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	70 MW Bhadla Solar power plant by Fortum Finnsurya Energy Pvt Ltd (EKIESL-CDM-APRIL-16-01) UNFCCC Reference Number: 10403
GS reference number of the PA	GS5519
Earthood reference number	CDM.VER.19.41
Scale of the project activity	☒ Large-scale ☐ Small-scale
Version number of the verification and certification report	1.0
Completion date of the verification and certification report	20/09/2019
Monitoring period number and duration of this monitoring period	First, 06/11/2017 to 01/04/2019 (inclusive of both days)
Version number of the monitoring report to which this report applies	02
Crediting period of the project activity corresponding to this monitoring period	06/11/2017 - 05/11/2024 (Renewable)
Project participants	Fortum FinnSurya Energy Private Limited
Host Party	India
Applied methodologies and standardized baselines	ACM0002: Grid-connected electricity generation from renewable sources Version 17.0 Standardized baseline: Not applicable
Mandatory sectoral scopes	01 - Energy industries (renewable / non-renewable sources)
Conditional sectoral scopes, if applicable	NA
Estimated amount of GHG emission reductions or GHG removals for this monitoring duration in the registered PDD	167,465 tCO_2e
Certified amount of GHG emission reductions or GHG removals for this monitoring period	201,309 tCO_2e
Name and UNFCCC reference number of the DOE	Earthood Services Private Limited E-0066
Name, position and signature of the approver of the verification and certification report	

	 Dr. Kaviraj Singh Managing Director

SECTION A. Executive summary

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The main purpose of this project activity is to generate clean form of electricity through renewable solar energy source. Fortum Finnsurya Energy Private Limited is the promoter of the project activity. The project activity has an installed capacity of 70 MW (AC) (88.2 MWp) solar power project at Bhadla, Jodhpur, Rajasthan. The annual average of electricity generation and emission reduction over 7 years of crediting period is 122,108 MWh/year and 119,384 tCO2e per year.

Project is operational, and the assessment team verified this during the site visit. The assessment team confirms that the total emission reduction achieved under this monitoring period 06/11/2017 to 01/04/2019 (including both days) is 201,309 tCO_2e.

Fortum Finnsurya Energy Private Limited has contracted Earthood Services Private Limited (Earthood) to conduct the verification and certification of emission reductions reported for the GS PA "70 MW Bhadla Solar power plant by Fortum Finnsurya Energy Pvt Ltd (EKIESL-CDM-APRIL-16-01)" for the period 06/11/2017 to 01/04/2019 (inclusive both days). This report contains the findings of the verification process and a certification statement for the certified emission reductions. The verification is the periodic independent review and *ex post* determination by Earthood of the monitored reductions in GHG emissions that have occurred as a result of the registered GS project activity during a defined monitoring period. Certification is the written assurance by Earthood that, during a specific period in time, a project activity achieved the verifiable emission reductions.

The objective of this verification was to verify and certify emission reductions reported for the "70 MW Bhadla Solar power plant by Fortum Finnsurya Energy Pvt Ltd (EKIESL-CDM-APRIL-16-01)" for the period 06/11/2017 to 01/04/2019.

Scope of verification

The verification is an independent and objective review determination of the monitored reductions in GHG emissions and improvement in sustainability parameters by the DOE. The verification includes the implementation and operation of the PA as set out in the registered PDD in the monitoring period. The verification tests the data and assertions set out in the monitoring report based on the following:

The verification tests the data and assertions set out in the monitoring report prepared for this monitoring period by the PP and the review of PA towards physical implementation of the project and it is based on the following:

(i) The approved methodology "ACM0002: Grid-connected electricity generation from renewable sources Version 17.0"
(ii) "Gold Standard for Global Goals Transition Annexure", version 1, dated September 2019
(iii) The registered CDM PDD and monitoring plan
(iv) GS Passport for PA
(v) GS4GG Transition Annexure (approved) dated 03/01/2018
(vi) UNFCCC criteria referred to in the Kyoto Protocol criteria and the CDM modalities and procedures as agreed in the Bonn Agreement and the Marrakech Accords
(vii) GS for GG requirements
(viii) The CDM Validation and Verification Standard (VVS) version 2.0
(ix) The CDM Project Standard (PS) version 2.0 and Project Cycle Procedure (PCP) version 2.0
(x) Relevant decisions, guidance and clarifications of the CMP and CDM Executive Board and any other information and references relevant to the project activity's reported emission reductions
(xi) GS review of previous verification

The verification has considered both quantitative and qualitative aspects on stated/reported emission reductions. The monitoring report (all versions) and corresponding supporting documentation was assessed in accordance with the rules defined by UNFCCC and GS for GG, as appropriate to the PA. The verification is not meant to provide any consulting or recommendations to the PP/others. However, stated requests for clarifications and/or corrective actions may provide input for improvement of the monitoring activities.

Verification process

The verification process is conducted as per internal GS Requirements, which includes the following steps;

a) Contract with PP and appointment of verification team and technical review team (refer Section B.1 and B.2 of this report)
b) Uploading the GS Workplan on GS registry
c) Desk review (refer Section D.1 of this report) of Monitoring Report and corresponding ER sheet by verification team and planning of onsite audit (including sampling approach (refer Section D.4 of this report) to be applied)
d) On site audit (refer Section D.2 of this report) (physical implementation and interview with relevant stakeholders) by verification team consistent of Team Leader and all Technical Experts, as a minimum
e) Follow up activities e.g., interviews (refer Section D.3 of this report)
f) Reporting and closure of findings (CARs/CLs/FARs) and preparation of draft verification report (refer Section D.5 of this report)
g) Independent technical review (refer Section B.2 of this report) of the draft verification report and final/revised documentation (e.g., Monitoring Report, corresponding ER sheet and evidences)
h) Reporting and closure of TR comments/findings (refer Section D.5 of this report) (CARs/CLs/FARs) and final approval for the decision made (refer Section G and H of this report).
i) Issuance of final verification report to contracted PP (or authorized representatives) and submission of request for issuance, as appropriate.

Conclusion

Based on the outcome of the verification process of the PA "70 MW Bhadla Solar power plant by Fortum Finnsurya Energy Pvt Ltd (EKIESL-CDM-APRIL-16-01)" for the monitoring period 06/11/2017 to 01/04/2019 (including both dates) we confirm that the implementation of referenced registered PA is complying with applicable CDM and GS rules and regulations as stated in the Monitoring Report (final) Version 1.0, dated 01/08/2019. The GHG emission reductions were calculated correctly on the basis of the approved baseline and monitoring methodology "ACM0002: Grid-connected electricity generation from renewable sources Version 17.0" and the monitoring plan contained in the registered PDD[1] and "Gold Standard for Global Goals Transition Annexure", version 1, dated September 2019.

Earthood Services Private Limited is able to certify that the emission reductions from the registered PA (GS 5519) "70 MW Bhadla Solar power plant by Fortum Finnsurya Energy Pvt Ltd (EKIESL-CDM-APRIL-16-01)" for the monitoring period 06/11/2017 to 01/04/2019 (including both dates) amount to 201,309 tCO_2e. Therefore, this is being submitted for request for issuance, as per Gold standard and UNFCCC procedures.

