing and calibration requirements of MV electricity meters).</u></p> <p>The connection point for the meters and the number of meters has a small change from the registered PDD/B04/. An issuance track post registration change has been applied in this regard in accordance with the para 1(c) of the Appendix of the Project Standard for the project activities, version 01/B01-2/. The monitoring connection point for the electricity meter has been changed from the electricity meters installed at the Senelec substation to the "Two meters (1 Ten Mérina Ndakhar SA and 1 Senelec meter) will be installed at each of the two feeder lines (30 kV) to the onsite delivery point". Thus, the connection point and the number of meters installed for the feeder lines has been changed from the registered PDD/B04/.</p> <p>Issue 1 was raised during the Information and Reporting Check: "1: The DOE shall determine whether there are permanent changes to the registered monitoring plan, or whether the monitoring permanently deviates from the applied methodologies, standardized baselines, or their applied standards or tools, and, if there are, determine whether the permanent changes or the deviation comply with the relevant requirements in the CDM project standard for project activities (paragraph 296 of VVS for PA).</p> <p>The monitoring report states that "At project start, meter 1 and meter 2 were installed at the main distribution 30 kV delivery point and meter 3 and meter 4 at the substation, of which the latter two were moved to the delivery point on 13/12/2017." However, the DOE has not provided any validation opinion on this as per the paragraph 296 of VVS for PA version 402 and paragraph 239 of PS for PA version 402 as it did not validate the reason of moving two meters from substation to the delivery point on 13 December 2017."</p> <p>Response by DOE: Since, the location of the meters has been changed through a prior approval track PRC (PRC-10368-002: Update of situation, number, maintenance and testing and calibration requirements of MV electricity meters) and now the revised approved PDD/B04-2/ indicates the correct location of the meters, the raised issue is not applicable.</p> <p>Issue 2 was raised during the Information and Reporting Check: "2: The DOE shall determine whether the calibration of the measuring equipment that has an impact on the claimed GHG emission reductions or net anthropogenic GHG removals is conducted by the project participants at a frequency specified in the applied methodologies, the applied standardized baselines and/or the registered monitoring plan (paragraph 368 of VVS for PA version 1).</p>
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The DOE (p 16) verified that the calibration of the meters was done on 27 March 2017 and states that "The calibration conformity test certificate confirms that the meters were calibrated prior to installation. Since, the installed meters have not completed the required frequency of 1 years for calibration, the initial calibration is valid upto one year after installation of the meters on the site as per the registered monitoring plan". The DOE is required to provide further information on how it considered the initial calibration is valid upto one year after installation of the meters considering that 1) the monitoring plan states that "A test and calibration of the meters will be carried out after each deviation of more than +/- 0.5% but at least on a yearly basis, following manufacturer's recommendations" and 2) the monitoring period is 20 Nov 17 - 30 Jun 18 and the calibration was done on 27 March 2017."

Response by DOE: Since, the calibration requirements of the electricity meters has been revised through a prior approval track PRC (PRC-10368-002: Update of situation, number, maintenance and testing and calibration requirements of MV electricity meters) and in accordance with the revised approved PDD/B04/, no periodic calibration is required after initial calibration ex works, neither by national standards, nor by the meter supplier, nor by the grid operator. Thus, the raised issue is not applicable.

The calibration records of the meters are provided below:

Main Meter (Meter 1: ITS1-3-5-7-9-11)

Type: ITRON SL7000

Accuracy class: CI 0.2S (active); CI 2 (reactive)

Serial number: 03619296

Date of Initial calibration/06/: 27/03/2017

Verification Frequency: Annual (First verification shall be carried out once the site completes one year of operation by Senelec in accordance with the Decree 60-415 of the Department of Metrology, Senegal). The start date of the operation is 20/11/2017 and the end date of the monitoring period is 30/06/2018.

Calibration frequency: In the registered PDD/B04/, the calibration frequency had been proposed as "A test and calibration of the meters will be carried out after each deviation of more than +/- 0.5% but at least on a yearly basis, following manufacturer's recommendations." CAR 03 had been raised in this regard and has been resolved. No deviation of more than +/- 0.5% was observed during the monitoring period. PP has provided the conformity certificate from the manufacturer for the meter/06/ confirming the verification testing of the electricity meters prior to the installation at the site. The calibration conformity test certificate confirms that the meters were calibrated prior to installation. Since, the installed meters have not completed the required frequency of 1 years for calibration, the initial calibration is valid upto one year after installation of the meters on the site as per the registered monitoring plan/B04/. As the monitoring period is less than 1 year, no additional calibration/re-certification of the meters was done during the monitoring period.

Date of last calibration: 27/03/2017 (Meter was calibrated prior to installation)

Note: There is no change in the main meter during the reported monitoring period.

Main Meter (Meter 2: ITS2-4-6-8-10-12)

Type: ITRON SL7000

Accuracy class: CI 0.2S (active); CI 2 (reactive)

Serial number: 03619294

Date of Initial calibration/06/: 27/03/2017

Verification Frequency: Annual (First verification shall be carried out once the site completes one year of operation by Senelec in accordance with the Decree 60-415 of the Department of Metrology, Senegal). The start date of the operation is 20/11/2017 and the end date of the monitoring period is 30/06/2018.

Calibration frequency: In the registered PDD/B04/, the calibration frequency had been proposed as "A test and calibration of the meters will be carried out after each deviation of more than +/- 0.5% but at least on a yearly basis, following manufacturer's recommendations." CAR 03 had been raised in this regard and

has been resolved. No deviation of more than $\pm 0.5\%$ was observed during the monitoring period. PP has provided the conformity certificate from the manufacturer for the meter/06/ confirming the verification testing of the electricity meters prior to the installation at the site. The calibration conformity test certificate confirms that the meters were calibrated prior to installation. Since, the installed meters have not completed the required frequency of 1 years for calibration, the initial calibration is valid upto one year after installation of the meters on the site as per the registered monitoring plan/B04/. As the monitoring period is less than 1 year, no additional calibration/re-certification of the meters was done during the monitoring period.

