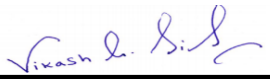
Validation report form for post-registration changes for CDM project activities

(Version 02.0)

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)
Process track	☒ Prior approval ☐ Issuance ☐ Renewal of crediting period
Version number of the validation report on PRCs	Version 2
Completion date of the validation report on PRCs	03/04/2019
Type(s) of PRCs	☐ Temporary deviations from the registered monitoring plan, applied methodologies or applied standardized baselines ☐ Corrections ☐ Changes to the start date of the crediting period ☐ Inclusion of a monitoring plan ☒ Permanent changes to the registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines, or other applied standards or tools ☐ Changes to the project design ☐ Changes specific to afforestation and reforestation project activities
Version number of PDD to which this report applies	Version 1.2, dated 28/03/2019
Project participants	Ten Mérina Ndakhar SA
Host Party	Senegal
Applied methodologies and standardized baselines	Methodology: ACM0002 - Grid-connected electricity generation from renewable sources - Version 17.0
Mandatory sectoral scopes linked to the applied methodology	Sectoral Scope : 1 - Energy industries (renewable - / non-renewable sources)
Conditional sectoral scopes linked to the applied methodologies	NA
Name and UNFCCC reference number of the DOE	Carbon Check (India) Private Ltd. (E-0052)

Name, position and signature of the approver of the validation report on PRCs	Vikash Kumar Singh, Compliance Officer 

SECTION A. Executive summary

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Purpose, general description and location of the project activity:

Ten Mérina Ndakhar SA, hereafter referred as the "Project Participant" (PP), has appointed the DOE, Carbon Check (India) Private Ltd. (CCIPL) to perform an independent validation of the post registration changes of the CDM Project Activity "Grid-connected Solar PV project in Mérina Dakhar" (UNFCCC 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.

Scope of validation:

This validation is an independent and objective review of the post registration changes in the registered PDD/B04/. The scope of the validation of post registration changes is to determine whether there are proposed or actual changes to the project design of the registered CDM project activity. CCIPL also determined whether the description in the revised PDD/02/ submitted by project participants, which describe the nature and extent of the actual changes, accurately reflects the implementation, operation and monitoring of the modified project activity. The validation of post registration changes in the revised PDD/01-3/ were based on the following:

(i) Approved consolidated methodology ACM0002 (version 17.0) /B02/ and the applied tools
(ii) Revised PDD (in track change and clean mode) /02/
(iii) CDM VVS for Project Activities (version 02.0) /B01-1/
(iv) CDM PS for Project Activities (version 02.0) and /B01-2/
(v) CDM PCP for Project Activities (version 02.0) /B01-3/
(vi) Relevant decisions, guidance and clarifications of the CMP and CDM EB

Validation process:

The validation process for post registration changes includes the following steps:

(a) Contract with project participants and appointment of validation team and technical review team
(b) Desk review of the revised PDD by validation team and planning of onsite visit
(c) On site visit and follow up interviews by the validation team
(d) Reporting and closure of findings (CARs/CLs/FARs) and preparation of validation report
(e) Independent technical review of the validation report
(f) Issuance of final validation report to the contracted PP and submission to UNFCCC for approval of post registration changes as appropriate.

The summary of proposed changes is as below;

Sl. No.	**Permanent changes to monitoring Plan**
1.	Update of situation, number, maintenance and testing and calibration requirements of MV electricity meters

Conclusion:

The report is based on the assessment of the revised PDD undertaken through application of standard auditing techniques including but not limited to document reviews and stakeholder

interviews, review of the applicable/applied methodology and its underlying formulae and calculations.

This report contains the findings and resolutions from the validation and a validation opinion on the proposed post-registration changes thus confirming the revised project design as document is sound and reasonable and meets the stated requirements and identified criteria. The validation confirms that the implementation of the post registration changes is in line with the applied methodology and all other applicable tools and guidance.

