Verification and certification report form for CDM project activities

(Version 03.0)

BASIC INFORMATION	
Title and UNFCCC reference number of the project activity	**Title**: Solar Power Project by Fortum FinnSurya Energy Pvt Ltd **UNFCCC reference number:** 10404
Scale of the project activity	☒ Large-scale ☐ Small-scale
Version number of the verification and certification report	02
Completion date of the verification and certification report	05/01/2021
Monitoring period number and duration of this monitoring period	02 Monitoring period: 02/04/2019 to 31/07/2020[1] (Including both dates)
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	1. Fortum FinnSurya Energy Private Limited (India) 2. EKI Energy Services Limited (Australia)[2]
Host Party	India
Applied methodologies and standardized baselines	ACM0002: Grid-connected electricity generation from renewable sources, Version 17.0 Standardized baseline: N/A
Mandatory sectoral scopes	Sectoral scope – 01 Energy industries (renewable - / non-renewable sources)
Conditional sectoral scopes, if applicable	N/A
Estimated amount of GHG emission reductions or GHG removals for this monitoring duration in the registered PDD	236,657 tCO_2e
Certified amount of GHG emission reductions or GHG removals for this monitoring period	261,792 tCO_2e
Name and UNFCCC reference number of the DOE	KBS Certification Services Private Limited (KBS) Ref. No. E-0051
Name, position and signature of the approver of the verification and certification report	Mr. Kaushal Goyal

[1] PP has voluntarily revised the duration of monitoring period from (02/04/2019-01/08/2020) to (02/04/2019-31/07/2020).
[2] Is a project participant as per LoA dated 19/06/2020, available on UNFCCC web page https://cdm.unfccc.int/Projects/DB/Applus1506003752.87/view

	Managing Director

SECTION A. Executive summary

>> KBS Certification Services Private Limited has been commissioned by "EKI Energy Services Limited" to perform an independent verification of its registered CDM project, "Solar Power Project by Fortum FinnSurya Energy Pvt Ltd", UNFCCC Reference No. 10404, for the reported GHG emission reductions for the given monitoring period 02/04/2019 to 31/07/2020 (both dates included). The CDM projects must undergo independent third-party verification and certification of emission reductions as the basis for issuance of Certified Emission Reductions (CERs).

The objectives of this verification exercise are, by review of objective evidence, to establish that:

- The project activity has been implemented and operated as per the registered PDD and that all physical features (technology, project equipment, and monitoring and metering equipment) of the project are in place;
- Monitoring report and other supporting documents are complete;
- The actual monitoring systems & procedures and monitoring report conforms with the requirements of the approved monitoring plan and the approved monitoring methodology;
- The data is recorded and stored as per the monitoring methodology and approved monitoring plan.

Scope:

The scope of the verification is the independent and objective review and ex post determination of the monitored reductions in GHG emission by the project activity. The verification is based on review of monitoring report, supporting information and

a) The registered PDD, including the monitoring plan and the corresponding validation opinion(s);
b) Previous verification reports, deviation requests, requests for revision of monitoring plan;
c) Monitoring report for the monitoring period under verification including CER calculations sheets and all supporting documents;
d) The applied monitoring methodology;
e) Relevant decisions, clarifications and guidance from the CMP and the CDM Executive Board;
f) All information and references relevant to the project activity's resulting in emission reductions
g) The project is assessed against the requirements of the Kyoto Protocol, the CDM Modalities and Procedures and related rules and guidance.

KBS has, based on the recommendations in the latest version of CDM Validation and Verification Standard for project activity, employed a rule-based approach in the verification, focusing on the identification of significant reporting risks and the reliability of project monitoring.

Description of project:

The project activity consists of a solar photovoltaic technology with an installed capacity of 100 MW at Thirumani, Tumkur, Karnataka. The project was commissioned in 2 phases of 50MW each on Plot 30 and 31, with the commissioning date of both in the first week of December (Commissioning date of B-30 is 05/12/2017 and Commissioning date of B-31 is 02/12/2017) /8/. The electricity generated by the project activity is sold to NTPC Vidyut Vyapar Nigam Limited (NVVNL), on behalf of NTPC[3] , to be exported to grid, under a long term power purchase agreement/7/, which is valid for 25 years. The project displaces power generation using fossil fuels and hence leads to a reduction in greenhouse gas emissions. Fortum FinnSurya Energy Private Limited (hereinafter referred as FFEPL) has developed the project.

Methodology:

KBS follows a rule based verification approach, wherein, as a first step, the contract review is undertaken as per latest version of CDM Accreditation Standard. Subsequently, after the contract is signed, the monitoring

[3] NTPC has been identified by the Government of India as the Implementation Agency for setting up of Grid-connected Solar PV Projects under the State Specific Building Scheme and for facilitating purchase & sale of 33kV or above Grid-connected solar PV under the National Solar mission of India (GoI).

report of the project activity is made publicly available at UNFCCC website as per CDM procedures. A desk review of the project documentation is undertaken, which is followed by a remote audit by the members of verification team in accordance with the latest version of CDM VVS. The verification protocol is filled by the verification team that is based on standard auditing practices and version 02 of CDM VVS for project activities, to capture the assessment of applicable CDM requirements viz., version 02 of CDM Project Standard for project activities, registered PDD, applied methodology, applied standardized baseline and/or tools and recent decisions. The verification protocol provides transparent means to record the observations and compliances by the verification team members and the nonconformities, if any. The verification protocol is an internal document, and is available on request. Following are the major milestones for the verification under consideration.

Verification contract	27/08/2020
Remote audit (Skype interview)	23/10/2020
Draft Verification Report	16/12/2020
Final Verification Report	05/01/2021

KBS Certification Services Pvt. Ltd. confirms that the monitoring system is in place and the emission reductions are calculated without material misstatements.

Based on the information seen and evaluated we confirm that the implementation of the project has resulted in 261,792 tCO_2e emission reductions during period 02/04/2019 to 31/07/2020 (Including both the days).

SECTION B. Verification team, technical reviewer and approver

B.1. Verification team member

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)	Involvement in			
						Desk/document review	On-site inspection	Interviews	Verification findings
1.	Team Leader, Technical Expert (1.2), Local Expert	IR	Kandari	Sanjay	Central office	x	Remote audit	x	x
2.	Verifier	IR	Sharma	Shikha	Central office	x	Remote audit	x	x

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

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)
1.	Technical Reviewer (TA 1.2)	IR	Badaya	Rohit	Central office
2.	Manager (Technical & Certification)	IR	Chaudhari	Tushar Eknath	Central office
3.	Authorizer	IR	Goyal	Mr. Kaushal	Central office

SECTION C. Application of materiality/19/

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.	The data monitoring is done through electronic meters and errors can be perceived during the information transfer from the source to the emission reduction sheet.	High	There is only one parameter which is the Quantity of Net electricity supplied by the project to the grid in year y ($EG_{PJ,y}$) monitored through energy meters. Errors can be perceived during the information transfer from the source to the emission reduction sheet. There is no leakage emission during this monitoring period in compliance with the applied methodology and registered PDD.	The complete dataset for the monitoring parameter $EG_{PJ,y}$ was checked and it can be confirmed that the values are consistent with their sources/9//10/.