Date of last calibration: 27/03/2017 (Meter was calibrated prior to installation)

Note: There is no change in the main meter during the reported monitoring period.

Backup Meter (Meter 3: ITS1-3-5-7-9-11)

Type: ITRON SL7000

Accuracy class: CI 0.2S (active); CI 2 (reactive)

Serial number: 03619295

Date of Initial calibration/06/: 27/03/2017

Verification Frequency: Annual (First verification shall be carried out once the site completes one year of operation by Senelec in accordance with the Decree 60-415 of the Department of Metrology, Senegal). The start date of the operation is 20/11/2017 and the end date of the monitoring period is 30/06/2018.

Calibration frequency: In the registered PDD/B04/, the calibration frequency had been proposed as "A test and calibration of the meters will be carried out after each deviation of more than $\pm 0.5\%$ but at least on a yearly basis, following manufacturer's recommendations." CAR 03 had been raised in this regard and has been resolved. No deviation of more than $\pm 0.5\%$ was observed during the monitoring period. PP has provided the conformity certificate from the manufacturer for the meter/06/ confirming the verification testing of the electricity meters prior to the installation at the site. The calibration conformity test certificate confirms that the meters were calibrated prior to installation. Since, the installed meters have not completed the required frequency of 1 years for calibration, the initial calibration is valid upto one year after installation of the meters on the site as per the registered monitoring plan/B04/. As the monitoring period is less than 1 year, no additional calibration/re-certification of the meters was done during the monitoring period.

Date of last calibration: 27/03/2017 (Meter was calibrated prior to installation)

Note: There is no change in the main meter during the reported monitoring period.

Backup Meter (Meter 4: ITS2-4-6-8-10-12)

Type: ITRON SL7000

Accuracy class: CI 0.2S (active); CI 2 (reactive)

Serial number: 03619293

Date of Initial calibration/06/: 27/03/2017

Verification Frequency: Annual (First verification shall be carried out once the site completes one year of operation by Senelec in accordance with the Decree 60-415 of the Department of Metrology, Senegal). The start date of the operation is 20/11/2017 and the end date of the monitoring period is 30/06/2018.

Calibration frequency: In the registered PDD/B04/, the calibration frequency had been proposed as "A test and calibration of the meters will be carried out after each deviation of more than $\pm 0.5\%$ but at least on a yearly basis, following manufacturer's recommendations." CAR 03 had been raised in this regard and has been resolved. No deviation of more than $\pm 0.5\%$ was observed during the monitoring period. PP has provided the conformity certificate from the manufacturer for the meter/06/ confirming the verification testing of the electricity meters prior to the installation at the site. The calibration conformity test certificate confirms that the meters were calibrated prior to installation. Since, the installed meters have not completed the required frequency of 1 years for calibration, the initial calibration is valid upto one year after installation of the meters on the site as per the registered monitoring plan/B04/. As the monitoring period is less than 1 year, no additional calibration/re-certification of the meters was done during the monitoring period.

Date of last calibration: 27/03/2017 (Meter was calibrated prior to installation)