This report is the combined assessment opinion for all the changes that are proposed in the PDD and request is submitted for prior approval by CDM EB.

SECTION B. Validation team, technical reviewer and approver

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B.1. Validation 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	Validation findings
1.	Team Leader/ Validator/ Technical Expert	IR	Dimri	Anubhav	CCIPL	X	X	X	X
2.	Local Expert	EI	Mar	Papa Moussa	CCIPL		X	X	

B.2. Technical reviewer and approver of the validation report on PRCs

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	CCIPL
2.	Approver	IR	Singh	Vikash Kumar	CCIPL

SECTION C. Means of validation

C.1. Desk/document review

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

C.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 PDD	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 relevant personnel to determine whether the operational and data collection procedures are implemented in accordance with the monitoring plan in the PDD	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 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

C.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	Anubhav Dimri, Papa Moussa Mar
2.	Gueye	Momar Talla	Eiffage	07/08/2018	Project technical specification and operation including metering and QA/QC	Anubhav Dimri, Papa Moussa Mar
3.	Sy	Amadou	Meridiam	07/08/2018	Financials and project milestones	Anubhav Dimri, Papa Moussa Mar
4.	Mayr	Sebastian	Aera Group	07/08/2018	Project technical specification and operation including metering and QA/QC, Discussion with regards to the post-registration changes	Anubhav Dimri, Papa Moussa Mar
5.	Ba	Abdourahmane	Cabinet EES	07/08/2018	Project technical specification and operation including metering and QA/QC	Anubhav Dimri, Papa Moussa Mar

6.	Sow	Colo	Senelec	08/08/2018	Metering and invoicing, Grid connections and capacity, calibration procedure requirements, Meter location	Anubhav Dimri, Papa Moussa Mar

C.4. Sampling approach

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Not Applicable.

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

Areas of validation findings	No. of CL	No. of CAR	No. of FAR
Compliance with PDD form	-	-	-
Temporary deviations from the registered monitoring plan, applied methodologies or applied standardized baselines	-	-	-
Corrections	-	-	-
Changes to the start date of the crediting period	-	-	-
Inclusion of a monitoring plan	-	-	-
Permanent changes to the registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines, or other applied standards or tools	02	-	-
Changes to the project design	-	-	-
Changes specific to afforestation and reforestation project activities	-	-	-
Others (please specify)	-	-	-
Total	02	00	00

SECTION D. Validation findings

D.1. Compliance with PDD form

Means of validation	Document Review, Interview
Findings	NA
Conclusion	The revised PDD /01-3/ has been completed using the latest available template of CDM-PDD-FORM /B06/ and has been submitted in both track change and clean versions /03/. Both the registered /B04/ and revised PDD /01-3/ were reviewed for the consistency of the information and it is confirmed that the information transferred from the previous template to the new template is materially the same as in the registered PDD /B04/ except the changes due to the proposed PRC. This confirms to the requirements of §278 and 279 of the VVS for project activities (version 02.0) /B01-1/. Furthermore, in accordance with §280 (a) of VVS for project activities (version 02.0) /B01-1/, the validation team confirms that: (i) The revised PDD /01-3/ is compliant with the valid version of the CDM-PDD-Form /B06/ and instructions therein; and The information transferred to the revised PDD /01-3/ is materially the same as that provided in the registered PDD /B04/.