C.2. Consideration of materiality in conducting the verification

>> The prescribed thresholds for materiality, as per VVS PA, Version 02/16/.

Prescribed range of ERs/annum	500,000+	300,000+ to 500,000	300,000	SSC Pas	MSC PAs
Prescribed Threshold	0.5%	1.0%	2.0%	5.0%	10.0%

The identified/selected materiality threshold for the project activity under current monitoring period is 2.0% as project activity is a Large-scale CDM PA and the ERs achieved are less than 300,000 tCO2e.

	MR Version (Draft)/01/	MR Version (Final)/02/
Emission reductions	221,153 tCO_2e	261,792 tCO_2e
Identified Threshold	2.0%	2.0%

Increase in emission reductions in the final version of MR /2/ has been observed due to the fact the net electricity export value for the period (01/05/2020- 01/07/2020) was found to be missing in the ER sheet. Verification team has checked the 100% values of daily reported data. The complete dataset for the project activity was checked and it can be confirmed that the values are consistent with their sources. The assessment team confirms that the reported emission reductions are free from material errors, omissions or misstatements.

SECTION D. Means of verification

D.1. Desk/document review

>> A desk review is undertaken, involving but not limited to,

- A review of the data and information presented to verify their completeness;
- A review of the monitoring plan and monitoring methodology, paying 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.

The list of documents reviewed is included in the section ‘Appendix 3’ of this report.

D.2. On-site inspection

As a result of the COVID-19 pandemic, taking into account the CDM Executive Board announcement (paragraph 28 CDM-EB108) to relax mandatory site visits till 30 June 2021, rules of relevant national and local authorities (local to the DOE offices as well as to locality of the site visits), World Health Organization (WHO) recommendations, policies of the DOE and other relevant travel restrictions and guidance (for example, a requirement to self-isolate upon return from specific countries), A DOE may postpone site visits for onsite inspections required by the "CDM validation and verification standard for project activities (version 02.0) (VVS-PA)"/16/.

If the site visits cannot be postponed, a proper justification should be provided by the DOE why the site visits cannot be postponed, including the demonstration of a significant impact of delaying the site visits on the DOE, or project participants or coordinating/ managing entity (e.g. commitment/ timeline as per the validation or verification contract/20/, CER delivery commitment by project participants) reliance on applicable force majeure provisions in the validation or verification contracts, if needed.

KBS has contractual commitment for the verification process with PP and therefore, due to contractual obligations, the site visit cannot be postponed for an indefinite period of time. On consideration of the health risks posed by the COVID- 19 pandemic along with the dynamic nature of travel restrictions (throughout India), it has been determined that the physical site visit cannot be conducted in the current circumstances. Since, the site visit cannot be postponed but is not conducted due to the pandemic, DOE has used other standard auditing techniques (recommended by CDM EB) for verification as referred to in sections 9.1.3 of the VVS for PA /16/.

Verification team has used the following alternative means for its assessment and to justify that they are sufficient for the purpose of verification. Along with desk review, audit team has conducted remote audit interview as follows:

- A complete desk review of the MR, registered PDD, Joint Meter Reading, Invoices, Power Purchase Agreement, commissioning certificates, calibration certificates etc. as well as all applicable country legal requirement and supportive evidences have been checked by the verification team.
- Verification team has performed Microsoft Teams interview with PP in order to check implementation, project boundary, current situation, evaluation of data management, QA/QC system, monitoring and metering equipment, monitoring procedures, calibration etc. Interview questions were filled as per Verification team interview checklist and also videos were captured.
- Cross checks between information provided by interviewed personnel (i.e. by checking sources) to ensure that no relevant information has been omitted.
- Cross-check evaluation, for information received from interviews, under the scope of all information and references provided in MR and supporting documents.

Details of interviewees, topics covered and additional information presented in the below section "D.3 Interviews".

D.3. Interviews

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Sadevra	Vivek	Manager Sustainability, Fortum Gurugram	23/10/2020	1) Assessment of the implementation and operation of the project activity 2) Review of information flows for generating, aggregating and reporting of the monitoring parameters. 3) Monitoring Plan. 4) A cross-check between information provided in the MR and data from other sources. 5) Calibration performance, and observations of monitoring practices against the requirements of the PDD and the applied methodology. 6) ERs, and QA/QC procedures	Sanjay Kandari (Team Leader, Technical Expert (1.2), Local Expert) Shikha Sharma (Verifier)
2.	Narasimha Rao	P D V	Manager Asset Management, Fortum-Karnataka			
3.	Padhi	Jayanta	Assistant Manager			
4.	Prakash	Sahu	Manager, Climate change Operations			

D.4. Sampling approach

>> No Sampling Approach is used during verification.

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

Areas of verification findings	No. of CL	No. of CAR	No. of FAR
Compliance of the monitoring report with the monitoring report form	--	--	--
Compliance of the project implementation and operation with the registered PDD	--	CAR 01, CAR 02, CAR 03	--
Post-registration changes	--	--	--
Compliance of the registered monitoring plan with the methodologies including applicable tools and standardized baselines	--	--	--
Compliance of monitoring activities with the registered monitoring plan	--	--	--
Compliance with the calibration frequency requirements for measuring instruments	--	CAR 05	--
Assessment of data and calculation of emission reductions or net removals	--	CAR 04	--

Assessment of reported sustainable development co-benefits	--	--	--
Global stakeholder consultation	--	--	--
Others (Document requirement)	--	--	--
Total	00	05	00

SECTION E. Verification findings

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

Means of verification	Verification team checked the monitoring report/2/ with "Instructions for filling out the monitoring report form" mentioned as attachment to Monitoring report form (version 07.0)/18/.
Findings	No findings raised.
Conclusion	In accordance with §352 of CDM validation and verification standard for project activities, Version 02.0 /16/, verification team confirms that final monitoring report /2/ is completed using the latest valid version of the applicable monitoring report form /18/.

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

>>The current verification is for the second monitoring period of the project activity. All raised CARs and CLs were successfully closed during validation and previous verification. There is no pending FAR from validation and 1st verification to address during this monitoring period, as verified from the registered documents /5//6/.

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

Means of verification

The project activity is the operation of a solar power plant with an installed capacity of 100 MW (AC) or (125 MWp) at Thirumani, Tumkur, Karnataka. The promoter of the project activity is Fortum FinnSurya Energy Private Limited, as confirmed during the remote interview. The project was commissioned in 2 phases of 50MW each on Plot 30[4] and 31[5], with the commissioning date of both in the first week of December /8/. The project activity involves electricity generation using clean renewable energy source.