	<p>Note: There is no change in the main meter during the reported monitoring period.</p> <p>The precision of the meters is 0.2 as per the PPA provisions in the registered/<u>revised approved</u> PDD/B04/. Verification team confirms that the accuracy of monitoring equipment is assured. The verification team took cognizance of <u>§ 260(b) of CDM Project Standard for project activities version 2 /B01-2/ and § 368-374, §368</u> of CDM VVS for project activities, version <u>024 /B01-1/</u>.</p>
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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	Document Review, Interview																																	
Findings	CAR04 had been raised in this regard and has been resolved.																																	
Conclusion	<p>The Baseline Emissions (BE_y) are calculated as follows: $BE_y = EG_{PJ,y} \times EF_{grid,CM,y}$ Where: BE_y = Baseline emissions in year y (t CO2/yr) $EG_{PJ,y}$ = Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the CDM project activity in year y (MWh/yr) $EF_{grid,CM,y}$ = Combined margin CO2 emission factor for grid connected power generation in year y calculated using the latest version of the “Tool to calculate the emission factor for an electricity system” (tCO2/MWh)</p> <p>Since the project activity consists in the installation of new grid-connected renewable power plant at site where no renewable power plant was operated prior to the implementation of the project activity, it verifies the case of Greenfield renewable energy power plant, option (a) whereby: $EG_{PJ,y} = EG_{facility,y}$ Where: $EG_{PJ,y}$ = Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the CDM project activity in year y (MWh/yr) $EG_{facility,y}$ = Quantity of net electricity generation supplied by the project plant/unit to the grid in year y (MWh/yr)</p> <p>The monitoring of this parameter has been done through recording of electricity (import and export) data by bi-directional electricity meters installed on the site.</p> <p>The verified values (in MWh)/11/ are provided in the table below:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Billing Month</th> <th>Period Covered</th> <th>Electricity delivered by the project activity to SENELEC (Import), MWh</th> <th>Electricity received by the project activity from SENELEC (export), MWh</th> <th>Net Electricity delivered by the project activity to SENELEC, MWh</th> </tr> </thead> <tbody> <tr> <td>November 2017</td> <td>20/11/2017 to 30/11/2017</td> <td><u>1,206.843</u>1206.843</td> <td><u>6.26</u>6.26</td> <td><u>1,2011,200.6</u>12011,200.6</td> </tr> <tr> <td>December 2018</td> <td>01/12/2017 to 31/12/2017</td> <td><u>3,911.927</u>3911.927</td> <td><u>18.518</u>18.518</td> <td><u>3,8933893.44</u>38933893.44</td> </tr> <tr> <td>January 2018</td> <td>01/01/2018 to 31/12/2018</td> <td><u>3,8423841.956</u>38423841.956</td> <td><u>15.715</u>15.715</td> <td><u>3,8263826.24</u>38263826.24</td> </tr> <tr> <td>February 2018</td> <td>01/02/2018 to 28/02/2018</td> <td><u>4,0094008.975</u>40094008.975</td> <td><u>16.416</u>16.416</td> <td><u>3,9933992.56</u>39933992.56</td> </tr> <tr> <td>March 2018</td> <td>01/03/2018 to 31/03/2018</td> <td><u>4,5784578.339</u>45784578.339</td> <td><u>17.617</u>17.617</td> <td><u>4,5614560.77</u>45614560.77</td> </tr> </tbody> </table>				Billing Month	Period Covered	Electricity delivered by the project activity to SENELEC (Import), MWh	Electricity received by the project activity from SENELEC (export), MWh	Net Electricity delivered by the project activity to SENELEC, MWh	November 2017	20/11/2017 to 30/11/2017	<u>1,206.843</u> 1206.843	<u>6.26</u> 6.26	<u>1,2011,200.6</u> 12011,200.6	December 2018	01/12/2017 to 31/12/2017	<u>3,911.927</u> 3911.927	<u>18.518</u> 18.518	<u>3,8933893.44</u> 38933893.44	January 2018	01/01/2018 to 31/12/2018	<u>3,8423841.956</u> 38423841.956	<u>15.715</u> 15.715	<u>3,8263826.24</u> 38263826.24	February 2018	01/02/2018 to 28/02/2018	<u>4,0094008.975</u> 40094008.975	<u>16.416</u> 16.416	<u>3,9933992.56</u> 39933992.56	March 2018	01/03/2018 to 31/03/2018	<u>4,5784578.339</u> 45784578.339	<u>17.617</u> 17.617	<u>4,5614560.77</u> 45614560.77
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April 2018	01/04/2018 to 30/04/2018	<u>4,778,477.902</u>	<u>16,316.344</u>	<u>4,762,476.155</u> 8
May 2018	01/05/2018 to 31/05/2018	<u>4,803,480.989</u>	<u>18,518.514</u>	<u>4,784,478.47</u> 5
June 2018	01/06/2018 to 30/06/2018	<u>3,550,355.385</u>	<u>14,514.524</u>	<u>3,536,353.86</u> 4
Total	20/11/2017 to 30/06/2018	<u>30,679,30,679.</u> 32	<u>124,123.80</u>	<u>30,555,526</u>

The electricity generation values/11/04/ have been obtained from the continuous data available from SCADA. The data has been cross-checked with the sales invoices/05/ issued by the grid operator, SENELEC and the total of the net electricity generated is slightly higher from the sales invoices as compared to the continuous data (Total average variation is 0.05%). PP has used the continuous data for the calculation of emission reductions in accordance with the monitoring plan and thus is acceptable to the verification team.

The grid emission factor ($EF_{grid,CM,y}$), was calculated ex-ante as per the "Tool to calculate the emission factor for an electricity-system" (Version 05.0.0).

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

Means of verification	Document Review, Interview
Findings	No findings have been raised on this section of the VR.
Conclusion	The project emissions from the project is zero. This is in accordance with ACM0002 version 17 /B02/, registered/ <u>revised approved</u> PDD /B04/, project emissions of the project activity (wind farm project) are not considered. The verification took cognizance of <u>§ 264 of the CDM Project Standard for the project activities, version 02.0 /B01-2/ § 373 and § 374 of the § 375 of CDM VVS for project activities, version 02.0 /3/.</u>

E.8.3. Calculation of leakage GHG emissions

Means of verification	Document Review, Interview
Findings	No findings have been raised on this section of the VR.
Conclusion	The leakage from the project is zero, thus is in accordance with ACM0002 version 17 /B02/, registered/ <u>revised approved</u> PDD /B04/.

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

Means of verification	Document Review, Interview
Findings	No findings have been raised on this section of the VR.
Conclusion	<p>The verification team has checked if the MR includes a summary table of the emission reductions calculation specifying separately:</p> <ul style="list-style-type: none"> • Total baseline emissions, • Total emission reductions. <p>The emission reductions during the monitoring period 20/11/2017 to 30/06/2018 are calculated as:</p> $ER_y = BE_y - PE_y - LE_y = 20,768 - 0 - 0 = 20,768 \text{ tCO}_2\text{e.}$ <p>According to § 375 of CDM VVS for project activities, version 02.0/B01-1/ the verification team confirms that:</p> <ul style="list-style-type: none"> • A complete set of data for the monitoring period is available.