SECTION B. Verification team, technical reviewer and approver

B.1. Verification team member

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)	Involvement in			
						Desk/document review	On-site inspection	Interviews	Verification findings
1.	Team Leader	EI	Takarkhede	Atul	Central Office	Y	Y	Y	Y
2.	Technical Expert (TA1.2)	EI	Takarkhede	Atul	Central Office	Y	Y	Y	Y
3.	Methodology Expert	IR	Garg	Shreya	Central Office	Y	N	N	Y
4.	Local Expert	EI	Garg	Shreya	Central Office	Y	Y	Y	Y

5.	Verifier	IR	Garg	Shreya	Central Office	Y	N	N	Y

B.2. Technical reviewer and approver of the verification and certification report

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)
1.	Technical reviewer	IR	Gupta	Anshika	Central Office
2.	TA expert to TR	IR	Gupta	Anshika	Central Office
3.	Approver	IR	Singh	Kaviraj	Central Office

SECTION C. Application of materiality

C.1. Consideration of materiality in planning the verification

No.	Risk that could lead to material errors, omissions or misstatements	Assessment of the risk		Response to the risk in the verification plan and/or sampling plan
		Risk level	Justification	
1.	Human error in recording monitored data in JMR sheets	Low	The reading of JMR is being recorded in the presence of representatives of State Electricity Board and O&M contractor. Hence, it is highly unlikely of occurrence of human error while recording the readings.	The practice on site for recording data was confirmed from the responsible team members for compliance with the standard procedure. The JMR data/9/ for the project activity was cross checked against the controller readings/Invoices/10/.
2.	Transfer of recorded data to break up sheets and invoices	Low	A dedicated Team is appointed for transfer of recorded data and calculations related to generation by each Feeder. These calculations are performed in excel templates which have adequate control measures to prevent any manual or calculation error. These sheets are further reviewed for errors by the Electricity Board.	The practice on site for data transfer was confirmed from the responsible team members for compliance with the standard procedure.
3.	Error in transferring the recorded data to ER sheet	Medium	The procedure for transferring the recorded break-up sheet readings to the spreadsheet is manual in nature thus increasing the chances of error. However, PP has Implemented internal quality checks to ensure prevention of any such potential error in the prepared ER sheet.	All the monthly reported values in ER sheet/ER7/ were verified with JMR/9/.

C.2. Consideration of materiality in conducting the verification

In line with Guidelines for Application of materiality in verifications, the verification team has conducted a complete verification of all the information presented in the monitoring report and data monitored as

presented in the emission reduction calculation spread sheet. There are no material errors, overestimation of ER, omission or misstatement.

SECTION D. Means of verification

D.1. Desk/document review

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Earthood conducted a desk review as under;

- A review of the data and information presented to verify their completeness;
- A review of the monitoring plan, the monitoring methodology including applicable tool(s) and, where applicable, the applied standardized baseline, paying particular attention to the frequency of measurements, the quality of metering equipment including calibration requirements, and the quality assurance and quality control procedures;
- An evaluation of data management and the quality assurance and quality control system in the context of their influence on the generation and reporting of emission reductions;

In addition to the monitoring documentation, Earthood has reviewed;

- GS Passport dated 09/01/2018 Version 03, GS Transition Annex and GS MR dated 01/08/2019 version 01;
- The registered PDD, Version 02 dated 04/08/2017 and the monitoring plan, including any approved revised monitoring plan and/or changes from the registered PDD, and the corresponding validation opinion;
- The Validation Report Version 01 dated 16/08/2017;
- The applied monitoring methodology (ACM0002, Version 17.0);
- The monitoring report (all versions) to verify that it is as per the standardized format;
- Any other information and references relevant to the project activity's emission reductions (e.g. IPCC reports, data on electricity generation in the national grid or laboratory analysis/calibration and national regulations).

The complete list of documents reviewed is included under Appendix 3.

D.2. On-site inspection

Duration of on-site inspection: 19/06/2019				
No.	**Activity performed on-site**	**Site location**	**Date**	**Team member**
1.	**Opening Meeting:** Introduction, scope and objective of work, roles and responsibilities of audit team, resources required, and timetable of the onsite audit including venue for closing meeting and any concerns from PP	Bhadla, Jodhpur, Rajasthan, India	19/06/2019	Dr. Atul Takarkhede
2.	Site visit of the plant & implementation of project activity. Local Stakeholder especially end users interview and feedbacks			
3.	Management and monitoring procedures followed at project site.			
4.	Site visit Management and operational system: Documentation, allocation of responsibilities, qualification and training, data recording &archiving, internal audit and management review and emergency procedures.			
5.	Verification checklist: compliance of monitoring procedures followed at project site with registered PDD, GS Passport and monitoring methodology.			
6.	Review of monitored data and relevant document in accordance with registered monitoring plan and applied monitoring methodology.			
7.	Interviews with other stakeholders like villagers and employees involved in PA.			
8.	Compilation of the findings by Auditor/s (CARs/CLs)			
9.	**Closing Meeting:** Submission of the audit findings to the client and agreement on the issues raised and timelines.			

D.3. Interviews

No.	**Interviewee**			**Date**	**Subject**	**Team member**
	Last name	**First name**	**Affiliation**			
1.	Kumar	Hemant	Principal Manager, Fortum	19/06/2019	Project implementation, ER calculation, monitoring plan, Operation and maintenance Procedures, Calibration, JMR etc.	Dr. Atul Takarkhede
2.	Paliwal	Dilip	Manager (Electrical), Fortum	19/06/2019	Operation and maintenance	
3.	Khan	Kasam	Driver, Fortum	19/06/2019	LSC	
4.	Jatav	Prakash	Substation Operator	19/06/2019	Substation monitoring & metering arrangement, calibration	
5.	Sen	Bharat	Ascent	19/06/2019	O&M practices at	

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
			Electrification		site	

D.4. Sampling approach

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No sampling approach was followed by the assessment team. All reported figures in the GS MR[/6/] and GS ER[/7/] were checked from the actual records.

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

Areas of verification findings	No. of CL	No. of CAR	No. of FAR
Compliance of the monitoring report with the GS monitoring report form	-	CAR 01	-
Compliance of the project implementation and operation with the registered Passport/Transition Annex	-	CAR 03 CAR 05	-
Post-registration changes	-	-	-
Compliance of the registered monitoring plan with the methodologies including applicable tools and standardized baselines	-	-	-
Compliance of monitoring activities with the registered monitoring plan	-	CAR 02 CAR 04	-
Compliance with the calibration frequency requirements for measuring instruments	-	-	-
Assessment of data and calculation of emission reductions or net removals	-	-	-
Assessment of reported sustainable development co-benefits	-	-	-
Global stakeholder consultation	-	-	-
Others (please specify)	-	-	-
Total	**0**	**5**	**0**

SECTION E. Verification findings

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

Means of verification	The monitoring report form used is Gold standard for the global goals Monitoring report version 1[/13/] which was the appropriate form and the latest version available at the time of verification, as verified through GS webpage.
Findings	CAR 01 was raised and resolved.
Conclusion	All the sections of the form were filled as per the guidelines and gave all the relevant details. CAR 01 was raised for the non-submission of the MR during desk review. PP have submitted MR and found that all sections are filled appropriately. The final monitoring report[/6/] was found to be in compliance with the applicable latest monitoring report form and instructions therein[/13/].

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

This is the first verification of the project activity, there are no FARs from last validation report[/2/].

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

Means of verification

Physical on-site inspection was carried out by the verification team to check the implementation status of the project activity and the instrumentation installed for the project activity.

The commissioning date of the Solar Power plant was verified from the commissioning certificates/8/ and found that project was commissioned on 31/03/2017. Through validation report/2/ and PPA/18/ it was confirmed that PP is in agreement NTPC Ltd. for the sale of electricity to the grid.

The verified geographical coordinates of the Solar Power plant have been mentioned below. The same were checked during on-site inspection by using a hand-held GPS instrument.