The geographical co-ordinates of the project activity have been checked through the means of Google earth software and verified to be as follows:

Location	Latitude (N)	Longitude (E)
Plot B-30	14° 14' 24.83"	77° 27' 54.45"
Plot B-31		

The technical specifications of the project activity, as confirmed from the name plates, and manufacturer's specifications /12/ are as follows:

Technical detail of the equipment	Pavagada 1 (plot 30)	Pavagada 2 (Plot 31)
No of Modules	543510	112.5 Wp:- 88000, 115 Wp:-370260, 117.5 Wp:- 85360
Make	First Solar	First Solar
Capacity	115 Wp	112.5Wp, 115Wp,117.5Wp
No of inverters	50	50

[4] Commissioning date of B-30 is 05/12/2017
[5] Commissioning date of B-31 is 02/12/2017

Make	TMEIC	TMEIC
Capacity	1000 kVA	1000 kVA
No. of transformers	13 (IDT) +2 (PT)	13 (IDT) +2 (PT)
Life	25 years	25 years

The above mentioned details are also consistent with the details mentioned in the registered PDD/4/. Through remote auditing (Microsoft teams application interview) and document review, the verification team confirms that all physical features of the project activity including technology, data collection systems and storage systems have been implemented in accordance with the registered project design document/4/. The project activity harnesses the solar energy available at project site to generate electricity and this generated electricity is sold to NTPC Vidyut Vyapar Nigam Limited (NVVNL), on behalf of NTPC[6] , to be exported to grid, under a long term power purchase agreement/7/, which is valid for 25 years.

The monitoring plan required for the ex-post monitoring of the Quantity of net electricity generation supplied by the project plant/unit to the grid ($EG_{PJ,y}$) is as per the registered monitoring plan/4/. The location of energy meters were found to be installed at the respective places as observed through single line diagram /12/, captured videos and photographs by the verification team.

The verification team has reviewed the power purchase agreement/7/ to confirm the power from the project activity is being supplied to the grid[7] in compliance to the applied methodology ACM0002: Grid-connected electricity generation from renewable sources, Version-17/15.1/ and registered PDD/4/.

The power from the project activity is being sold to NTPC Vidyut Vyapar Nigam Limited (NVVN), assessment team has reviewed the copy of invoices/10/ raised by the project proponent to the buyer to confirm the same.

The rated capacity of solar PV modules, location/identification number, meter serial number and make were verified from the name plates /12/ and the photographic evidences /12/ and found to be consistent with the information provided in the MR/2/.

The project boundaries and all key equipment are in line with the registered PDD/4/. The verification team confirmed during the remote auditing (video conferencing) that the CDM project is completely operational and the name plate details of all key equipment's are in line with the registered PDD/4/.

The details of operation of solar PV modules installed were cross checked through interviews and found consistent. Some internal and external (grid) outages have been observed during the monitoring period as confirmed from the breakdown records /23/, which has not affected the applicability of the applied methodology as reported in the MR/2/.

The allocation of the responsibilities is followed as described in the registered PDD /4/. Routines for the archiving of data are defined and documented. Calculations, laid down in the monitoring report are in line with registered PDD /4/.

Interviews (refer section D.3 of this report) were carried out with the plant personals during the Microsoft teams application interview to verify the actual monitoring system practiced by PP. It was found that the plant personals are well aware of their roles & responsibilities. The actual monitoring system presently practiced

[6] NTPC has been identified by the Government of India as the Implementation Agency for setting up of Grid-connected Solar PV Projects under the State Specific Building Scheme and for facilitating purchase & sale of 33kV or above Grid-connected solar PV under the National Solar mission of India (GoI).

[7] Generated electricity is sold to NTPC[7] , to be exported to grid, under a long term power purchase agreement/7/, which is valid for 25 years.

complies with the monitoring plan provided in the registered PDD/4/ and the monitoring methodology/15.1/.

As per the registered PDD/4/, annual average of estimated electricity generation and estimated emission reduction over 7 years of crediting period are 181,417 MWh/year and 177,371 tCO_2e per year.

However, the actual emission reductions are 261,792 tCO_2e for the current monitoring period /3/, which is higher than the estimated emission reduction in registered PDD/04/ i.e., 236,657 tCO_2e for corresponding current monitoring period (487 days). This is due to the fact that an increase in sunshine hours was observed and the monitoring period covers two high electricity generation periods, as confirmed during the remote interview. The increase in PLF (22.91% for the current monitoring period, as compared to 20.00% considered during validation) of the project activity is the reason for increased emission reductions. The new IRR value of 15.03% due to the increase in PLF has been found within the breaching value of 15.28 % and therefore, the increase in PLF does not impact the additionality of the project activity.

Key revisions between the final MR /2/ against the webhosted version /1/

MR Section no.	**Brief description of the changes**	**Indicate relevant finding**
All sections	*The duration of monitoring period has been revised from (02/04/2019-01/08/2020) to (02/04/2019-31/07/2020). This has led to decrease in Length of monitoring period from 488 to 487 days.* The action has been taken voluntarily by the PP and is acceptable to the verification team.	-
All sections	*ERs have increased from 221,153 to 261,792 tCO_2e.* *This was due to missing values of electricity export considered during the period (01/05/2020- 01/07/2020).*	*Data was revised before the submission of supportive (ER sheet), hence no finding was raised.*
B.1	*Information on the implementation and actual operation of the project activity*	*CAR 03*
E.1, E.2	*Revision in baseline emissions and actual net removals due to addition of missing values of electricity export for the period (01/05/2020-01/07/2020).*	-
E.6	*Remarks on increase in emission reductions achieved were added*	-
Appendix 1	*Meter replacement dates have been mentioned*	*CAR 05*
Appendix 3	*ER calculation sheet has been attached in the Appendix 3 of the MR*	*CAR 04*

Findings

CAR 01, CAR 02, CAR 03 have been raised and successfully closed out. Refer to Appendix 4 for further details.

Conclusion

The verification team confirms that:

a) The project activity is implemented as per the registered PDD/4/, the project activity was fully operational during the monitoring period.
b) The actual operation of the proposed CDM project activity is in line to the registered PDD/4/, the power generated from the project activity is supplied to northern Indian grid.
c) No approvals of the deviation, request for revision in monitoring plan, request of notification or request for approval of changes from the project

	activity as described in the registered PDD/4/ were requested in the current monitoring period. d) The actual emission reductions are higher than the expected emission reductions for the current monitoring period, due to an increase in the no. of sunshine hours and increased PLF (as explained above and in section E.6 of the MR /2/); It has reviewed the registered PDD/4/, including the monitoring plan and the corresponding validation report/5/, previous MR and verification report/6/, the applied monitoring methodology/15.1/, relevant decisions from the CMP and the CDM EB and found that the final MR /2/ for this monitoring period is in line with all the above mentioned documents.

E.4. Post-registration changes

E.4.1. Temporary deviations from the registered monitoring plan, applied methodologies, standardized baselines or other methodological regulatory documents[8]

>> No Post Registration Changes have occurred during this monitoring period. Therefore, this section is not applicable.

E.4.2. Corrections

>> The geo-coordinates of the project site mentioned at the PDD V03 dated 21/12/2017 were found incorrect and actual project site is at different location but near to incorrect location provided. The new location was found consistent during last verification, as checked from the registered documents of the previous monitoring period/7/ and exact location has been updated in the section A.2. The nature of this correction is permanent. Detailed validation opinion is available in validation report for PRC version 02 dated 21/09/2019 /5/. The correction was already incorporated during the first verification dated 12/06/2020[9] (issuance date).

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

>> No changes to the start date of the crediting period has occurred during this monitoring period. Therefore, this section is not applicable.

E.4.4. Inclusion of a monitoring plan

>> No Post Registration Changes have occurred during this monitoring period. Therefore, this section is not applicable.