	<ul style="list-style-type: none"> Information provided in the monitoring report has been cross-checked with other sources, electricity sales receipts; Calculations of baseline emissions and emission reduction has been carried out in accordance with the formulae and methods described in the monitoring plan and the applied methodology. Appropriate/correct emission factor value has been applied for the calculation of the emission reductions.
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E.8.5. Comparison of actual GHG emission reductions or net anthropogenic GHG removals by sinks with estimates in registered PDD

Means of verification	Document Review, Interview
Findings	No findings have been raised on this section of the VR.
Conclusion	<p>The comparison of actual GHG emission reductions with estimates in registered/<u>revised approved</u> PDD /B04/ has been checked by the verification team. Based on the above assessment, the emission reduction during the monitoring period 20/11/2017 to 30/06/2018 is verified as 20,768 tCO₂e. The ex-ante estimated value of the emission reductions for the monitoring period (20/11/2017 to 30/06/2018) is 21,163. The verification team noted that the verified emission reductions are less than the estimated value in the monitoring period.</p> <p>According to § 375 of CDM VVS for project activities, version 024.0 the verification team confirms that:</p> <p>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 registered/<u>revised approved</u> PDD has been provided.</p> <p>The verification team considers the calculation of the comparison is correct.</p>

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

Means of verification	Document Review, Interview
Findings	No findings have been raised on this section of the VR.
Conclusion	Actual emission reductions for the first monitoring period 20/11/2017 to 30/06/2018 are less than the ex-ante estimated value of the emission reductions. Hence, this section is not applicable.

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	Document Review, Interview
Findings	No findings have been raised on this section of the VR.
Conclusion	<p>The verification team has checked section E.4 of the MR and the ER calculation spreadsheet. The MR in section E.4 includes a summary table of the ER breakdown which states that the GHG emission reductions have completely been generated from 1 January 2013 onwards. Actual GHG emission reductions have been generated from 1 January 2013 onwards.</p> <p>CERs achieved upto 31st Dec 2012 = 0 tCO₂e. CERs achieved from 1st Jan 2013 = 20,768 tCO₂e</p>

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

Means of verification	Document Review, Interview
Findings	No findings have been raised on this section of the VR.
Conclusion	Not Applicable

E.10. Global stakeholder consultation

Means of verification	Document Review, Interview
Findings	No findings have been raised on this section of the VR.
Conclusion	The monitoring report for the project activity was webhosted for the global stakeholder consultation on 17/07/2018. No comments were received from the

	global stakeholder consultation by the DOE. The site visit for the project activity was conducted from 07/08/2018 to 08/08/2018.
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SECTION F. Internal quality control

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The verification report passed a technical review before being submitted to the UNFCCC Executive Board. The technical review is performed by a technical reviewer qualified in accordance with CCIPL's qualification scheme for CDM validation and verification.

SECTION G. Verification opinion

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Carbon Check (India) Private Ltd. (CCIPL) has performed the first (1st) periodic verification of the registered CDM Project Activity "Grid-connected Solar PV project in Mérina Dakhar" having UNFCCC reference number as 10368.

The verification team assigned by the DOE concludes that the project activity as described in the registered/ revised approved PDD /B04/ and the Monitoring report /02/, meets all relevant requirements of the UNFCCC for CDM project activities including article 12 of the Kyoto Protocol and paragraph 62 of CDM Modalities & Procedures, the modalities and procedures for CDM (Marrakesh Accords) and the subsequent decisions by the COP/MOP and CDM Executive Board. The verification has been conducted in-line with the CDM VVS requirements for project activities, version 024.0 /B01-1/.

Verification methodology and process

The Verification team confirms the contractual relationship signed on 26/04/2018 between the DOE, Carbon Check (India) Private Ltd. and the Project Participant, (Ten Mérina Ndakhar SA). The team assigned to the verification meets the CCIPL's internal procedures including the UNFCCC requirements for the team composition and competence. The verification team has conducted a thorough contract review as per UNFCCC and CCIPL's procedures and requirements.

The verification has been performed as per the requirements described in the CDM VVS for project activities, version 024.0/B01-1/ and constitutes the review and completion of the following steps:

- Reviewing the registered/ revised approved PDD /B04/ including the monitoring plan and the corresponding validation report /B04/;
- Publication of the MR (version 01, 06/07/2018) /01/ on the UNFCCC website on 17/07/2018;
- Desk review of the validation report, MR and other relevant documents including documents related to the project activities in emission reductions
- Review of the applied monitoring methodology (ACM0002 version 17) /B02/;
- Review of any CMP and EB decisions, clarifications and guidance /B05-1/;
- On-site assessment (07/08/2018-08/08/2018)
- Resolution of CARs and CLs raised during verification
- Issuance of Verification Report

The project activity was correctly implemented according to selected monitoring methodology, monitoring plan and the registered/ revised approved PDD/B04/. The monitoring system was installed, maintained in a proper manner, while collected monitoring data allowed for the verification of the amount of achieved GHG emission reductions. Through the review and on-site visit, the verification team confirms that the project activity has resulted in the 20,768 tCO_{2e} emission reductions during the first monitoring period.

The break-up of emission reduction up-to 31/12/2012 and 01/01/2013 onwards as verified during the course of verification are as below:

Item	Emission reductions up to 31 December 2012	Emission reductions from 1 January 2013 onwards
Emission reductions (t CO _{2e})	0	20,768

CCIPL as a DOE is therefore pleased to issue a positive verification opinion expressed in the attached Certification statement.

SECTION H. Certification statement

>>

Carbon Check (India) Private Ltd., the DOE, has performed the verification of the registered project activity “Grid-connected Solar PV project in Mérina Dakhar” having UNFCCC reference number as 10368. The project is a grid connected solar photovoltaic (PV) plant of 29.49 MW in Mérina Dakhar, department of Tivouane, region of Thiès, Senegal, producing electricity and supplying to the grid. The electricity generated by the project replaces grid electricity generated from fossil fuels and reduce GHG emissions for the duration of the project. The site of the solar power plant covers an area of 82.9 hectares and is equipped with 92,160 modules of 320 W each, connected to the national grid.