D.2. Temporary deviations from the registered monitoring plan, applied methodologies or applied standardized baselines

Means of validation	DR, I
Findings	NA

Conclusion	NA

D.3. Corrections

Means of validation	DR, I
Findings	NA
Conclusion	NA

D.4. Changes to the start date of the crediting period

Means of validation	DR, I
Findings	NA
Conclusion	NA

D.5. Inclusion of a monitoring plan

Means of validation	DR, I
Findings	NA
Conclusion	NA

D.6. Permanent changes to the registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines, or other applied standards or tools

Means of validation	DR, I
Findings	CL01 and CL02 had been raised in this regard and have been resolved.
Conclusion	PP has proposed permanent changes to the registered monitoring plan. The post registration changes have been proposed in accordance with the § 238 of the PS for the project activities, version 02/B01-2/ and section 8.3.4 of the VVS for the project activities, version 02/B01-1/. In the section B.7.1 of the registered PDD/B04/, "Measurement methods and procedures" for the monitoring parameter, $EG_{facility,y}$, were provided as: "*Two electricity meters will be installed at Senelec delivery substation located near the site entrance.* *Precision of meters: 0.2 (as per PPA metering provisions)* *A SCADA system allows the whole PV facilities to be manually or automatically controlled and monitored locally or remotely.* *Technical/Engineering/Maintenance Department is responsible for measurements."* The permanent change proposes change to the location of the electricity meters and the number of meters, accordingly following change has been proposed: "*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 permanent change involves change in the location of the installed meters from the Senelec substation to the 30 kV delivery point onsite. Also, the number of meters has changed due to two meters on each 30 kV line from the site to the onsite delivery point. Thus, a total of 4 electricity meters are installed, two each on each line. The two meters installed on each line are for the PP, Ten Mérina Ndakhar SA and Senelec each. This change has been accepted by the grid operator, Senelec and was confirmed with the representative of the substation/I-06/. As the project activity is connected through two feeder lines of 30 kV each, an electricity meter from Senelec and the PP, Ten Mérina Ndakhar SA, has been installed at the site. The reason for the movement of the electricity meters (meter 3 and meter 4) from substation to the delivery point is that it has been done as per the provisions of the Power Purchase Agreement/04/ between Senelec and the Project Participant. As per the power purchase agreement Annex F/04/, the delivery point (point de livraison) has been indicated on the PV power plant feeder lines connection. This was also confirmed through the communication between the PP and the grid operator, Senelec/06/ for the movement of the meters from the substation to the site delivery point. Verification Team thus based on the evidence shared confirms that the meters were transferred as per the diagram provided in the Annex F of the PPA/04/, signed between the PP and the grid operator Senelec. This change was done on

	13/12/2017, confirmed through the email conversation between the PP and Senelec/06/. The calibration requirements for the installed electricity meters have also been changed in the section B.7.1 of the registered PDD: Original: "*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.*" Proposed Change: "*The calibration of meters, including the frequency of calibration, should be done in accordance with national standards or requirements set by the meter supplier or requirements set by the grid operators:* *Requirements set by the meter supplier apply. With respect to frequency of calibration, no periodic calibration is required after initial calibration ex works, neither by national standards, nor by the meter supplier, nor by the grid operator.* *Regular maintenance and testing in accordance with the stipulation of the meter supplier and/or as per the requirements set by the grid operators or national requirements:* *In absence of a grid code and stipulations of the meter supplier, national requirements apply. In normal circumstances, a periodic verification of the meters is performed on an annual basis (based on decree 60-415).*" The calibration/ testing type has been changed by the PP and instead of the proposed calibration of the meters to be done after each deviation of more than +- 0.5% but at least on a yearly basis, following manufacturer's recommendations, changes have been proposed. This has been done due to the erroneous statement in the registered PDD/01-1/ and a corrected statement following the clarification from the manufacturer/06/ that the meters do not require any periodic calibration after the initial calibration testing done by the manufacturer. The revised proposed calibration/testing requirement proposes a periodic verification of the meters performed on an annual basis. This is in accordance with the power purchase agreement/04/, which is based on the decree 60-415 implemented by the department of metrology of the Senegal/07/. PP has also detailed what entails the verification in the Appendix 7 of the PDD/B01-3/. As per Art. 1 and 2 of the decree/07/, it shall be verified if the meter underwent initial primitive verification and if it meets certain characteristics, particularly in terms precision. The verification determines if the meter is in conformity with the decree or needs to be refurbished or removed from service. The proposed changes do not have any impact on the applicability of the methodology or other applied tools as the "Tool: Baseline, project and/or leakage emissions from electricity consumption and monitoring of electricity generation, version 03.0"/B07/ referred in the methodology ACM0002, version 17/B02/, does not provide any requirement on the location of the meters. All the installed meters are bidirectional meters and continue to follow the Measurement procedures (if any) of the Table 12 provided in the section 7.2 of the tool/B07/ - "*Use electricity meters installed at the grid interface for electricity export to grid and for supply to captive consumers use electricity meters installed at the entrance of the electricity consuming facility*". The change does not have any impact on the level of accuracy of the monitoring compared with the requirements contained in the registered monitoring plan as the accuracy class of the installed meters continues to be same as provided in the registered PDD. The change has been done in accordance with the para 1(c) of the Appendix of the Project Standard for the project activities, version 02/B01-2/. The change has been validated in accordance with the section 8.3.4 of the VVS for the project activities, version 02/B01-1/.