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

>> No Post Registration Changes have occurred during this monitoring period. Therefore, this section is not applicable.

E.4.6. Changes to the project design

>> No Post Registration Changes have occurred during this monitoring period. Therefore, this section is not applicable.

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

>> This section is not applicable.

[8] 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).

[9] https://cdm.unfccc.int/Projects/DB/Applus1506003752.87/iProcess/ESPL1560828781.38/view

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

Means of verification	The verification team was able to confirm that the monitoring plan contained in registered PDD/4/ and MR/2/ is in accordance with the approved methodology applied for the project activity i.e. ACM0002: Grid-connected electricity generation from renewable sources, Version-17/15.1/. All parameters stated in the monitoring plan /4/ and the applied methodology /15.1/ has been fulfilled in the current monitoring period. The discussion regarding each parameter has been elaborated in the further sections (E.6.1 and E.6.2) of this Verification report.
Findings	No findings have been raised.
Conclusion	As per para 357 and 358 of CDM VVS for project activity version 02.0 /16/, In the opinion of the verification team the monitoring plan of the registered PDD/4/ complies with the monitoring requirement of the applied approved methodology ACM0002: Grid-connected electricity generation from renewable sources, Version-17/15.1/ in the context of the project activity.

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

As per the registered PDD/4/, the following parameter is listed as fixed ex-ante parameter for estimating emission reductions.

Parameter	Value	Verification Assessment
$EF_{grid,OM,y}$ Operating Margin CO_2 emission factor in year y	0.9941 tCO_2e/MWh	The Operating Margin emission factor has been calculated as per Tool to calculate the emission factor for an electricity system, version 05" as 3-year generation weighted average using data for the years 2012-13, 2013-14, & 2014-15. The data is obtained from "CO2 Baseline Database for Indian Power Sector" version 11 /13/, published by the Central Electricity Authority, Ministry of Power, Government of India. The values are consistent with the registered PDD /4/ and hence accepted by the verification team.
$EF_{grid,BM,y}$ Build Margin CO_2 emission factor in year y	0.9285 tCO_2e/MWh	The Build Margin emission factor has been calculated as per Tool to calculate the emission factor for an electricity system, version 05" as 3-year generation weighted average using data for the years 2012-13, 2013-14, & 2014-15.

			The data is obtained from "CO2 Baseline Database for Indian Power Sector" version 11 /13/, published by the Central Electricity Authority, Ministry of Power, Government of India. The values are consistent with the registered PDD /4/ and hence accepted by the verification team.
	$EF_{grid,CM,y}$ Combined Margin CO_2 emission factor in year y	0.9777 tCO_2e/MWh	The combined grid emission factor has been calculated based on the data obtained from "CO2 Baseline Database for Indian Power Sector" version 11 /13/, published by the Central Electricity Authority, Ministry of Power, Government of India. The values are consistent with the registered PDD /4/ and hence accepted by the verification team.
Findings	No findings raised		
Conclusion	As per para 360 to 361 of CDM VVS for project activity version 02.0 /16/, the assessment team concludes that the ex-ante parameter of the project activity is in accordance with the registered monitoring plan /4/ and meets the requirements of the applied monitoring methodology/15.1/. The verification team confirms that the value used for grid emission factor (Fixed ex-ante for the 1st crediting period) for calculation of emission reduction is consistent with registered PDD/4/ and correctly applied in MR /2/ and emission reduction spread sheet /3/ and justified.		

E.6.2. Data and parameters monitored

Means of verification	Verification team confirms through remote audit (Microsoft teams application interview) verification and from the document review, the actual monitoring system complies with the monitoring plan mentioned in the registered PDD/4/. During the verification, the monitoring parameter of the registered monitoring plan /4/ have been verified with regard to the appropriateness of the verification method; the correctness of the values applied for ER calculation, the accuracy and applied QA/QC measures. The monitoring parameters have been measured / determined without material misstatements and is in line with all applicable standards and relevant requirements. The assessment for the monitoring parameter is given below: **Data/Parameter, Unit: EG PJ, y (MWh/year)**

	Discussion and verification assessment
Purpose of data	Baseline Emissions

	Monitoring equipment (type, accuracy class, serial number, calibration frequency, date of last calibration, validity)	Quantity of net electricity generation supplied by the project plant/unit to the grid in year y in MWh The technical details specified in the MR/2/ were found consistent with the actual records and on ground as checked during the remote auditing (video conferencing). The accuracy of the main and the check energy meters are 0.2s as verified during the remote audit (video conferencing), and through the pictures submitted by PP /12/, which is as per the registered PDD/4/ and hence acceptable. Under the current monitoring period, no delay in calibration has been observed, as confirmed from the calibration records/11/. During the current monitoring period, meters were replaced[10] on 26/12/2019 at 220/66 KV substation (See the meter details in section E.7). The Calibration of all the meters have been done by Bangalore Electricity Supply Company Limited /11/ which is accepted to the verification team. The calibration certificates /11/ are verified and found that the error in calibration test is within the accuracy class of the respective meter.	
	Measuring/Reading/ Recording frequency	Net electricity exported by the project activity to the grid is monitored continuously and recorded on monthly basis in the form of Monthly Joint meter readings (JMR) /9/. The measuring and recording frequency is in compliance with the registered PDD /4/ and the applied methodology /15.1/.	
	Data collection (from data generation, aggregation, to recording, calculation and reporting)	Net electricity exported by the project activity to the grid is monitored continuously and reported on monthly basis in form of Monthly Joint meter readings (JMR) /9/. However, since the monitoring period start date (02/04/2019) does not match the date of the billing cycle for April 2019, therefore the net electricity exported to the grid for April 2019, has been apportioned using the daily generation data from the standby meter which was found to be conservative and acceptable by the verification team. The details of roles and responsibilities for the monitoring is provided in the MR/2/. The plant personnel were interviewed during remote auditing and the assessment team confirms that the details as provided are followed at site and are effective reliable for the accounting of emission reductions. The verification team has verified all the JMRs/08/ for this monitoring period and confirms that the same values are applied in the ER calculation sheet /3/.	
	Verified value	267,764.00 MWh	
	Cross checks	The verification team has verified all the electricity bills/protocols /9/ for this monitoring period and confirms that the same values are applied in the ER calculation	

[10] As per the requirement of the Power Grid Corporation of India Limited (PGCIL) to improve metering practice.

		sheet /3/. The monthly reported data (under ER sheet /3/) was also cross-checked (as prescribed in the registered PDD/4/) with the invoices /10/ and conservative data was taken for the emission reduction calculation.
	QA/QC procedures applied	The energy meters were calibrated by state utility i.e. Bangalore Electricity Supply Company Limited/11/. For the details of calibrations of energy meters please refer the section E.7 of report.
Findings	No findings raised.	
Conclusion	As per para 360 to 361 of CDM VVS for project activity version 02.0 /16/, The assessment team concludes that the monitoring of the project activity is being carried out in accordance with the registered monitoring plan and meets the requirements of the applied monitoring methodology. The adequacy and compliance of the registered monitoring plan in the MR can be concluded to be conforming. The flow of the information from the point of generation up to reporting has been reviewed and found to be correct and appropriate meeting the requirements of the applied methodology/15.1/.	