Project Investor	Location	Latitude	Longitude
Fortum Finnsurya Energy Private Limited	Village Bhadla, Tehsil Bap, District Jodhpur, Rajasthan, India.	N 27° 28' 7.00"	E 71° 58' 17.00"

The locations of SPV plant was verified using a hand held Get-Geo Coordinates app for mobile phones and the data obtained was verified against geo-locations of the plant given in the registered CDM PDD/1/, GS Passport/19/ & Transition Annex/20/. The geo-coordinates reported in the registered CDM PDD/1/, GS Passport/19/ & Transition Annex/20/ was not found consistent with the readings of the GPS instrument. Same is corrected and Post registration changes application was submitted by PP to UNFCCC.

The installation and specification of the SPV installed were checked with the commissioning certificate/8/, name-plates and physical inspection.

The technical specification of the equipment are tabulated below:

Technical detail of the equipment	Remark
Technology	Solar PV Module
Solar photovoltaic module	First solar series 4™ PV Module
No of Modules	112.5Wp:- 88800, 115Wp:-587000, 117.5Wp:- 85200
Make	First Solar
Capacity	112.5Wp, 115Wp,117.5Wp
No of inverters	70
Make	ABB
Capacity	1000KVA
No. of transformers	18 (ITD) + 2 (PT)
Technical & Operational Lifetime	25 years

The single line diagram available at the sub-station and the interviews with the site engineers confirmed that the configuration of the project activity and the location of monitoring instruments is in accordance with the description provided in the CDM PDD/1/, GS Passport/19/ & Transition Annex/20/.

In addition to physical inspection, interviews of the personnel were conducted by the verification team which revealed that all the QA/QC procedures listed in the registered PDD/1/ have been followed while operating the project activity.

	As per para 34 of PS for PA version 2.0[/4/], project activity is type-I activity of Large scale. The emission reduction achieved in this monitoring period are 201,309 tCO2e[/6/], against the estimated ERs – 167,465 tCO2e as per approved PDD[/1/]. The monitoring and metering system, and its compliance with the monitoring plan has been discussed in later sections of the report For the purpose of verification of implementation of project activity, audit team conducted following activities onsite: • An inspection of operational state of Solar Power Plant • Interviews of personnel employed in the functioning of project activity to gauge if the monitoring personnel were well verse of their role and responsibilities • Review of documentation for the monitored data and to cross-check their correct transfer to ER sheet[/7/]. The information relating to the project implementation, provided in the Monitoring Report[/6/] is consistent with that stated in the registered CDM PDD[/1/], GS Passport[/19/] & Transition Annex[/20/]. The data and variables provided in the monitoring report are the same as stated in the registered CDM PDD[/1/], GS Passport[/19/] & Transition Annex[/20/]. Further, grievance register is maintained at site office. No major complaints were observed during the monitoring period. Further, PP is carrying out need based CSR activities in the nearby area for through Community Development Program. Same was evidenced during onsite visit and CSR records [/21/] submitted by PP.
Findings	CAR 03 & CAR 05 was raised and resolved.
Conclusion	DOE, inline to para 354-356 of VVS for PA Version 02[/5/], confirms that: • Implementation and operation of project activity has been conducted in accordance with the description contained in registered CDM PDD[/1/], GS Passport[/19/] & Transition Annex[/20/]. • Physical features of the registered project activity specified in registered PDD[/1/] are in place and PP have operated the project activity as per the registered CDM PDD[/1/], GS Passport[/19/] & Transition Annex[/20/]. The emission reductions achieved during the current monitoring period are 201,309 tCO_2e which is higher than the estimated ERs as per CDM PDD[/1/], GS Passport[/19/] & Transition Annex[/20/]167,465 tCO_2e.

E.4. Post-registration changes

E.4.1. Temporary deviations from the registered monitoring plan, applied methodologies, standardized baselines or other methodological regulatory documents[1]

Not applicable for present Monitoring period.

E.4.2. Corrections

The geo-coordinates of the project site mentioned in the CDM PDD[/1/], GS Passport[/19/] & Transition Annex[/20/] was found incorrect during onsite visit of verification team. Same was addressed in the CDM verification and PP submitted revised PDD with correct geo-coordinates of the project activity through RFI mode. Verification team checked the same and found correct. Thus GS MR is also submitted by PP with corrected Geo-coordinates. This editorial permanent change does not have any impact on project design, baseline, scale of project and additionally assumptions and hence accepted by verification team.

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

Not applicable for present Monitoring period.

[1] Other standards, methodologies, methodological tools and guidelines (to be) applied in accordance with the applied(selected) methodologies are collectively referred to as the other (applied) methodological regulatory documents).

E.4.4. Inclusion of a monitoring plan

Not applicable for present Monitoring period.

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

Not applicable for present Monitoring period.

E.4.6. Changes to the project design

Not applicable for present Monitoring period.

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

Not Applicable.

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

Means of verification	The review of applied methodology ACM0002: Grid-connected electricity generation from renewable sources Version 17.0/3/ and approved monitoring plan establishes that the plan is consistent with the applied methodology/ ACM0002/. Based on this review it was found the monitoring plan includes all the required parameters to be monitored in the context of project design and description and allows proper determination of emission reductions in accordance with the applied methodology/ ACM0002/.
Findings	No findings
Conclusion	The approved monitoring plan is in accordance with the applied methodology/3/ and correctly applied by the CDM PDD/1/, GS Passport/19/ & Transition Annex/20/.

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

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

Means of verification

The values considered ex-ante for this monitoring period were cross-checked with registered CDM PDD/1/, GS Passport/19/ & Transition Annex/20/and their respective sources. The summary of all the ex-ante parameters has been given below:

Parameter/ Description	Value applied	MoV
SDG 13: Climate Action **$EF_{grid,OM,y}$** Operating Margin CO2 emission factor in year y	0.9941 tCO_2/MWh	The value of the parameter was checked from registered PDD/1/. The value of the parameter was sourced from CEA database version 11/14/.
SDG 13: Climate Action **$EF_{grid,BM}$** Build Margin CO2 emission factor in year y	0.9285 tCO2/MWh	The value of the parameter was checked from registered PDD/1/. The value of the parameter was sourced from CEA database version 11/14/.
SDG 13: Climate Action **$EF_{grid,CM,y}$** Combined Margin CO2 emission factor in year y	0.9777 tCO2/MWh	The value of the parameter was checked from registered PDD/1/. The value of the parameter was sourced from CEA database

			version 11[/14/].
Findings	None		
Conclusion	The value in the monitoring report[/6/] and corresponding emission reduction calculations spreadsheet[/7/] are consistent with the CDM PDD[/1/], GS Passport[/19/] & Transition Annex[/20/]. The applied value is correct and justified.		

E.6.2. Data and parameters monitored

Relevant SDG Indicator	**SDG 7 : Affordable and Clean Energy**
Means of verification	**EG** $_{PJ, y}$: Quantity of net electricity generation supplied by the project plant/unit to the grid in year y in MWh

Measuring/Reading/Recording Frequency	Measured continuously and recorded monthly
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes, the monitoring frequency is in accordance to the monitoring plan[/1/] and monitoring methodology[/3/].
Monitoring equipment	The parameter is monitored with a bi-directional energy meter. Details of monitoring meters are provided in Appendix 5 of the report.
Is accuracy of the monitoring equipment as stated in the monitoring plan? If the monitoring plan does not specify the accuracy of the monitoring equipment, does the accuracy of the monitoring equipment comply with local/national standards, or as per the manufacturer's specification?	Accuracy class of the equipment is 0.2s, which is in line to registered CDM PDD[/1/], GS Passport[/19/] & Transition Annex[/20/] and consistent with calibration certificate[/15/] as well. Information was found consistent onsite.
Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges?	Accuracy class is valid for entire range.
Calibration frequency /interval:	The meters are calibrated by State Utility i.e. RRVPNL and accredited/State Utility approved external third parties once in five years[/1/]. Details of the calibration are provided in FVR and revised MR.
Is the calibration interval in line with the monitoring plan and/or methodology? If the monitoring plan does not specify the frequency of calibration, is the selected frequency in accordance with the local/national standards, or as per the manufacturer's specifications?	Yes
Is the calibration of measuring equipment carried out by an accredited person or institution?	Yes, The meters are calibrated by State Utility i.e. RRVPNL and accredited/State Utility approved external third parties once in five years[/15/].
Is(are) calibration(s) valid for the whole reporting period?	The calibration dates are presented in appendix 5 of this report. The dates have been checked from the calibration certificates. Thus, it is valid for the whole monitoring period.