D.7. Changes to the project design

Means of validation	DR, I
Findings	NA
Conclusion	NA

D.8. Changes specific to afforestation and reforestation project activities

Means of validation	DR, I
Findings	NA
Conclusion	NA

SECTION E. Internal quality control

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

SECTION F. Validation opinion

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Carbon Check (India) Private Ltd. (CCIPL) has performed the validation of the prior approval tarck post-registration changes for the registered CDM Project Activity "Grid-connected Solar PV project in Mérina Dakhar" having UNFCCC reference number 10368. During the validation of the post-registration changes to the project activity, permanent changes to the monitoring plan from registered project activity has been identified. The post registration changes (PRC) to registered project activity has been validated in line with the requirements of PCP for project activities (version 02.0) /B01-3/, PS for project activities (version 02.0) /B01-2/ and VVS for project activities (version 02.0) /B01-1/.

CCIPL based on review of the revised PDD /01-3/ and interview with the PP confirms that the proposed changes:

- Are an accurate reflection of actual project or programme information; and/or
- Are in accordance with the applied methodologies, the registered monitoring plan.

The proposed permanent changes are unlikely to lead to a reduction in the accuracy of the calculation of emission reductions. The validation team confirms that the revised monitoring plan does not reduce the level of accuracy of the monitoring compared with the requirements contained in the registered PoA-DD.

The version of the templates for PDD was updated to the latest version of template. This change was assessed to confirm that the revised PDD complies with the completing instructions of the CDM-PDD-FORM.

The validation team can confirm that the post registration changes carried out to PDD is in accordance with the requirements of UNFCCC. The DOE therefore accepts the changes and request for the approval of "Permanent changes from registered monitoring plan, monitoring methodology or standardized baseline".

The validation was performed on the basis of rules and requirements defined by UNFCCC for the CDM project activities. The review of the revised PDD /01-3/, supporting documentation and subsequent follow-up actions (including interviews), have provided CCIPL with sufficient evidence to determine the fulfilment of stated criteria.