E.6.3. Implementation of sampling plan

Means of verification	No sampling plan applied for the project activity. Therefore, this section is not applicable.
Findings	-
Conclusion	Not applicable.

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

Means of verification

Verification team has checked whether the calibration of the measuring equipment that has an impact on the claimed GHG emission reductions is conducted by the PP at a frequency specified in the monitoring plan/4/.

During the remote interviews, it was confirmed that the energy generation is metered by tri-vector electronic meters installed on the 220/66 KV Pooling substation and 400/220 KV substation. The metering point at both substations includes both main & check meters. The meters located at 400/220 KV substation are considered for billing purpose and the transmission losses between both substations are apportioned to each solar project developers in proportion to their generation. The calibration frequency for meters is once in 5 years, which is as per the registered PDD/4/ and it can be concluded that the calibration requirements have been met as verified from the calibration certificates /10/. Therefore, the verification team confirms that no calibration delay has been observed during the current monitoring period.

The calibration details of the monitoring equipment's corresponding to monitoring parameter is given in the below table:

For 220/66 KV substation

Plot	Phase	Main Meter Serial Number	Calibration Date	Meter Make	Accuracy Class
31	T2 F1	X0395942	09-07-2018	SECURE	0.2s
	T2 F2	X0395935	09-08-2018	SECURE	0.2s
30	T2 F3	X0395938	09-08-2018	SECURE	0.2s
	T2 F4	X0395939	09-08-2018	SECURE	0.2s

Plot	Phase	Check Meter Serial Number	Calibration Date	Meter Make	Accuracy Class
31	T2 F1	X0395940	20-12-2018	SECURE	0.2s
	T2 F2	X0395941	20-12-2018	SECURE	0.2s

30	T2 F3	X0395937	20-12-2018	SECURE	0.2s
	T2 F4	X0395936	20-12-2018	SECURE	0.2s

As per the requirement of Power Grid Corporation of India Limited (PGCIL) to improve metering practice, the existing meters was changed on 26/12/2019 carried out by state agency (BESCL). The same has been checked from the meter replacement document /11/.

The details of the new meters, as checked from the meter replacement document /11/ are as follows:

Phase	Old Main Meter	New Main Meter	Calibration Date	Due Date of Calibration	Accuracy Class
T2 F1	X0395942	LT-0819-A	26-12-2019	25-12-2024	0.2s
T2 F2	X0395935	LT-0822-A	26-12-2019	25-12-2024	0.2s
T2 F3	X0395938	LT-0833-A	26-12-2019	25-12-2024	0.2s
T2 F4	X0395939	LT-0841-A	26-12-2019	25-12-2024	0.2s

Phase	Old Check Meter	New Check Meter	Calibration Date	Due Date of Calibration	Accuracy Class
T2 F1	X0395940	LT-0820-A	26-12-2019	25-12-2024	0.2s
T2 F2	X0395941	LT-0823-A	26-12-2019	25-12-2024	0.2s
T2 F3	X0395937	LT-0835-A	26-12-2019	25-12-2024	0.2s
T2 F4	X0395936	LT-0844-A	26-12-2019	25-12-2024	0.2s

For 220/400 KV RRVPNL substation meters

Main Meter Serial Number	Check Meter Serial Number	Initial Meter Calibration	Calibration Date	Calibration due Date	Meter Make	Accuracy Class
18039145	18039140	03-07-2017	10-08-2018	10-08-2023	L & T	0.2s

Calibration frequency: Once in Five years as per registered PDD monitoring plan /04/.

The monitoring equipment's have been installed in the project activity according to registered monitoring plan /4/. The Calibration performance was checked from the calibration reports /11/ and found that the meters were within the respective accuracy level as verified from the calibration results. The Calibration of all the meters have been done by Bangalore Electricity Supply Company Limited /11/ and it has been observed that under the current monitoring period, there was no delay in calibration.

Findings	CAR 05 was raised and successfully closed. Refer to Appendix 4 for further details.
Conclusion	As per para 365 to 370 of CDM VVS for project activity version 02.0 /15/, the Verification team confirms that the calibration frequency is in line with the monitoring plan mentioned in the registered PDD /04/.

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

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

Means of verification	The calculation, applied formulae and the method for calculation of baseline emissions are in accordance with the registered PDD /4/ and are in line with the requirements of the applied methodology /15.1/. The formulae and the methods referred in the MR /2/ and the emission reduction calculation spread sheet/3/ for estimation of emission reduction complies with the corresponding formulae and methods in the registered PDD /4/. The ex-ante and validated fixed value of grid emission factor (0.9777 tCO_2e/MWh, registered PDD /4/) is taken into account for the calculation of baseline emissions. The verification team has checked all the monthly JMRs/9/ and invoices/10/ applicable for the monitoring period and found the monitoring parameters are monitored and recorded as per the monitoring plan in the registered PDD/4/. The verification team has crosschecked the CER sheet/3/ and monitoring report data with the monthly JMRs/9/ and invoices/10/ and found all the input values to be matching. As per registered PDD/4/, the baseline emissions (BEy) by the project activity during the monitoring period is: $\mathbf{BE_y} = EG_{PJ,y} * EF_{grid,CM,y}$ EGPJ,y = Total quantity of net electricity delivered to the INDIAN grid (now NEWNE Grid) EFgrid,CM,y = Baseline emission factor = 0.9777 tCO_2e /MWh BEy= 267,764 * 0.9777 = 261,792 tCO_2e Hence baseline emission for this monitoring period is 261,792 tCO_2e (Rounded down)
Findings	CAR 04 was raised and successfully closed. Refer to Appendix 4 for further details.
Conclusion	As per para 372 and 373 of CDM VVS for project activity version 02.0 /16/, Verification team concludes that the calculation provided in the monitoring report/2/, and emission reduction spread sheet/3/ are complete and reflect all the requirements of the monitoring plan/4/ and: a) All the monitored data pertaining to baseline calculation as required by the registered monitoring plan was available to PP, the same has been verified by the verification team. b) All the formula used for the baseline, was in line to the registered monitored plan/4/. c) The ex-post emission factors correctly sourced from the registered PDD/4/ and was found to be appropriate and justified.