	Is the calibration carried out for a measuring range comparable with the range for which measurements have been carried out?	Yes
	How were the values in the monitoring report verified?	A value of Net Electricity export by the project activity for the monitoring period verified from monthly joint meter reading issued by State Utility/9/. The value was found to be consistently reported in MR/6/ and ER sheet/7/.
	If applicable, has the reported data been cross-checked with other available data?	The readings were cross checked with the monthly bills raised by PP to NTPC Vidyut Vyapar Nigam Ltd./10/.
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, The calibration of the monitoring meters is done by state utility periodically. Check meters also help in verifying main meter readings.
	In case project participants have temporarily not monitored the parameter, has either i) a deviation been approved by the CDM EB or ii) has the parameter been estimated as stipulated by Appendix 1 to the CDM Project Standard?	No such issues.
Findings	No finding raised.	
Conclusion	The DOE confirms that: • The registered monitoring plan has been properly implemented and followed by the project participants • Monitoring of parameter is implemented in accordance with registered monitoring plan/1/. • The equipment used for monitoring the parameter is controlled and calibrated in accordance with registered monitoring plan and applied methodology/3/. • Monitoring results are consistently recorded as per approved frequency. • Quality assurance and quality control procedures have been applied in accordance with the registered monitoring plan/1/.	

Relevant SDG Indicator	**SDG 8: Decent Work and Economic Growth** • **Quantitative employment and income generation** Number of people employed directly due to the project activity. Number of men and number of women employed by the project activity. Type of job like temporary/permanent or skilled/unskilled, etc also monitored and it is ensued that peoples will get equal payment for equal work.
Means of verification	The value for this parameter is taken from Plant records / Letter from O&M contractors for employment generation/EMPR/. Verification team interviewed some employees & local stakeholders.
Findings	CAR 02 was raised and resolved.
Conclusion	The value mentioned in the Monitoring Report/6/ and Emission Reduction Spreadsheet/7/ are consistent with the registered CDM PDD/1/, GS Passport/19/ & Transition Annex/20/. The applied value is correct and justified.

Relevant SDG Indicator	**SDG 8: Decent Work and Economic Growth** • **Quality of employment** Training of staff.
Means of verification	The value for this parameter is taken from Plant records i.e. Training Records/16/. Verification team interviewed some employees to verify trainings conducted.
Findings	CAR 04 was raised and resolved.
Conclusion	The value mentioned in the Monitoring Report/6/ are consistent with the registered CDM PDD/1/, GS Passport/19/ & Transition Annex/20/. The applied value is correct and justified.

Relevant SDG Indicator	**SDG13: Climate Action** • **ERy** Emission reduction achieved per year.
Means of verification	The value for this parameter is calculated inline with registered CDM PDD/1/, GS Passport/19/ & Transition Annex/20/.
Findings	No finding was raised.
Conclusion	The value mentioned in the Monitoring Report/6/ are consistent with the registered CDM PDD/1/, GS Passport/19/ & Transition Annex/20/. The applied value is correct and justified.

E.6.3. Implementation of sampling plan

Means of verification	The verification assessed whether the compliance of the sampling efforts and surveys with the registered sampling plan in accordance with the "Standard for sampling and surveys for CDM/GS project activities and programme of activities" if PP had applied a sampling approach to determine data and parameters monitored.
Findings	There is no CAR/CL raised in this section.
Conclusion	Sampling plan to determine data and parameters monitored during this monitoring period have not been applied. The verification team has checked all the documents such as JMR (Monthly meter) report/9/, Employment Records/EMPR/, Training Records/16/ etc. and hence sampling plan was not required. The verification team hereby confirms that are checked all the documents.

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

Means of verification	The energy generation is measured through a tri-vector electronic meters installed on the Pooling sub-station 132/220 KV RSDCL GSS II and 220/400 KV RRVPNL GSS substation. A back up meter is also installed to measure the data, which can be used as a source of data if the main meter is found to exceed the maximum permissible limit of error during calibration. The calibration frequency for both meters was set as once in five year/1/. The details of meters and the dates on which calibration has been conducted are given in appendix 5 of this report. The calibration certificates/15/ submitted by the PP confirmed the dates listed in appendix 5 and, also revealed that the process has been carried out by State Utility. Calibration and meter arrangement are not in the purview of Project participants and is controlled by the State Utility. To ensure that the readings were accurate, calibration certificates of all meters were checked and were found satisfactory. The verification team observed that there is no delay in calibration for all the meters.
Findings	No finding raised.
Conclusion	The DOE confirms that the calibration is conducted at the frequency as specified by the methodology and the registered monitoring plan/1/.

E.8. Safeguarding principles assessment

Means of validation

The analysis of social, economic and environmental impacts:

Safeguarding principles	Assessment questions	Assessment of relevance to the project by PP (Yes/potentially/No)	Justification by DOE
3.0 Social & Economic Safeguarding Principles and Requirements 3.1 Principle 1 – Human Rights	1. The Project Developer and the Project shall respect internationally proclaimed human rights and shall not be complicit in violence or human rights abuses of any kind as defined in the Universal Declaration of Human Rights. 2. The Project shall not discriminate with regards to participation and inclusion.	NO	Based on the CDM PDD[/1/], GS Passport[/19/] & Transition Annex[/20/], from review and assessment of the PA it is evident that project is generating electricity through solar power plant and does not interfere in the human rights of the people therefore the safeguarding principle is relevant to the project in a positive manner. Hence, it was found acceptable by the assessment team.
3.2 Gender Equality and Women's Rights	1. The Project shall complete the following gender assessment questions in order to inform Requirements 2-4, below: • Is there a possibility that the Project might reduce or put at risk women's access to or control of resources, entitlements and benefits? • Is there a possibility that the Project can adversely affect men and women in marginalised or vulnerable communities (e.g., potential increased burden on women or social isolation of men)? • Is there a possibility that the	No	Based on the CDM PDD[/1/], GS Passport[/19/] & Transition Annex[/20/], from review and assessment of the PA it is evident that project is generating electricity through solar power plant. The project activity is not impacting gender quality for women's rights, therefore the safeguarding principle is relevant to the project in a positive manner. Hence, it was found acceptable by the assessment team.