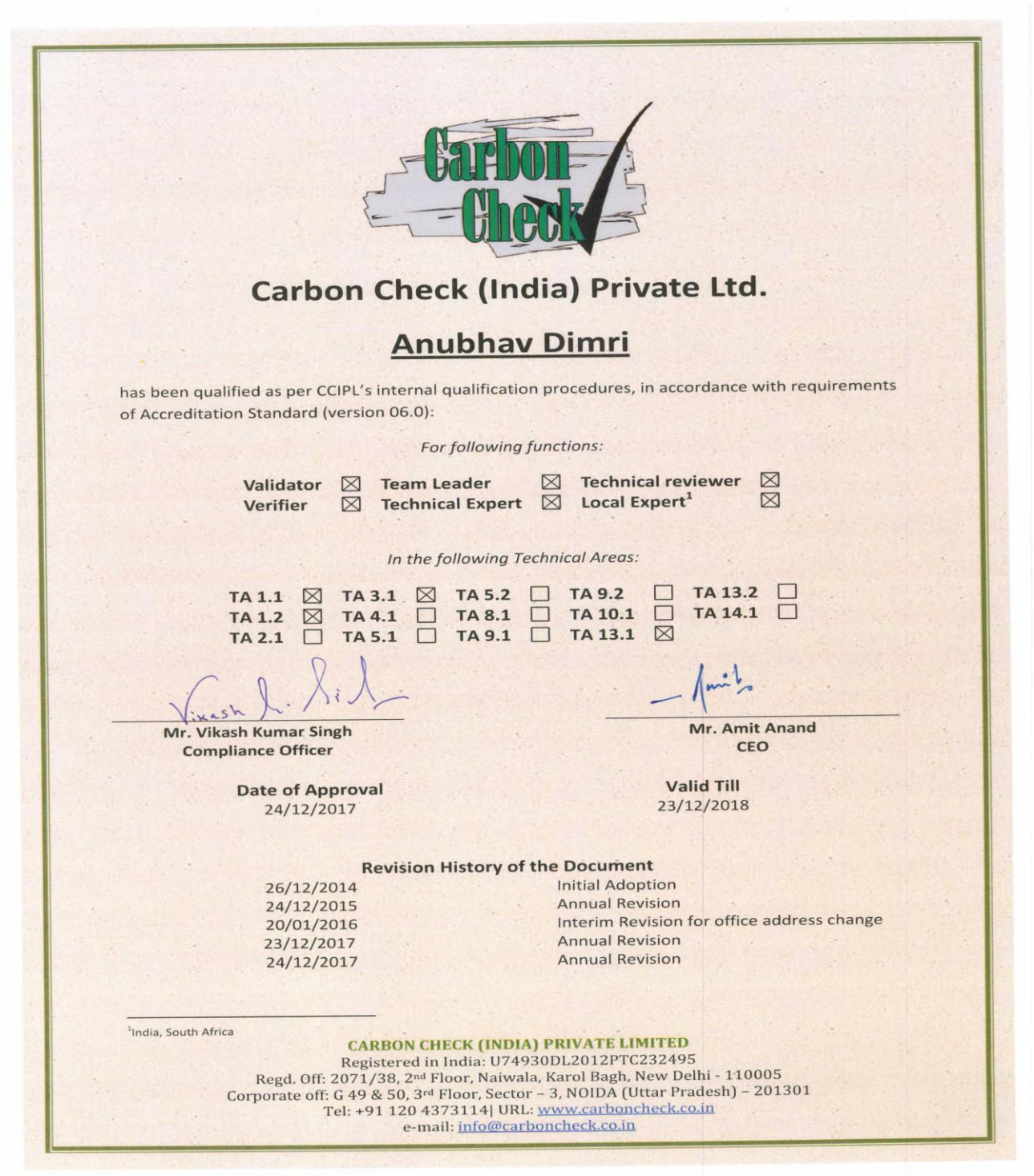
During the course of validation Two (02) CLs were raised and all of them have been successfully closed by the CME.

Carbon Check India Private Ltd. concludes the validation with a positive opinion that the Project Activity "Grid-connected Solar PV project in Mérina Dakhar", meets all applicable requirements of UNFCCC for post-registration changes and therefore recommends for the approval of " Permanent changes from registered monitoring plan, monitoring methodology or standardized baseline" made to the PDD.