The PP is responsible for the collection of data in accordance with the monitoring plan and the reporting of GHG emissions reductions. It is the DOE’s responsibility to express an independent verification statement on the reported GHG emission reductions from the project activity. The DOE does not express any opinion on the selected baseline scenario or on the validated and registered/revised approved PDD. The verification is carried out in-line with the requirements of CDM VVS for project activities, version 024.0 /B01-1/.

The verification was performed to identify the compliance with implementation and monitoring requirements, and to verify the actual amount of achieved emission reductions, through obtaining evidence and information on-site that included i) checking whether the provisions of the monitoring methodology and the monitoring plan were consistently and appropriately applied and ii) the collection of evidence supporting the reported data.

The verification is based on:

- PDD version 01.24 dated 2428/032/20197 and the corresponding validation report /B04/;
- Approved monitoring methodology ACM0002 “Consolidated baseline methodology for grid-connected electricity generation from renewable sources”, version 17;
- Monitoring reports version 01.0, dated 06/07/2018; version 01.1, dated 19/10/2018, version 01.2, dated 31/10/2018, version 01.3, dated 13/11/2018, ~~and~~ version 01.3, dated 27/11/2018 and version 01.5, dated 09/07/2019.

This statement covers verification period from 20/11/2017 to 30/06/2018 (including both the dates).

The DOE has raised 02 clarifications and 04 corrective action request, all of which are closed.

The DOE considers necessary to give reasonable assurance that reported GHG emission reductions were calculated correctly on the basis of the approved baseline and monitoring methodology and the monitoring plan contained in the registered/revised approved PDD are fairly stated.


The DOE, hereby certifies that the project activity, achieved emission reductions by sources of GHG equal to 20,768 tCO₂ equivalent and all monitoring requirements have been fulfilled and is substantiated by an audit trail that contains evidence and records. The break-up of emission reduction up-to 31/12/2012 and 01/01/2013 onwards as verified during the course of verification are as below:

Item	Emission reductions up to 31 December 2012	Emission reductions from 1 January 2013 onwards
Emission reductions (t CO ₂ e)	0	20,768

Appendix 1. Abbreviations

Abbreviations	Full texts
BE	Baseline Emissions
CA	Corrective Action/ Clarification Action
CER	Certified Emission Reduction
CAR	Corrective Action Request
CCIPL	Carbon Check (India) Private Ltd.
CDM	Clean Development Mechanism
CL	Clarification Request
CO ₂	Carbon Dioxide
CO ₂ e	Carbon Dioxide Equivalent
DOE	Designated Operational Entity
DVR	Draft Verification Report
EB	CDM Executive Board
EF	Emission Factor
FA	Final Approval
FAR	Forward Action Request
FVR	Final Verification Report
GHG	Greenhouse gas(es)
GWh	Giga Watt Hour
IPCC	Intergovernmental Panel on Climate Change
LE	Leakage Emissions
MP	Monitoring Period
MR	Monitoring Report
MWh	Mega Watt Hour
OSV	On Site Visit
PE	Project Emissions
PP(s)	Project Participant(s)
PRC	Post registration change
QC/QA	Quality Control/ Quality Assurance
SENELEC	Société nationale d'électricité du Sénégal
TA	Technical Area
TR	Technical Review
UNFCCC	United Nations Framework Convention on Climate Change
VVS	Validation and Verification Standard

Appendix 2. Competence of team members and technical reviewers



Carbon Check (India) Private Ltd.

Anubhav Dimri

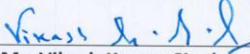
has been qualified as per CCIPL's internal qualification procedures, in accordance with requirements of Accreditation Standard (version 06.0):

For following functions:


Validator Team Leader Technical reviewer
 Verifier Technical Expert Local Expert¹

In the following Technical Areas:

TA 1.1 <input checked="" type="checkbox"/>	TA 3.1 <input checked="" type="checkbox"/>	TA 5.2 <input type="checkbox"/>	TA 9.2 <input type="checkbox"/>	TA 13.2 <input type="checkbox"/>
TA 1.2 <input checked="" type="checkbox"/>	TA 4.1 <input type="checkbox"/>	TA 8.1 <input checked="" type="checkbox"/>	TA 10.1 <input type="checkbox"/>	TA 14.1 <input type="checkbox"/>
TA 2.1 <input type="checkbox"/>	TA 5.1 <input type="checkbox"/>	TA 9.1 <input type="checkbox"/>	TA 13.1 <input checked="" type="checkbox"/>	



Mr. Vikash Kumar Singh
Compliance Officer



Mr. Amit Anand
CEO

Date of Approval
24/12/2018

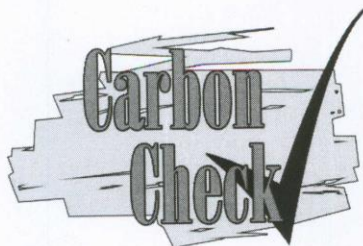
Valid Till
23/12/2019

Revision History of the Document

26/12/2014	Initial Adoption
24/12/2015	Annual Revision
20/01/2016	Interim Revision for office address change
23/12/2016	Annual Revision
24/12/2017	Annual Revision
24/12/2018	Annual Revision

¹ India, South Africa

CARBON CHECK (INDIA) PRIVATE LIMITED
 Registered in India: U74930DL2012PTC232495
 Regd. Off: 2071/38, 2nd Floor, Naiwala, Karol Bagh, New Delhi - 110005
 Corporate off: G 49 & 50, 3rd Floor, Sector - 3, NOIDA (Uttar Pradesh) - 201301
 Tel: +91 120 4373114 | URL: www.carboncheck.co.in
 e-mail: info@carboncheck.co.in



Carbon Check (India) Private Ltd.