			Project might not take into account gender roles and the abilities of women or men to participate in the decisions/designs of the project's activities (such as lack of time, child care duties, low literacy or educational levels, or societal discrimination)? • Does the Project take into account gender roles and the abilities of women or men to benefit from the Project's activities (e.g., Does the project criteria ensure that it includes minority groups or landless peoples)? • Does the Project design contribute to an increase in women's workload that adds to their care responsibilities or that prevents them from engaging in other activities? • Would the Project potentially reproduce or further deepen discrimination against women based on gender, for instance, regarding their full participation in design and implementation or access to opportunities and benefits? • Would the Project potentially limit women's ability to use, develop and protect natural resources, taking into account different roles and priorities of women and men in accessing and managing environmental			

			goods and services? • Is there a likelihood that the proposed Project would expose women and girls to further risks or hazards? 2. The Project shall not directly or indirectly lead to/contribute to adverse impacts on gender equality and/or the situation of women. Specifically, this shall include (not exhaustive): • Sexual harassment and/or any forms of violence against women – address the multiple risks of gender-based violence, including sexual exploitation or human trafficking. •Slavery, imprisonment, physical and mental drudgery, punishment or coercion of women and girls. • Restriction of women's rights or access to resources (natural or economic). • Recognise women's ownership rights regardless of marital status – adopt project measures where possible to support to women's access to inherit and own land, homes, and other assets or natural resources. 3. Projects shall apply the principles of nondiscrimination, equal treatment, and equal pay for equal work, specifically: • Where appropriate for the implementation of a Project, paid, volunteer			

		work or community contributions will be organised to provide the conditions for equitable participation of men and women in the identified tasks/activities. • Introduce conditions that ensure the participation of women or men in Project activities and benefits based on pregnancy, maternity/paternity leave, or marital status. • Ensure that these conditions do not limit the access of women or men, as the case may be, to Project participation and benefits. 4. The Project shall refer to the country's national gender strategy or equivalent national commitment to aid in assessing gender risks.		
	3.3 Principle 3 – Community Health, Safety and Working Conditions	The Project shall avoid community exposure to increased health risks and shall not adversely affect the health of the workers and the community.	No	The project activity is a renewable energy generation and does not increase any health risks and not adversely affecting the health of the workers and the community.
	3.4 Principle 4 – Cultural Heritage, Indigenous Peoples, Displacement and Resettlement 3.4.1 Sites of Cultural and Historical	Does the Project Area include sites, structures, or objects with historical, cultural, artistic, traditional or religious values or intangible forms of culture (e.g., knowledge, innovations, or practices)?	No	No cultural heritage is observed on the project site.

	Heritage			
	3.4.2 Forced Eviction and Displacement	Does the Project require or cause the physical or economic relocation of peoples (temporary or permanent, full or partial)?	No	The land was allotted by the Government authorities on the lease basis to the PP by completing all requirements of prevailing rules and regulations. Thus project does not require or cause the physical or economic relocation of peoples
	3.4.3 Land Tenure and Other Rights	1. Does the Project require any change to land tenure arrangements and/or other rights? 2. For Projects involving land-use tenure, are there any uncertainties with regards land tenure, access rights, usage rights or land ownership? Examples include, but are not limited to water access rights, community-based property rights and customary rights.	No	The barren land was allotted by the Government authorities on the lease basis to the PP by completing all requirements of prevailing rules and regulations. Thus, project does not have impact on land tenure or landuse etc.
	3.4.4 Indigenous Peoples	Are indigenous peoples present in or within the area of influence of the Project and/or is the Project located on land/territory claimed by indigenous peoples	No	The land is allotted by the Government authorities on the lease basis to the PP by completing all requirements of prevailing rules and regulations. The project is having positive impact on the local peoples by employment generation and other ancillary business opportunities in the area.
	3.5 Principle 5 – Corruption	(a) Does not recognise Projects that engage in, contribute to or reinforce corruption of any kind. The Project shall not involve, be complicit in or inadvertently contribute to or reinforce corruption or corrupt Projects.	No	The project is renewable energy technology and does not contribute to or reinforce corruption of any kind.
	3.6 Principle 6 –	1. The Project Developer shall	No	The safeguarding principle is not impacted by the

		Economic Impacts 3.6.1 Labour Rights	ensure that there is no forced labour and that all employment is in compliance with national labour and occupational health and safety laws, with obligations under international law, and consistency with the principles and standards embodied in the International Labour Organization (ILO) fundamental conventions. Where these are contradictory and a breach of one or other cannot be avoided, then guidance shall be sought from Gold Standard. 2.Workers shall be able to establish and join labour organisations. 3. Working agreements with all individual workers shall be documented and implemented. These shall at minimum comprise: (a) Working hours (must not exceed 48 hours per week on a regular basis), AND (b) Duties and tasks, AND (c) Remuneration (must include provision for payment of overtime), AND (d) Modalities on health insurance, AND (e) Modalities on termination of the contract with provision for voluntary resignation by employee, AND (f) Provision for annual leave of not less than 10 days per year, not including sick and casual leave.		project activty because all the laws towards labour rights are in place in India. PP management is abide to it, therefore, the PP is not monitoring. Since safeguarding principle is not impacted, the verification team found it acceptable for PP to not monitor this principle.	

		4. The Project Developer shall justify that the employment model applied is locally and culturally appropriate. 5. Child labour, as defined by the ILO Minimum Age Convention is not allowed. The Project Developer shall use adequate and verifiable mechanisms for age verification in recruitment procedures. Exceptions are children for work on their families' property as long as: (a) Their compulsory schooling (minimum of 6 schooling years) is not hindered, AND (b) The tasks they perform do not harm their physical and mental development, AND (c) The opinions and recommendations of an Expert Stakeholder shall be sought and demonstrated as being included in the Project design. 6. The Project Developer shall ensure the use of appropriate equipment, training of workers, documentation and reporting of accidents and incidents, and emergency preparedness and response measures.			
	3.6.2 Negative Economic	Is project involves Negative Economic Consequences	No	The safeguarding principle is not impacted by the project activity because	

	Consequences	1. The Project Developer shall demonstrate the financial sustainability of the Projects implemented, also including those that will occur beyond the Project Certification period. 2. The Projects shall consider economic impacts and demonstrate a consideration of potential risks to the local economy and how these have been taken into account in Project design, implementation, operation and after the Project. Particular focus shall be given to vulnerable and marginalised social groups in targeted communities and that benefits are socially-inclusive and sustainable.		the project does not impact the local economy. The project is financial sustainable beyond certification period. Since safeguarding principle is not impacted, the verification team found it acceptable for PP to not monitor this principle.	
	4.1.1 Emissions	Will the Project increase greenhouse gas emissions over the Baseline Scenario?	No	The project reduces the amount of fossil fuel used for electricity generation in absence of renewable source and therefore mitigates GHGs. The parameter is monitored based on the operational status of the project by electricity generated from solar power plant. Since safeguarding principle is not impacted, the verification team found it acceptable for PP to not monitor this principle.	
	4.1.2 Energy Supply	Will the Project use energy from a local grid or power supply (i.e., not connected to a national or regional grid) or fuel resource (such as wood, biomass) that provides for other local users?	No	The safeguarding principle is not impacted by the project activity because the project does not use grid power rather generate electricity and supply to regional grid. Since safeguarding principle is not impacted, the verification team found it acceptable for PP to not	