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_2e	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
MV	Medium Voltage
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 Expert[1]	☒

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. Vikash Kumar Singh
Compliance Officer

Mr. Amit Anand
CEO

Date of Approval
24/12/2017

Valid Till
23/12/2018

Revision History of the Document

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

[1]India, South Africa

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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 Expert[1]**	☒

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
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

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Appendix 3. Documents reviewed or referenced

No.	Author	Title	References to the document	Provider
1	AERA Group	1. Revised PDD 2. Revised PDD 3. Revised PDD (Final)	Version 1.2, dated 13/11/2018 Version 1.2, dated 27/11/2018 Version 1.2, dated 28/03/2019	Others
2	Itron	Calibration Certificates of the energy meters: 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
3	Schneider Electric/ JinkoSolar/	Manufacturer's Specifications/ Nameplate Configuration: 1. Transformer (Schneider 300415) 2. Solar Panels (Jinko Solar JKM320PP-72) 3. Electricity Meters (ITRON SL7000)	NA	Others
4	Senelec	Power purchase agreement and Annexes F and H	Dated 31/10/2013	Others
5	Secretariat General Du Gouvernement, Republique du Senegal	No. 60-415 M.C.I DÉCRET organisant le contrôle des instruments de Mesure dans la République du Sénégal	NA	Others
6	Senelec/ Ten Mérina Ndakhar SA	Communication between PP and Grid Operator to move two electricity meters from the sub-station to the onsite 30-kV delivery point	23/11/2017 to 13/12/2017	Others
7	Division de la Metrologie, République du Sénégal	Verification Testing Certificate	Dated 07/02/2019	Others
B01	UNFCCC	1. Validation and Verification Standard for projects, version 02.0 2. Project Standard for projects, version 02.0 3. Project Cycle Procedure for projects, version 02.0	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 PRC form version 02.0	http://cdm.unfccc.int/	Others

B04	UNFCCC	Registered PDD (version 1.1 dated 21/02/2017) 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. CLs from this validation

CL ID	01	**Section no.**	D.6	**Date:** 04/03/2019
Description of CL				
IRC comment was raised: "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). *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 1 and paragraph 239 of PS for PA version 1 as it did not validate the reason of moving two meters from substation to the delivery point on 13 December 2017."* *PP shall provide the reason for the movement of the electricity meters (meter 3 and meter 4) from substation to the delivery point and shall clarify if it meets the requirements of the paragraph 238 and 239 of PS for PA version 2.*				
Project participant response				**Date:** 06/03/2019
Senelec, which is the grid operator and offtaker of the electricity exported by the project participant, has asked to move two electricity meters from the sub-station to the onsite 30kV delivery point to be in line with the provisions of the Power Purchase Agreement between Senelec and the Project Participant. There are now 4 meters installed onsite, two owned by the Project Participant, two owned by Senelec. *Paragraph 239 of PS for PA version 2 is not applicable since there is no plausible reason, which would suggest an overestimation of emission reductions. The move of the movers has no or rather a positive impact on the accuracy and completeness of monitoring as i) the update only involves a change of the situation of the meter (towards the delivery point), ii) the calibration requirements are revised as per ACM0002 V.17, i.e. are in accordance with requirements set by the meter supplier, iii) the electricity meter will be subject to regular maintenance and testing as per ACM0002 V.17, i.e. in accordance with national requirements.*				
Documentation provided by project participant				
Annex F (to PPA) *Annex H (to PPA)* *Exchange between Senelec and RMT (who implemented the move of the meters on request by Senelec) (Echanges compteurs.pdf)*				
DOE assessment				**Date:** 08/03/2019

PP has clarified that the reason for the movement of the electricity meters (meter 3 and meter 4) from substation to the delivery point is that it has been done as per the provisions of the Power Purchase Agreement between Senelec and the Project Participant. As per the power purchase agreement Annex F, the delivery point (point de livraison) has been indicated on the PV power plant feeder lines connection. This was also confirmed through the communication between the PP and the grid operator, Senelec for the movement of the meters from the substation to the site delivery point. Verification Team thus based on the evidence shared confirms that the meters were transferred as per the diagram provided in the Annex F of the PPA, signed between the PP and the grid operator Senelec.