Vikash Kumar Singh

has been qualified as per CCIPL's internal qualification procedures, in accordance with requirements of Accreditation Standard (version 07.0):

For following functions:

- Validator Team Leader Technical reviewer
 Verifier Technical Expert Local Expert¹

In the following Technical Areas:

- TA 1.1 TA 3.1 TA 5.2 TA 9.2 TA 13.2
 TA 1.2 TA 4.1 TA 8.1 TA 10.1 TA 14.1
 TA 2.1 TA 5.1 TA 9.1 TA 13.1

Mr. Amit Anand
CEO

Date of Approval
24/12/2018

Valid Till
23/12/2019

Revision History of the Document	
26/12/2014	Initial Adoption
24/12/2015	Annual Revision
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 Tel: +91 120 4373114 | URL: www.carboncheck.co.in
 e-mail: info@carboncheck.co.in

Appendix 3. Documents reviewed or referenced

No.	Author	Title	References to the document	Provider
1	AERA Group	<ol style="list-style-type: none"> 1. Monitoring Report 2. Monitoring Report 3. Monitoring Report <u>4.</u> Monitoring Report <u>4.5.</u> Monitoring Report 	Version 1.0, dated 06/07/2018 Version 1.1, dated 19/10/2018 Version 1.2, dated 31/10/2018 Version 1.3, dated 13/11/2018 <u>Version 1.3, dated 13/11/2018</u>	Others
2	AERA Group	Final Monitoring Report	Version 1. 53 , dated <u>2709/0744/20198</u>	Others
3	AERA Group	<ol style="list-style-type: none"> 1. Emission reduction spreadsheet 2. Emission reduction spreadsheet 3. Emission reduction spreadsheet <u>4.</u> Emission reduction spreadsheet <u>4.5.</u> Emission reduction spreadsheet 	Version 1.0, dated 06/07/2018 Version 1.1, dated 19/10/2018 Version 1.2, dated 31/10/2018 Version 1.3, dated 13/11/2018 <u>Version 1.3, dated 27/11/2018</u>	Others
4	AERA Group	Final emission reduction spreadsheet	Version 1. 53 , dated <u>2709/0744/20198</u>	Others
5	SENELEC	Electricity Invoices for the months of: <ol style="list-style-type: none"> 1. November 2017 2. December 2017 3. January 2018 4. February 2018 5. March 2018 6. April 2018 7. May 2018 8. June 2018 	NA	Others
6	Itron	Calibration Certificates of the energy meters: <ol style="list-style-type: none"> 1. Initial testing Certificate from the manufacturer 2. Email Message from the Manufacturer on the Calibration Requirements for the meter 	Dated 27/03/2017	Others
7	Senelec	Evidence of synchronisation with the Senelec Grid – Start of electricity export to the grid	Dated 20/11/2017	

8	RMT Clemessy	Site Layout	TENMERINA-HT-PE-001	Others
9	Schneider Electric/ JinkoSolar/ ITRON	Manufacturer's Specifications/ Nameplate Configuration: 1. Transformer (Schneider 300415) 2. Solar Panels (Jinko Solar JKM320PP-72) 3. Electricity Meters (ITRON SL7000)	NA	Others
10	apave	Training Certificates: 1. Amadou Mariata Thiam (19-21 July 2017) 2. Momar Talla Gueye (19-21 July 2017) 3. David Tisane Lambal (29-31 August 2017) 4. Abdou Diouf Gueye (29-31 August 2017)	NA	Others
11	Ten Merina Dakhar	Continuous Meter readings from SCADA for the monitoring period	NA	Others
12	Senelec	Power purchase agreement	Dated 31/10/2013	Others
13	Engineering & Environment Services (EES SARL)	EIA Report	September 2016	Others
14	Sgurr Energy Ltd	Capital Cost of the Project Activity Independent Engineer's Certificate	Dated 06/11/2017	Others
B01	UNFCCC	1. Validation and Verification Standard for projects, version 024.0 2. Project Standard for projects, version 024.0 3. Project Cycle Procedure for projects, version 024.0	http://cdm.unfccc.int/	Others
B02	UNFCCC	Applied baseline and monitoring methodology, ACM0002: "Grid-connected electricity generation from renewable sources", version 17	http://cdm.unfccc.int/	Others
B03	UNFCCC	Attachment. Instructions for filling out the monitoring report form version 076.0	http://cdm.unfccc.int/	Others
B04	UNFCCC	1. Registered PDD (version 1.1 dated 21/02/2017) and the corresponding validation report. 2. Revised approved PDD (version 1.2 dated 28/03/2019) and the corresponding validation report.	http://cdm.unfccc.int/	Others
B05	Web sites	Websites: 1. http://cdm.unfccc.int/ 2. www.ipcc.ch	--	Others

B06	UNFCCC	Guideline: "Application of materiality in verifications" Version 02.0	http://cdm.unfccc.int/	Others
B07	UNFCCC	Tool: Baseline, project and/or leakage emissions from electricity consumption and monitoring of electricity generation, version 03.0	http://cdm.unfccc.int/	Others