				monitor this principle.
	4.2.1 Impact on natural water patterns and flow	Will the Project affect the natural or pre-existing pattern of watercourses, ground-water and/or the watershed(s) such as high seasonal flow variability, flooding potential, lack of aquatic connectivity or water scarcity?	No	The safeguarding principle is not impacted by the project activity because the project does not affect ground water, watershade of the area etc. Since safeguarding principle is not impacted, the verification team found it acceptable for PP to not monitor this principle.
	4.2.2 Erosion and/or water body stability	1. Could the Project directly or indirectly cause additional erosion and/or water body instability or disrupt the natural pattern of erosion? If 'Yes' or 'Potentially' proceed to question 2. 2. Is the Project's area of influence susceptible to excessive erosion and/or water body instability?	No	The safeguarding principle is not impacted by the PA in a negative way. Therefore, the PP is not monitoring. Since safeguarding principle is not impacted, the verification team found it acceptable for PP to not monitor this principle.
	4.2.3 Landscape modification and soil	Does the Project involve the use of land and soil for production of crops or other products?	No	The safeguarding principle is not impacted by the PA because the project implemented in barren land. Therefore, the PP is not monitoring. Since safeguarding principle is not impacted, the verification team found it acceptable for PP to not monitor this principle.
	4.3.2 Vulnerability to Natural Disaster	Will the Project be susceptible to or lead to increased vulnerability to wind, earthquakes, subsidence, landslides, erosion, flooding, drought or other extreme climatic conditions?	No	The safeguarding principle is not negatively impacted by the PA. It will protect the ecosystem around the activity area, which in turn will protect against natural disasters. Therefore, the PP is not monitoring. Since safeguarding principle is not impacted negatively, the verification team found it acceptable for PP to not monitor this principle.
	4.3.3 Genetic Resources	Could the Project be negatively impacted by the use of	No	The safeguarding principle is not impacted by the PA, therefore the PP is not monitoring. Since

	genetically modified organisms or GMOs (e.g., contamination, collection and/or harvesting, commercial development)?		safeguarding principle is not impacted, the verification team found it acceptable for PP to not monitor this principle.
4.3.4 Release of pollutants	Could the Project potentially result in the release of pollutants to the environment?	No	The safeguarding principle is not impacted by the PA; being renewable energy generation. The verification team found it acceptable for PP to not monitor this principle.
4.3.5 Hazardous and Non-hazardous Waste	Will the Project involve the manufacture, trade, release, and/ or use of hazardous and non-hazardous chemicals and/or materials?	No	The safeguarding principle is not impacted by the PA; being renewable energy generation. The verification team found it acceptable for PP to not monitor this principle.
4.3.6 Pesticides and fertilizers	Will the Project involve the application of pesticides and/or fertilisers?	No	The safeguarding principle is not impacted by the PA; being renewable energy generation. The verification team found it acceptable for PP to not monitor this principle.
4.3.7 Harvesting of forests	Will the Project involve the harvesting of forests?	No	The safeguarding principle is not impacted by the PA because no forests are harvested during this project; therefore, the PP is not monitoring. Since safeguarding principle is not impacted, the verification team found it acceptable for PP to not monitor this principle.
4.3.8 Food	Does the Project modify the quantity or nutritional quality of food available such as through crop regime alteration or export or economic incentives?	No	The safeguarding principle is not impacted by the PA; being renewable energy generation. The verification team found it acceptable for PP to not monitor this principle.
4.3.9 Animal Husbandry	Will the Project involve animal husbandry?	No	The safeguarding principle is not impacted by the PA; being renewable energy generation. The verification team found it acceptable for PP to not monitor this principle.
4.3.10 High	Does the Project physically affect or	No	The safeguarding principle is not impacted by the PA;

	Conservation Value Areas and Critical Habitats	alter largely intact or High Conservation Value (HCV) ecosystems, critical habitats, landscapes, key biodiversity areas or sites identified?		being renewable energy generation and not affecting or alter largely intact or High Conservation Value (HCV) ecosystems, critical habitats, landscapes, key biodiversity areas. The verification team found it acceptable for PP to not monitor this principle.	
	4.3.11 Endangered Species	1. Are there any endangered species identified as potentially being present within the Project boundary (including those that may route through the area)? 2. Does the Project potentially impact other areas where endangered species may be present through transboundary affects?	No	The safeguarding principle is not impacted by the PA; being renewable energy generation and not affecting endangered species or transboundary movements of the migratory birds/animals. The verification team found it acceptable for PP to not monitor this principle.	
Findings	None				
Conclusion	All the safeguarding principles have been monitored appropriately by the implementer.				

E.9. Assessment of data and calculation of emission reductions or net removals

E.9.1. Calculation of baseline GHG emissions or baseline net GHG removals by sinks

Means of verification	The baseline emissions are calculated as per provisions indicated in the registered PDD[/1/] and applied methodology[/3/]. Baseline emissions are calculated as follows: $BE_y = EG_{PJ,y} \times EF_{grid,CM,y}$ Where, $EG_{PJ,y}$ = Total quantity of net electricity delivered to the INDIAN grid $EF_{grid,CM,y}$ = Baseline emission factor = 0.9777 tCO_2/MWh BE_y = 205901.33 x 0.9777 = 201,309 tCO_2 The value of baseline emission achieved after applying the formulae is 201,309 tCO_2e (Rounddown value). All the data was made available and have monitored as per required monitoring frequency. The baseline emissions are calculated as per provisions indicated in the registered PDD[/1/] and applied methodology[/3/]. The means of verification for the values of parameters, used for baseline emission calculation, is described in the section E.6.2 of this report.

	The expressions given in this regard under section E.1 of MR[/6/] were found consistent with the registered PDD[/1/] and applied methodology[/3/]. The explanation of formulae in the MR[/6/] and ER sheet[/7/] is adequate and consistent.
Findings	No finding raised
Conclusion	The verification team confirms that appropriate methods and formulae for calculating baseline emissions have been followed. The assumptions, emission factors and default values that were applied in the calculations are justified.

E.9.2. Calculation of project GHG emissions or actual net anthropogenic GHG removals by sinks

Means of verification	The verification team assessed whether the data and calculations of GHG emission reductions achieved resulting from the registered CDM project activity. The verification team has checked whether calculations of baseline GHG emissions, project GHG emissions and leakage GHG emissions have been carried out in accordance with the formulae and methods described in the registered monitoring plan[/1/].
Findings	No findings raised
Conclusion	Project emission is zero as per the requirement of the methodology and registered PDD[/1/].

E.9.3. Calculation of leakage GHG emissions

Means of verification	The verification team assessed whether the data and calculations of GHG emission reductions achieved resulting from the registered CDM project activity. The verification team has checked whether calculations of baseline GHG emissions, project GHG emissions and leakage GHG emissions have been carried out in accordance with the formulae and methods described in the registered monitoring plan.
Findings	No findings were raised.
Conclusion	The leakage emissions are regarded as zero according to the applied methodology[/3/] and registered PDD[/1/].

E.9.4. Summary calculation of GHG emission reductions or net anthropogenic GHG removals by sinks

Means of verification	The final verified Emission Reductions in the current monitoring period are as under; Monitoring Period: 06/11/2017 to 01/04/2019 (Inclusive of both days) Baseline Emissions: 201,309 tCO2e Project Emissions: 0 tCO2e Leakage Emissions: 0 tCO2e **Emission Reductions: 201,309 tCO2e** The value of baseline emission obtained by applying the equations provided in the registered PDD[/1/] are 201,309 tCO_2e. The project emissions and leakages for the project activity are considered as zero. Therefore, the final value of net GHG emission reductions obtained is **201,309** tCO_2e.
Findings	No findings
Conclusion	a) A complete set of data for the specified monitoring period was available, on all occasions based on the activity level of the parameters; b) The information provided in the monitoring report[/6/] and corresponding spreadsheet[/7/] has been cross checked; c) The assessment team confirms that the formulae for calculating baseline and project emissions (BE and PE) are in accordance with monitoring plan contained in the registered PDD[/1/] and applied methodology[/3/]. d) There are no leakages in accordance with applied methodology and registered PDD[/1/]. e) The assumptions/emission factors used in emission calculations have been correctly applied and are justified.