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

Means of verification	Not applicable in accordance with applied methodology and registered PDD.
Findings	Nil.
Conclusion	Not Applicable

E.8.3. Calculation of leakage GHG emissions

Means of verification	Not applicable in accordance with applied methodology and registered PDD.
Findings	Nil.
Conclusion	Not Applicable

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

Means of verification	As per registered PDD/4/, the emission reductions ERy by the project activity during the monitoring period is equal to the baseline emission less project emission and leakage emission. Emission Reduction (ER) = Baseline emission – Project emission – Leakage emission (No leakage has been considered for the project activity.) ERy = BEy – PEy The project activity is solar powered renewable energy project. Therefore, project emissions are zero, as per the methodology /15.1/ =261,792- 0 =261,792 tCO2e The calculation provided in the ER sheet and MR was assessed appropriate by the verification team. The verification team confirms that a complete set of data for this monitoring period is available to verify the emission reduction calculation, and the same was found in accordance with the registered PDD/4/. The net electricity supplied to the grid has been sourced from the joint meter readings/9/, the same forms the basis of emission reduction calculation. The verification team has verified the net electricity generation for respective months by the project activity and found the values used are consistent between the JMR/9/ and ER sheet/3/. The same has been checked from the invoices raised by the project proponent to the buyer /10/. The daily generation data /23/ was also cross checked by the assessment team as an alternative check to ensure the correctness of reported value of net electricity supplied to grid. No lack of evidence and missing data were detected during this monitoring period. The verification team confirms that the emission reductions are real and measurable. No reporting risks have been identified for the data reported. All the monitored data are archived in electronic form. The data will be kept for the whole crediting period and 2 years after the last crediting period thereby meeting the requirement of the PDD. The verification team has checked and confirms that all the meters are calibrated. Thus, concludes no material risks in the claimed emission reduction for the applied period.
Findings	No finding has been raised.
Conclusion	As per para 372 and 373 of CDM VVS for project activity version 02.0/16/, Verification team concludes that the calculation provided in the monitoring report/2/, and emission reduction spread sheet/3/ are complete and reflect all the requirements of the monitoring plan/4/ and: a) All the monitored data as required by the registered monitoring plan was available to PP, the same has been verified by the verification team. b) All the formula used for the baseline, leakage and project emissions were in line to the registered monitored plan/4/. The ex-ante emission factors correctly sourced from the registered PDD/4/ and was found to be appropriate and justified.

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

Means of verification	The MR includes a comparison of the calculated actual emission reductions with the ex-ante calculated values in the registered PDD /4/. **Estimated Emission Reduction as per Registered/Approved PDD:** 236,657 tCO_2e /04/

	Actual Emission Reduction for the Monitoring Period | 261,792 tCO_2e/02/ In summary, verification team confirms that the actual emission reduction is higher than the estimate of the registered PDD /04/ for the current monitoring period. This is due to the fact that an increase in sunshine hours was observed and the monitoring period covers two high electricity generation periods, as confirmed during the remote interview. The increase in PLF (22.91% for the current monitoring period) of the project activity is the reason for increased emission reductions. The new IRR value of 15.03% due to the increase in PLF has been found within the breaching value of 15.28 % and therefore, the increase in PLF does not impact the additionality of the project activity.
Findings	Nil.
Conclusion	Verification team confirms that 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/4/ and corresponding spreadsheet/3/ has been crosschecked; 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/4/and applied methodology/15.1/. 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.8.6. Remarks on difference from estimated value in registered PDD

Means of verification	As per the registered PDD/4/, annual average of estimated electricity generation and estimated emission reduction over 7 years of crediting period are 181,417 MWh/year and 177,371 tCO_2e per year. However, the actual emission reductions are 261,792 tCO_2e for the current monitoring period /3/, which is higher than the estimated emission reduction in registered PDD/04/ i.e., 236,657 tCO_2e for corresponding current monitoring period. This is due to the fact that an increase in sunshine hours was observed and the monitoring period covers two high electricity generation periods, as confirmed during the remote interview. The increase in PLF (22.91% for the current monitoring period) of the project activity is the reason for increased emission reductions. The new IRR value of 15.03% due to the increase in PLF has been found within the breaching value of 15.28 % and therefore, the increase in PLF does not impact the additionality of the project activity.
Findings	Nil.
Conclusion	Justification of higher emission reductions as provided in the section E.6 of the MR /2/ was found satisfactory. Thus, the comparison between the actual GHG emission reductions and the estimated GHG emission reductions was verified to be accurate.

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

Means of verification	The monitoring period starts from 02/04/2019 and therefore falls after 01 January 2013, So the total ERs during the period pertains to the 2nd commitment period. 261,792 tCO_2e CERs have been verified during the current monitoring period.
Findings	CAR 02 was raised and successfully closed. Refer to Appendix 4 for further details.
Conclusion	261,792 tCO_2e CERs verified pertains to the 2nd commitment period.

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

Means of verification	Not reported by PP.
Findings	Refer above.
Conclusion	Refer above.

E.10. Global stakeholder consultation

Means of verification	Not applicable for this project since it is the second monitoring period.
Findings	Refer above.
Conclusion	Refer above.

SECTION F. Internal quality control

>> The draft verification report prepared by team leader is reviewed by an independent technical reviewer (having competence of relevant technical area himself/herself or through an independent technical area expert) to confirm the internal procedures established by KBS are duly followed and the verification report/opinion is reached in an objective manner and complies with the applicable CDM requirements.
The independent technical reviewer may approve or reject the draft verification report. The findings may be identified even at this stage, which needs to be satisfactorily resolved, before the request for issuance is submitted to UNFCCC. The final decision is taken by the Manager Technical and Certification. The technical reviewer and Manager T&C can be same person.
The final decision is authorized by Managing Director, KBS once the report is approved by the Manager T&C.

SECTION G. Verification opinion

>> The verification team confirms that the the evidence is of sufficient quantity, appropriate quality and reliable. The reported values, notation, units and sources in the monitoring report for all the monitoring parameters have been cross checked with the emission reduction sheet and monitoring report. During the course of verification and remote audit, the data submitted by PP was cross verified with the values mentioned in the emission reduction sheet/3/ and monitoring report/2/. The procedure for data monitoring, recording, transfer and compilation was also verified and found in compliance with the monitoring plan as mentioned in the registered PDD/04/.

Evidences (Documents/interview/remote audit) referred for verification of individual monitoring parameter and fixed parameters are defined in section E.6 above. It is confirmed by the assessment team that the reported emission reductions have been conservatively calculated. A list of referred documents for verification is also included in Appendix 3 of this report.

Based on the information seen and evaluated we confirm that the implementation of the project has resulted in 261,792 tCO_2e emission reductions during period from 02/04/2019 to 31/07/2020.

SECTION H. Certification statement

>> KBS Certification Services Private Limited has been commissioned by “EKI Energy Services Limited” to perform an independent verification of its registered CDM project, “Solar Power Project by Fortum FinnSurya Energy Pvt Ltd”, UNFCCC Reference No. 10404, for the reported GHG emission reductions for the given monitoring period 02/04/2019 to 31/07/2020 in the Monitoring Report Version 01 (first submission) dated 14/08/2020.

The verification is based on the validated and registered PDD /4/ and the monitoring report/2/ for this project. Our verification approach was based on the requirements as defined under the Kyoto Protocol, Marrakech accord, as well as those defined by the CDM Executive Board.

The management of the EKI Energy Services Limited is responsible for the preparation of the GHG emissions data and the reported GHG emissions reductions on the basis set out within the project Final Monitoring Report, version 02 dated 07/12/2020. The calculation and determination of GHG emission reductions from the project is the responsibility of the management of the EKI Energy Services Limited. The development and maintenance of records and reporting procedures are in accordance with the Monitoring Report Version 02 dated 07/12/2020.

It is our responsibility to express an independent GHG verification opinion on the GHG emissions and on the calculation of GHG emission reductions from the project for the period 02/04/2019 to 31/07/2020 based on the reported emission reductions in the Final Monitoring Report Version 02 dated 07/12/2020 for the same period.