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

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

FAR ID	01	Section no.	E.2	Date: 16/08/2018
Description of FAR				
<i>In line with §32 of the applied methodology ACM0002, version 17.0, the project proponent has applied the simplified procedure to demonstrate additionality and shall therefore provide information on actual capital cost of the project activity at the time of the first verification.</i>				
Project participant response				Date: 19/10/2018
The project participant informs that the total investment cost of the project has been 43.0 MEUR, as per certificate issued by independent Engineer SGURR Energy Limited to the lender. Section E.2 of the MR has been modified accordingly. These certificates are used to justify/certify to the lender, with each drawdown of the debt, that the money drawn is used to finance the needs.				
Documentation provided by project participant				
<i>Certificate Sgurr: SgurrEnergy - Ten Merina - Certificat Ingenieur Independant n°5 (Proparc....pdf</i>				
DOE assessment				Date: 30/10/2018
PP has provided the actual capital cost of the project activity as 43 Million Euros in the section B.1 of the MR. This is in accordance with the §32 of the applied methodology ACM0002, version 17.0. The actual capital cost is confirmed through the review of the certificate from an Independent Engineer, SGURR Energy Limited (dated 06/11/2017).				
FAR ID	02	Section no.	E.2	Date: 16/08/2018
Description of FAR				
<i>A construction of low voltage power supply line for the time of construction of PV plant was discussed during onsite visit. The connection of line(s) evacuating and supplying electricity shall be checked and evidenced during 1st periodic verification.</i>				
Project participant response				Date: 19/10/2018
<i>Such a line was only discussed ahead of beginning before start of construction of power plant in May 2017 but no such decision was taken at the end. As checked during onsite visit, there has been no such a line during or before the monitoring period and auxiliary power is provided through the MV line. This is confirmed by the latest version of the single diagramme of the project, which does not show such a LV line.</i>				
Documentation provided by project participant				
<i>Single Line Diagramm: 2.1.1 TENMERINA-HT-PE-001-L SchÃfÃma Unifilaire HTB-HTA-BT.pdf</i>				
DOE assessment				Date: 30/10/2018
PP has clarified that the construction of low voltage power supply line at the plant was only discussed, however was not implemented. It was checked through the review of the connection diagramme, conditions on the site and through interview with the substation in-charge at Meckhe sus-station during the on-site visit that low voltage line was not constructed and the site is connected through the 30 kV high voltage lines to the substation. The auxiliary consumption for the site is being done through the bidirectional meters installed at the site and the auxiliary consumption is from the grid itself. The net consumption is being used for the ER calculation.				

Table 2. CL from this verification

CL ID	01	Section no.	E.4.3	Date: 16/08/2018
Description of CL				
<i>A change of start date of the crediting period is proposed for the project activity to 20/11/2017 in section B.2.3 of the MR, however such change has not been made on the interface yet in accordance with the para 235 of the PS for the project activities, version 01.</i>				
Project participant response				Date: 19/10/2018
<i>A request has been made to the UNFCCC – CDM Registry to postpone the start date to 20/11/2018, which has been approved.</i>				
Documentation provided by project participant				
-				
DOE assessment				Date: 30/10/2018
The start date of the crediting period of the project activity has been changed from 01/10/2017 to 20/11/2017. This has been confirmed through the review of the project view page on the CDM interface. PP has stated in the response that it has been changed to 20/11/2018. The date is inconsistent with the CDM interface and the dates provided in the MR.				
Project participant response				Date: 31/10/2018
It is clarified that there has been a typo in the last response and that the correct date is 20/11/2017.				
Documentation provided by project participant				
-				
DOE assessment				Date: 06/11/2018
PP has clarified that the crediting period start date is changed to 20/11/2017. This has also been confirmed through the review of the project view page on the CDM interface.				

CL ID	02	Section no.	E.6.2	Date: 16/08/2018
Description of CL				
<i>The organization structure as provided in the section C of the MR is not provided in accordance with the monitoring organization provided in section B.7.3 of the PDD.</i>				
Project participant response				Date: 19/10/2018
<i>The organisation structure provided showed only the staff of operation & maintenance. The managerial staff has now been added to the structure to clarify and be in line with section B.7.3 of the PDD.</i>				
Documentation provided by project participant				
--				
DOE assessment				Date: 30/10/2018
The organisation structure has been provided in the section C of the MR in accordance with the section B.7.3 of the PDD. However, the diagram is not getting displayed when the track changes are turned off.				
Project participant response				Date: 31/10/2018
To minimize all potential source of disturbance, the image has been saved as jpg and reimported into the document.				
Documentation provided by project participant				
-				
DOE assessment				Date: 06/11/2018
PP has provided the organisation structure in the section C of the MR and is in accordance with the section B.7.3 of the PDD. Clean and track change versions of the MR have been provided to the verification team.				

Table 3. CAR from this verification

CAR ID	01	Section no.	E.1	Date: 16/08/2018
Description of CAR				
<i>In section A.5 of the MR, in accordance with the instruction text requirement, the start date and end date of the crediting period are not provided. The template of the CDM-MR-FORM has been altered and on the cover page "01" has been written.</i>				
Project participant response				Date: 19/10/2018
<i>The dates have been added in section A.5 and the Form readjusted on the cover page.</i>				
Documentation provided by project participant				
-				
DOE assessment				Date: 30/10/2018DD/MM/YYYY

Section A.5 of the MR has been revised to include the start date and end date of the crediting period. The template form has been also corrected and the cover page is now in accordance with the CDM-MR-FORM version 6.0.

CAR ID	02	Section no.	E.3	Date: 16/08/2018
Description of CAR				
<i>Information on the implementation and actual operation of the project activity, including relevant dates (e.g. construction, commissioning, start of operation) is not provided in the MR. The date of project commissioning and the relevant construction dates have not been provided in the section B.1 of the MR.</i>				
Project participant response				Date: 19/10/2018
<i>Date of start of construction of power plant has been added in section B.1. Detail on the date of commissioning has been added. PP submits minutes produced on the day of synchronization of the power plant with the grid (=date of commissioning).</i>				
Documentation provided by project participant				
<i>Minutes: Pv synchronisation Ten Merina signé 2011207.pdf</i>				
DOE assessment				Date: 30/10/2018
<i>The dates of the implementation and actual operation of the project activity, including relevant dates (e.g. construction, commissioning, start of operation) have been provided in the section B.1 of the MR. The start date of the electricity export to the grid or the commissioning of the project is the day ERs are generated from the project activity. The grid synchronisation certificate dates 20/11/2017 confirms that the electricity starts exporting to the grid from 20/11/2017 at 14h00.</i>				