E.9.5. Comparison of actual GHG emission reductions or net anthropogenic GHG removals by sinks with estimates in registered PDD

Means of verification	The actual emission reduction achieved in the monitoring period is 201,309 tCO_2e, whereas the estimated ERs in the registered PDD/1/ is 167,465 tCO2e. Actual emission reduction is 20.21% higher than the emission reductions for the considered monitoring period.
Findings	No findings.
Conclusion	Justification of higher emission reductions have been provided in the section E.6 of the MR/6/. The explanation was found satisfactory. Thus, the comparison between the actual GHG emission reductions and the estimated GHG emission reductions was found to be ok.

E.9.6. Remarks on difference from estimated value in registered PDD

Means of verification	According to the Project participant, the emission reductions have increased from the estimated emission reduction. The increase in ER is due to higher PLF (=Plant Load Factor) & more number of higher sunny days which is evident from the JMR sheets/9/. Further, increased PLF during this monitoring period is lower than the benchmark breaching value for the PLF is 23.94% and revised IRR sheet with increased PLF is submitted by PP & found that it does not cross the benchmark value. Hence accepted by verification team.
Findings	No findings
Conclusion	The explanation provided by the project participant for the increased emission reductions than estimated was found acceptable.

E.9.7. 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	The verification team has determined the GHG emission reductions achieved during first commitment period and second commitment period
Findings	There is no CAR/CL raised in this section.
Conclusion	1. GHG emission reductions or net GHG removals by sinks reported up to 31 December 2012: 0 tCO_2e 2. GHG emission reductions or net GHG removals by sinks reported from 1 January 2013 onwards: 201,309 tCO_2e (Monitoring period starting from 01/01/2013)

E.10. Assessment of reported sustainable development co-benefits

Means of verification	NA
Findings	NA
Conclusion	NA

E.11. Global stakeholder consultation

Means of verification	NA
Findings	NA
Conclusion	NA

SECTION F. Internal quality control

The draft verification report that is prepared by verification team is reviewed by an independent technical review team (one or more members) to confirm if the internal procedures established and implemented by Earthood were duly complied with and such opinion/conclusion is reached in an objective manner that complies with the applicable CDM/GS rules/requirements. The technical review team is collectively required to possess the technical expertise of all the technical area/sectoral scope the project activity relates to. All team members of technical review team are independent of the verification team.

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

The decision taken by the Technical Reviewer is final and is authorized on behalf of Earthood Services Private Limited.

SECTION G. Verification opinion

Earthood Services Private Limited (Earthood), contracted by Fortum FinnSurya Energy Private Limited, has performed the independent verification of the emission reductions for the CDM project activity 10403 "70 MW Bhadla Solar power plant by Fortum Finnsurya Energy Pvt Ltd (EKIESL-CDM-APRIL-16-01)" in India for the monitoring period 06/11/2017 to 01/04/2019 (including both days) as reported in the Monitoring Report (public) Version 1 dated 26/04/0219 and Monitoring Report (Final) Version 02 dated 18/09/2019. Fortum FinnSurya Energy Private Limited is responsible for the collection of data in accordance with the monitoring plan and the reporting of GHG emissions reductions from the project activity.
Earthood commenced the verification on the basis of the baseline and monitoring methodology ACM0002: Grid-connected electricity generation from renewable sources Version 17.0, the monitoring plan contained in the CDM PDD Version 2 dated 04/08/2017, Monitoring Plan contained in CDM PDD/1/, GS Passport/19/ & Transition Annex/20/ and GS MR version 01 dated 01/08/2019.

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

The verification team confirms that the project activity was found completely implemented as per the description given in the registered CDM PDD, GS Passport & Transition Annex and the actual operation conforms to the description in the registered CDM PDD.

SECTION H. Certification statement

It is our responsibility to express an independent verification statement on the reported GHG emission reductions from the project activity.

In our opinion the GHG emissions reductions reported for the project activity for the period 06/11/2017 to 01/04/2019 (including both days) are fairly stated in the Monitoring Report (final) Version 02 dated 18/09/2019. The GHG emission reductions were calculated correctly on the basis of the approved baseline and monitoring methodology ACM0002: Grid-connected electricity generation from renewable sources Version 17.0 and the monitoring plan contained in the PDD Version 2 dated 04/08/2017.

Earthood Services Private Limited is able to certify that the emission reductions from the CDM project activity 10403 "70 MW Bhadla Solar power plant by Fortum Finnsurya Energy Pvt Ltd (EKIESL-CDM-APRIL-16-01)" in India during the period 06/11/2017 to 01/04/2019 (including both days) amount to 201,309 tCO_2e.

Verified and certified emission reductions (for current monitoring period) as per commitment period:

Commitment period	**Amount**
Upto 31/12/2012 (1st commitment period)	Nil
From 01/01/2013	201,309 tCO_2e

Appendix 1. Abbreviations

Abbreviations	Full texts
AS	Accreditation Standard
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CDM PCP for PA	Clean Development Mechanism Project Cycle Procedure for Project Activities
CDM PS for PA	Clean Development Mechanism Project Standard for Project Activities
CDM VVS for PA	Clean Development Mechanism Validation and Verification Standard for Project Activities
CER	Certified Emission Reduction(s)
CL	Clarification Request
CPCB	Central Pollution Control Board
DOE	Designated Operational Entity
DNA	Designated National Authority
EB	Executive Board
Earthood	Earthood Services Private Limited
FAR	Forward Action Request
GHG	Greenhouse Gas(es)
GOI	Government Of India
IR	Internal Resource
IPCC	Intergovernmental Panel on Climate Change
MOEF	Ministry of Environment and Forests
MR	Monitoring Report
MW	Mega Watt
NTPC	National Thermal Power Corporation
PA	Project Activity
PDD	Project Design Document
PP	Project Participants
PPA	Power Purchase Agreement
QA/QC	Quality Assurance / Quality Control
MP	Monitoring Plan
RSDCL	Rajasthan Solarpark Development Company Limited
RVPN	Rajasthan Vidyut Prasaran Nigam
SEB	State Electricity Board
tCO2e	tonnes of Carbon dioxide equivalent
UNFCCC	United Nations Framework Convention on Climate Change
VCR	Verification and Certification Report

Appendix 2. Competence of team members and technical reviewers

Competence Statement			
Name	Atul Takarkhede		
Education	Ph.D. Environmental Science		
Experience	12 years		
Field	Climate Change and environment		
Approved Roles			
Team Leader	YES		
Validator	NO		
Verifier	NO		
Methodology Expert	NO		
Local expert	NO		
Financial Expert	NO		
Technical Reviewer	NO		
TA Expert	YES (1.2)		
Reviewed by	Shreya Garg	**Date**	24/04/2019
Approved by	Anshika Gupta	**Date**	25/04/2019

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

Competence Statement	
Name	Anshika Gupta
Country	India
Education	M.Sc. (Climate Science & Policy), TERI University

Experience	4 Years +		
Field	Climate Change		
Approved Roles			
Team Leader	YES		
Validator	YES		
Verifier	YES		
Methodology Expert	AMS-I.A., AMS-II.G., ACM0002, AMS-III.A.V.		
Local expert	YES (India)		
Financial Expert	NO		
Technical Reviewer	YES		
TA Expert	Yes (TA 1.2, TA 3.1)		
Reviewed by	Shreya Garg	**Date**	12/03/2019
Approved by	Kaviraj Singh	**Date**	12/03/2019