Based on an understanding of the risks associated with reporting GHG emissions data and the controls in place to mitigate these, KBS planned and performed our work to obtain the information and explanations that we considered necessary to provide sufficient evidence for us to give reasonable assurance that this reported amount of GHG emission reductions for the period is fairly stated.

KBS confirms the following;

Reporting period: From 02/04/2019 to 31/07/2020

Verified and certified emission in the above reporting period:

	Amount	Unit
Baseline emissions (BE)	261,792	tCO_2e
Project emissions (PE)	0	tCO_2e
Leakage emissions (LE)	0	tCO_2e
Total CERs (02/04/2019 to 31/07/2020)	261,792	tCO_2e

Appendix 1. Abbreviations

Abbreviations	Full texts
BE	Baseline Emissions
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CDM EB	CDM Executive Board
CERs	Certified Emission Reductions
CL	Clarification Request
CO_2e	Carbon dioxide equivalent
COP	Conference of Parties
DNA	Designated National Authority
DOE	Designated Operational Entity
EF	Emission Factor
ERs	Emission Reductions
FAR	Forward Action Request
GHGs	Greenhouse Gas(es)
JMR	Joint Meter Reading
KP	Kyoto Protocol
kWh	Kilo Watt Hour
LE	Leakage Emissions
MR	Monitoring Report
MP	Monitoring Plan
MWh	Mega Watt Hour
NVVN	NTPC Vidyut Vyapar Nigam Limited
PE	Project Emissions
PDD	Project Design Document
PLF	Plant Load Factor
PS	Project Standard
PCP	Project Cycle Procedure
PP	Project Participant
QA/QC	Quality Assurance/Quality Control
UNFCCC	United Nations Framework Convention on Climate Change
VVS	Validation & Verification Standard

Appendix 2. Competence of team members and technical reviewers

Personnel Name:		**Sanjay Kandari**	
Qualified to work as:			
Team Leader	☒	Technical Expert	☒
Validator/Verifier	☒	Financial Expert	☒
Technical Reviewer	☒	Local Expert (India)	☒
Area(s) of Technical Expertise			
Sectoral Scope	**Technical Area**		
Energy Industries (renewable/non-renewable sources)	TA 1.1: Thermal energy generation from fossil fuels and biomass including thermal electricity from solar		
Energy industries (renewable/non-renewable sources)	TA 1.2: Energy generation from renewable energy sources		
Energy demand	TA 3.1. Energy Demand		
Waste Handling and Disposal	TA 13.1 Waste Handling and Disposal		

	TA 13.2 Manure
Approved by (Manager C & T)	Akhilesh Joshi
Approval date:	11/12/2015

Personnel Name:		**Ms. Shikha Sharma**	
Qualified to work as:			
Team Leader	☒	Technical Expert	☐
Validator/Verifier	☒	Financial Expert	☐
Technical Reviewer	☐	Local Expert	☐
Area(s) of Technical Expertise			
Sectoral Scope	**Technical Area**		
-	-		
Approved by (Manager C & T)	Sanjay Kandari		
Approval date:	03/11/2020		

Personnel Name:		**Rohit Badaya**	
Qualified to work as:			
Team Leader	☒	Technical Expert	☒
Validator/Verifier	☒	Financial Expert	☒
Technical Reviewer	☒	Local Expert (India)	☒
Area(s) of Technical Expertise			
Sectoral Scope	**Technical Area**		
Energy industries (renewable/non-renewable sources)	TA 1.1: Thermal energy generation from fossil fuels and biomass including thermal electricity from solar		
	TA 1.2: Energy generation from renewable energy sources		
Energy distribution	TA 2.1: Energy distribution		
Energy demand	TA 3.1. Energy Demand		
Waste Handling and Disposal	TA 13.1 Solid waste and wastewater TA 13.2 Manure		
Approved By	Manager Competency & Training		
Approval date:	29/12/2018		

Appendix 3. Documents reviewed or referenced

No.	Author	Title	References to the document	Provider
1.	PP	MR (Webhosted)	Version 01, dated 14/08/2020	PP
2.	PP	Final MR	Version 02 dated 07/12/2020	PP
3.	PP	ER Spread sheet	corresponding to MR Version 01 and Version 02	PP
4.	PP	Registered PDD https://cdm.unfccc.int/filestorage/1/Z/J/1ZJ84D5BCW936PFESNM7OYIALHXKQG/10404%20PDD_Clean.pdf?t=SDB8cWxkb21mfDChsR19pAjvLRU-Gu1hdzNE	Version 04, dated 18/09/2019	UNFCCC website
5.	Earthood Services Private Limited LGAI Technological Center, S.A. (LGAI Tech. Center S.A)	Revised Validation Report (Validation opinion on changes in PDD) https://cdm.unfccc.int/filestorage/P/I/6/PI6Z54HAS3EMJFOLT0VKG1BC7UR29D/10404%20PRC%20Validation%20Opinion.pdf?t=NUh8cWxkb256fDCvG8BlfMhcI5uhKX7emyLR Validation Report https://cdm.unfccc.int/filestorage/N/C/W/NCWMQTS09ORJ4ZX3E5HF68D27YBKVP/Untitled%20%28uploaded%2003%20Jan%2018%2015%3A50%3A55%29.pdf?t=d1p8cWxkb251fDA9bLLiuHI1XmAKxnvRhxid	Version 02, dated 21/09/2019 Version 02, dated 28/12/2017	UNFCCC website
6.	PP	MR for the previous (i.e. First) monitoring period (06/11/2017-01/04/2019) (https://cdm.unfccc.int/filestorage/Q/B/R/QBRAXMP5F31N2SCW89HOIDLYK7T6J0/MR%20UN%2010404.pdf?t=dXl8cWxkb3lwfDCceh9742LCPgS10tgD7vpp	Version 02, dated 18/09/2019	UNFCCC website

	Earthood Services Private Limited	Verification Report for 1st monitoring period (06/11/2017-01/04/2019) https://cdm.unfccc.int/filestorage/K/D/O/KDO3RS6BAP5X9NZ8VG4HY2CIQET7FU/10404%20Verification%20Report.pdf?t=TEV8cWxkcDQ4fDDoHk8_3nBlpH3y2qjgSPKD	Version 1.0, dated 21/09/2019	
7.	PP and NTPC Ltd.	Power Purchase Agreement for B-30 (50 MW Solar power on Long term basis, i.e valid for 25 years) Certificate No. IN-DL616702598746030 Power Purchase Agreement for B-31 (50 MW Solar power on Long term basis, i.e. valid for 25 years) Certificate No. IN-DL61670495959867O	Certificate issue date: 20/06/2020 PPA Effective date: 21/06/2020 Certificate issue date: 20/06/2020 PPA Effective date: 21/06/2020	PP
8.	Karnataka Solar Power development Corporation Limited	Commissioning certificate for B-30 Serial no. KSPDCL/F-78/2016-17/1623 Commissioning certificate for B-31 Serial no. KSPDCL/F-78/2016-17/1624	Certificate issue date: 02/01/2018 Commissioning date: 05/12/2017 Certificate issue date: 04/01/2018 Commissioning date: 02/12/2017	PP
9.	PP	Joint Meter readings covering the monitoring period (02/04/2019 to 31/07/2020)	-	PP
10.	PP	Invoices raised for the sale of electricity during the monitoring period (02/04/2019 to 31/07/2020)	-	PP
11.	Bangalore Electricity Supply Company Limited	Calibration/testing Certificates of energy meters covering the monitoring period (02/04/2019 to 31/07/2020) <u>Meter Replacement Documents</u> No. AEEE/HTR/2019-20/4063-66A No. AEEE/HTR/2019-20/4063-66B No. AEEE/HTR/2019-20/4063-66C	- Dated 26/12/2019	PP