CAR ID	03	Section no.	E.7	Date: 16/08/2018
Description of CAR				
<i>The calibration details of the monitoring equipment used for monitoring the electricity generation have not been provided in the section D.2 of the MR. The calibration certificates for the monitoring equipment are not provided to the verification team. The meter readings have not been provided in accordance with the section B.7.1 of the MR.</i>				
Project participant response				Date: 27/11/2018
<i>The QA/QC procedure in the PDD only requires a test and calibration of the meters in a 1-year interval (at minimum). Therefore, no such details and no calibration certificates have been provided apart from certificates of conformity issued after manufacturing of the meters. The meter readings have now been provided in accordance with the section B.7.1 of the MR.</i>				
Documentation provided by project participant				
<i>Certificate of conformity: CERTIFICATS Ten Merina.pdf Itron Email: AW_ ACE SL7000.msg</i>				
DOE assessment				Date: 28/11/2018
<i>PP has provided the conformity certificate from the manufacturer confirming the verification testing of the electricity meters prior to the installation at the site. The calibration conformity test certificate confirms that the meters were calibrated prior to installation. Since, the installed meters have not completed the required frequency of 1 years for calibration, the initial calibration is valid upto one year after installation of the meters on the site as per the registered monitoring plan.</i>				

CAR ID	04	Section no.	E.8.1	Date: 16/08/2018
Description of CAR				
<i>The value of electricity delivered by the project activity to the Senelec grid (Import) provided in the cell D11 of the TEN MERINA Production data workbook of the ER sheet does not match with the invoice for the month of November 2017. The electricity sales invoices for the months of May 2018 and June 2018 have not been provided to the verification team.</i>				
Project participant response				Date: 19/10/2018
<i>The workbook has been revised based on continuous primary data provided by the SCADA system (with exception of start-up period until end of January 2017, for which the SCADA system did not provide coherent data). The mentioned typos have been corrected in the data for cross checking of primary data. The electricity sales invoices as the complete readings for the invoices as well as the full fledged SCADA data are (re-)submitted with this response.</i>				

Documentation provided by project participant	
Readings for Invoices: <i>Relevés Ten Merina.zip</i> SCADA data: <i>Pro_TEN_31_01_2018 au 26_09_2018.xls</i> Invoices.zip	
DOE assessment	Date: 30/10/2018DD/MM/YYYY
PP has stated that the workbook has been revised based on continuous primary data provided by the SCADA system (with exception of start-up period until end of January 2017, for which the SCADA system did not provide coherent data). It needs to be clarified that in absence of the continuous data, how the monitoring plan proposed in the section B.7.1 of the registered PDD and the section 6.1 of the monitoring methodology ACM0002, version 17 is being met by the project activity.	
Project participant response	Date: 31/10/2018
The SCADA recordings for Nov.2017-Jan. 2018 has been added to the ER calculations, sheet "SCADA readings" and the complete dataset is submitted to the DOE. It turns out that the SCADA recordings (in terms of net active energy exported) only shows significant deviations from the manual readings for the month of November 2017 (overestimation of net electricity exported). Therefore, the ER calculations keep referring to the manual reading, carried out jointly by the Project Participant and offtaker Senelec, for that month. For December 2017 and January 2018, the ER calculations now refer to the primary data of the SCADA recordings. Since this change is only formal and the information provided in the MR is not impacted, no modifications have been made in the MR.	
Documentation provided by project participant	
irrad TEN (Nov-Jan 2018).xls	
DOE assessment	Date: 06/11/2018
PP has provided the SCADA recordings for the period Nov.2017-Jan. 2018 and since the value from the SCADA readings is significantly higher than the sales receipts, the value from the sales receipts has been used. However, this shall be justified in accordance with the Any comment for the monitoring parameter in accordance with the tool, "Baseline, project and/or leakage emissions from electricity consumption and monitoring of electricity generation". The production data from SCADA provided in the ER sheet for the month of November 2017 does not match with the SCADA continuous data provided by the PP. The continuous data for the monitoring period has only been provided for November 2017 to January 2018. The continuous data for the complete monitoring period is not provided.	
Project participant response	Date: 13/11/2018
The production data from the SCADA system provided in the ER sheet has been checked for the month of November 2017 and the values of 11/11/2017 (19h40) replaced by the correct values of 20/11/2018 (14h00)! After this modification, no significant inconsistency can be found between the SCADA data and the production data in the ER sheet for the month of November 2017 and electricity readings for the electricity sales. The integrated data sheet with the continuous data for the complete monitoring period is submitted with this response Pro_TEN_28_11_2017 au 26_09_2018.xls.	
Documentation provided by project participant	
Pro_TEN_28_11_2017 au 26_09_2018.xls	
DOE assessment	Date: 14/11/2018
The production data from the SCADA system has been provided in the ER sheet for each month. The values provided have been cross-checked with the raw data sheet provided for the complete monitoring period. The value of ERs has been calculated based on the monthly data available from SCADA. These values have been cross-checked with the electricity net-production invoices and it is determined that the net production available from the SCADA data is slightly less than the cross-check data available in sales invoices (the variation is 0.01% (negligible)) and thus considered conservative. The integrated data sheet (raw data sheet) with the continuous data for the complete monitoring period has been provided to the verification team. The reported values have been cross-checked with the values in the ER sheet and found correct.	

Table 4. FAR from this verification

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

DOE assessment	Date: DD/MM/YYYY

- - - - -

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