Appendix 3. Documents reviewed or referenced

No.	Author	Title	References to the document	Provider
1.	PP	Registered CDM PDD	Version 2 dated 04/08/2017	Others
2.	Applus	Validation report by Applus Certification	Version 2, 16/08/2017	Others
3.	UNFCCC	ACM0002: Grid-connected electricity generation from renewable sources	Version 17.0	Others
4.	UNFCCC	CDM project standard for project activities	Version 02	Others
5.	UNFCCC	CDM Validation and Verification Standard for project activities	version 02	Others
6.	PP	Monitoring Report (Published) Monitoring Report (Final)	Version: 01 Dated: 26/04/2019 Version: 02 Dated: 18/09/2019	PP
7.	PP	ER sheet ER sheet (Final)	Version: 01 Dated: 17/07/2019 Version: 02 Dated: 18/09/2019	PP
8.	Rajasthan Renewable Energy Corporation Limited.	Commissioning certificates from Rajasthan Renewable Energy Corporation Limited	12/04/2017	PP
9.	RSDCL	JMR (monthly credit notes) covering monitoring period from Rajasthan Vidyut Prasaran Nigam (RVPN)	-	PP
10.	PP	Invoices raised by PP covering monitoring period	-	PP
11.	PP	O&M reports for controller meter readings (DGR)	-	PP
12.	RVPN	Approval Letter for metering arrangement for Fortum Solar Project from Rajasthan Vidyut Prasaran Nigam (RVPN)	11/01/2017	PP
13.	UNFCCC	CDM-MR-FORM	version 7.0	Others
14.	CEA	CEA database	Version 11	Others
15.	RRVPNL	Calibration certificates for meters of 220 KV GSS Calibration certificates for meters of 400 KV GSS-II, Badla	13/03/2018 23/10/2017	PP
16.	PP	Training records for year 2018 & 2019	-	PP
17.	PP	Breakdown record for the monitoring period	-	PP
18.	PP & NTPC	Power Purchase Agreement	25/04/2016	PP
19.	PP	Gold Standard Passport for the project activity	Dated 09/01/2018, Version 03	PP
20.	PP	Gold Standard for the Global Goals Transition Annex for GS5519	NA	PP

No.	Author	Title	References to the document	Provider
21.	PP	Records of the CSR activities carried out in project area by PP	NA	PP

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

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

FAR ID	XX	**Section no.**	E.2	**Date :** 24/06/2019
Description of FAR				
There is no FAR from the validation of the project activity				
Project participant response				**Date :** DD/MM/YYYY
NA				
Documentation provided by project participant				
NA				
DOE assessment				**Date:** DD/MM/YYYY
NA				

Table 2. CL from this verification

CL ID	XX	**Section no.**		**Date :** 24/06/2019
Description of CL				
NA				
Project participant response				**Date :** DD/MM/YYYY
NA				
Documentation provided by project participant				
NA				
DOE assessment				**Date:** DD/MM/YYYY
NA				

Table 3. CAR from this verification

CAR ID	01	**Section no.**	GS MR	**Date:** 02/08/2019
Description of CAR				
PP requested to submit GS MR for the project activity in addition to GS Passport and Transition Annex.				
Project participant response				**Date:** 03/08/2019
GS MR, GS Passport and GS4GG transition Annex is being submitted.				
Documentation provided by project participant				
GS MR, GS Passport and Transition Annex				
DOE assessment				**Date:** 11/09/2019
PP has submitted GS MR. Same have been checked and found complete. CAR closed.				

CAR ID	02	**Section no.**	GS MR/Transition Annex	**Date:** 02/08/2019
Description of CAR				
Further to employment records submitted, PP requested to submit employment records including salary slips for the employees; 1. Mr. Kasam Khan 2. Mr. Bharat Sen 3. Mr. Mool Singh.				
Project participant response				**Date:** 05/08/2019
Mr. Bharat Sen and Mr. Mool Singh are regular employee at the project site however Mr. Kasam khan is a driver by profession and called upon once his service is required. Salary slips for regular employee and undertaking for Mr Kasam Khan are being provided.				
Documentation provided by project participant				
Salary slip and undertaking letter				

DOE assessment	**Date:** 11/09/2019
Documents submitted by PP have been checked and found correct. Same are also matching with onsite observations. CAR closed.	

CAR ID	03	**Section no.**	GS MR/Transition Annex	**Date:** 02/08/2019
Description of CAR				
PP requested to submit Grievance registrar maintained.				
Project participant response				**Date:** 05/08/2019
Grievance register maintained at site is being provided.				
Documentation provided by project participant				
Grievance register				
DOE assessment				**Date:** 11/09/2019
PP has submitted copy of the Grievance register. No major grievance or complaint observed. CAR closed.				

CAR ID	04	**Section no.**	GS MR/Transition Annex	**Date:** 02/08/2019
Description of CAR				
PP requested to submit attendance records of the trainings provided towards occupational health and safety of the employees.				
Project participant response				**Date:** 05/08/2019
Occupational health safety's attendance records of the employees is being provided.				
Documentation provided by project participant				
Attendance Record and training calendar.				
DOE assessment				**Date:** 11/09/2019
PP has submitted training calendar for the training conducted during year 2018 & 2019 along with attendance sheets for details of attendees. CAR closed.				

CAR ID	05	**Section no.**	GS MR/Transition Annex	**Date:** 02/08/2019
Description of CAR				
PP requested to submit CSR activities taken by the PP in the project activity area towards uplift standard of living.				
Project participant response				**Date:** 05/08/2019
CSR activities are organised at site on regular intervals in order to improve the overall social and economic status. CSR reports of the monitoring duration is being provided.				
Documentation provided by project participant				
CSR reports				
DOE assessment				**Date:** 11/09/2019
PP has submitted CSR activity records taken in the nearby areas towards uplift standard of living of the nearby population. The need based CSR activities through community development programmes is carried out by PP. Thus, CAR closed.				

Table 4. FAR from this verification

FAR ID	XX	**Section No.**		**Date :** DD/MM/YYYY
Description of FAR				
There is no FAR from this verification				
Project participant response				**Date :** DD/MM/YYYY
NA				
Project participant response				
NA				
Project participant response				**Date:** DD/MM/YYYY
NA				
Project participant response				

Appendix 5. Calibration Details

Calibration details for 132/220 KV RSDCL GSS II:

Meter Details (Main Meter)	
Sr. No.	16195106
Make	L&T
Accuracy Class	0.2s
Initial Meter Calibration Date	12/01/2017
Calibration Date	13/03/2018
Due date of Calibration Date	13/03/2023

Meter Details (Check Meter)	
Sr. No.	16195107
Make	L&T
Accuracy Class	0.2s
Initial Meter Calibration Date	12/01/2017
Calibration Date	13/03/2018
Due date of Calibration Date	13/03/2023

Calibration details for 220/400 KV RRVPNL GSS:

Meter Details (Bay 5)		
Sr. No.	16195149 (Main Meter)	16195153 (Check Meter)
Make	L&T	L&T
Accuracy Class	0.2s	0.2s
Calibration Date	23/10/2017	23/10/2017
Due date of Calibration Date	22/10/2022	22/10/2022

Meter Details (Bay 6)		
Sr. No.	16195151 (Main Meter)	16195243 (Check Meter)
Make	L&T	L&T
Accuracy Class	0.2s	0.2s
Calibration Date	23/10/2017	23/10/2017
Due date of Calibration Date	22/10/2022	22/10/2022

Document information

Version	*Date*	*Description*
03.0	31 May 2019	Revision to: • 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
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History of the document*						
Version	Date of issue	Nature of Revision	Prepared by		Reviewed by	
			Name	Date	Name	Date
2.0	11/06/2019	Adoption of latest forms	Shreya Garg	11/06/2019	Anshika Gupta	13/06/2019
1.0	04/05/2018	Guidelines updated	Shreya Garg	04/05/2018	Anshika Gupta	04/05/2018
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