CL ID	02	**Section no.**	D.6	**Date:** 04/03/2019
Description of CL				
IRC comment was raised: "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). *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 up to 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."* *PP shall clarify how the calibration requirements as provided in the registered PDD are complied with by the installed electricity meters. PP shall also clarify on the calibration requirements from the Senelec (Senegal Electricity Authority) and the manufacturer of the electricity meters.*				
Project participant response				**Date:** 06/03/2019
In the registered PDD, it is stated "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." These specifications have not been clear yet or erroneously interpreted at stage of project validation and the manufacturer clarified that no periodic calibration is required for the meters after initial calibration. There are no periodic calibration requirements by Senelec either as confirmed by the PPA. There is no grid code in Senegal or other Senegalese regulation, which would require periodic calibration. *The electricity meters have been calibrated ex works by the manufacturer on 27/03/2017 and were installed and sealed on 20/11/2017.* *With regard to the stated testing requirements in the PDD, a first verification of the meters has been taken place on February 7, 2019, after official start of operation on 20/11/2017 (synchronization of project with the grid). PP clarifies that the verification of the meters at an annual frequency is being done at a frequency of 1 year based on the Senegalese regulation and the Power Purchase agreement with Senelec.* *Thus, the project participant would like to take due account of the new/actual situation and envisage a PRC of the PDD.*				
Documentation provided by project participant				
Revised PDD *Revised MR* *Email clarification from the manufacturer Itron (AW_ ACE SL7000.msg)* *Proof of calibration at stage of manufacturing (CERTIFICAT of conformity Ten Merina.pdf)* *Decree 60-415 (DECRET 60 415 CONTROLE INSTRUMENTS DE MESURE AU SENEGAL.pdf)* *Attestation of verification of meter (Attestation de vérification des compteurs Ten Merina.pdf)*				
DOE assessment				**Date:** 07/03/2019

PP has clarified that the requirements on the calibration of the meters on an annual basis has been provided erroneously in the section B.7.1 of the PDD and based on the email clarification from the manufacturer of the electricity meters, it is confirmed that the meters do not require periodic calibration. Furthermore, PP has clarified that there are no periodic calibration requirements by Senelec either as per the PPA and there is no grid code in Senegal or other Senegalese regulation, which would require periodic calibration. *Accordingly, PP has proposed a post-registration plan to the registered monitoring plan and in accordance with the registered monitoring plan it is proposed to have verification testing of the meters on an annual frequency in accordance with the Power Purchase Agreement (based on decree 60-415).* *A temporary deviation has also been applied as the verification testing was not conducted at the required frequency of annual by the Senelec for the electricity meters. However, it has been noted that the temporary deviation has been listed in the PDD as well. It needs to be clarified why the temporary deviation has been listed in the Appendix 7 of the PDD. The calculation for the corrected values after applying errors has not been done correctly in the section B.2.1 of the MR and the 'TEN MERINA Production data' workbook of the ER sheet.*
Project participant response **Date:** 07/03/2019
The temporary deviation (included by mistake) has been deleted in Appendix 7 of the PDD. *The calculation for the corrected values after applying errors has been revised in the section B.2.1 of the MR and the 'TEN MERINA Production data' workbook of the ER sheet.*
Documentation provided by the Project participant
Revised PDD *Revised MR* *Revised ER calculations*
DOE assessment **Date:** 08/03/2019
PP has removed the reference to the temporary deviation from the Appendix 7 of the PDD. *The calculation for the corrected values after applying errors has been corrected in the section B.2.1 of the MR and the 'TEN MERINA Production data' workbook of the ER sheet.*

Table 2. CARs from this validation

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

Table 3. FARs from this validation

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

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Document information

Version	*Date*	*Description*
02.0	31 October 2017	Revision to align with the requirements in the “CDM validation and verification standard for project activities” (version 01.0).
01.0	23 March 2015	Initial publication.

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