		No. AEEE/HTR/2019-20/4063-66D		
12.	Manufacturing agency	Technical specifications of the meters, name plates (pictures) of the equipment's Single line diagram	-	PP
13.	CEA	CO_2 baseline database for Indian Power Sector http://cea.nic.in/reports/others/thermal/tpece/cdm_co2/user_guide_ver11.pdf	Version 11	Web link
14.	UNFCCC	Project webpage https://cdm.unfccc.int/Projects/DB/Applus1506003752.87/view	-	Web link
15.	UNFCCC	/15.1/ ACM0002- Grid-connected electricity generation from renewable sources /15.2/ Tool to calculate the emission factor for an electricity system	Version 17.0 Version 05.0	UNFCCC
16.	UNFCCC	CDM validation and verification standard for project activities	version 02	UNFCCC
17.	UNFCCC	CDM project standard for project activities	version 02	UNFCCC
18.	UNFCCC	CDM-MR-FORM - Monitoring report form for CDM project activity, Version 07.0: https://cdm.unfccc.int/Reference/PDDs_Forms/index.html	-	UNFCCC
19.	UNFCCC	Guidelines for Application of materiality in verifications version 2.0	-	Publicly available
20.	KBS	Verification contract	Dated 27/08/2020	KBS
21.	PP	Training records	April 2019- July 2020	PP
22.	Between PP and Belectric Photovoltaic India private Limited	Project site SOP O& M Agreement of B -30 and B-31	- 24/02/2020	PP
23.	PP	- Excel sheet of DGR for B-30 and B-31 - Scanned copies of Log book for standby meter and check meter readings	Jan 2019- July 2020	PP

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

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

No FARs raised from validation and previous verification

~~**FAR ID**~~	~~Xx~~	~~**Section no.**~~	~~XX~~	~~**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~~

Table 2. CL from this verification

No CL raised during the current verification.

~~**CL ID**~~		~~**Section no.**~~	~~**-**~~	~~**Date:**~~
~~**Description of CL**~~				
~~**Project participant response**~~				~~**Date:**~~
~~**Documentation provided by project participant**~~				
~~**DOE assessment**~~				~~**Date:**~~

Table 3. CAR from this verification

CAR ID	01	**Section no.**	E.3	**Date:** 23/10/2020
Description of CAR				
Under section A.3 of the submitted MR, name of one of the Project Participant “EKI Energy Services Limited” was found to be missing in the table.				
Project participant response				**Date:** 07/12/2020
EKI Energy services name has been added to the project participant table				
Documentation provided by project participant				
MR V2				
DOE assessment				**Date:** 15/12/2020
The corrections in the MR have been checked and the project participant ““EKI Energy Services Limited” as per the LoA dated 19/06/2020 has been appropriately mentioned in the table under section A.3. Hence, CAR 01 is closed.				

CAR ID	02	**Section no.**	E.3	**Date:** 23/10/2020
Description of CAR				

In section A.5 of the submitted MR, the length of the current monitoring period (512 days) was found to be incorrect.	
Project participant response	**Date:** 07/12/2020
Length of monitoring period is revised	
Documentation provided by project participant	
MR V2	
DOE assessment	**Date:** 15/12/2020
Under section A.5, appropriate corrections have been made and the no. of monitoring days has been accurately revised to 487 days, which represents the actual no. of days in the monitoring period (from 02/04/2019 to 31/07/2020). Hence, CAR 02 is closed.	

CAR ID	03	**Section no.**	E.3	**Date:** 23/10/2020
Description of CAR				
In section B.1 of the submitted MR, As per the template filling guidelines, PP needs to add, *"(b)Information on the implementation and actual operation of the project activity, including relevant dates (e.g. construction, commissioning, start of operation)".*				
Project participant response				**Date:** 07/12/2020
Commissioning date along with continued working information has been added to the section B.1				
Documentation provided by project participant				
MR V2				
DOE assessment				**Date:** 15/12/2020
Verification team has checked the revised Section B.1 and confirms that the details about commissioning and operation of the project activity has been accordingly added in the section along with major break down details in the Appendix- 2 of the MR version 02. The information has been cross verified with the commissioning certificates, generation data and also during the remote audit interviews. Hence, CAR 03 is closed.				

CAR ID	04	**Section no.**	E.8.4	**Date:** 23/10/2020
Description of CAR				
In section E.1, E.2 of the submitted MR, As per the template filling guidelines, PP needs to *"Attach spreadsheets to the monitoring report to present full calculations for this monitoring period."*				
Project participant response				**Date:** 07/11/2020
ER calculation spreadsheet has been attached to the MR V2				
Documentation provided by project participant				
MR V2				
DOE assessment				**Date:** 15/12/2020
Verification team confirms that the ER calculation sheet has been attached in the Appendix 3 of the MR to present the calculations for the monitoring period. Hence, CAR 04 is closed.				

CAR ID	05	Section no.	E.7	Date: 23/10/2020
Description of CAR				
Under Appendix 1 of the webhosted MR, 1) The serial no. of energy meters is not consistent with the meter details mentioned in the MR for previous monitoring period. As per the remote audit dated 23/10/2020, PP confirmed that there has been a change in meter, the details of which needs to be mentioned in this section. 2) For the meters mentioned in Appendix 1, the calibration frequency remains unclear as the meters have been calibrated twice in a single year, whereas the calibration frequency as per registered PDD is once in 5 years.				
Project participant response				**Date:** 07/12/2020
1. Now the meter change details have been mentioned over the MR V2, 2. As per the PDD, the calibration frequency is 5 years but the calibration of meters is not under the purview of the PP, however in a conservative approach, the calibration is done frequently.				
Documentation provided by project participant				
Calibration Records and MR V2				
DOE assessment				**Date:** 15/12/2020
Verification team has checked the Appendix 1 of the revised MR and confirms that- 1. The serial no. of the energy meters is consistent with the previously registered documents, as well as the calibration documents. However, the meters were replaced on 26/12/2019, as confirmed from the replacement documents. Therefore, the details (serial no. and calibration) of the replaced meters, as checked from the meter replacement documents has also been added in the MR. 2. The justification provided by PP is acceptable to the verification team based on its conservativeness. Hence, CAR 05 is closed.				

Table 4. FAR from this verification

No FAR raised from this verification

~~**FAR ID**~~	~~Xx~~	~~**Section No.**~~		~~**Date:** DD/MM/YYYY~~
~~**Description of FAR**~~				
~~**Project participant response**~~				~~**Date:** DD/MM/YYYY~~
~~**Documentation provided by project participant**~~				
~~**DOE assessment**~~				~~**Date:** DD/MM/YYYY~~

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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.

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