



VERIFICATION REPORT FOR

“BUNDLED SOLAR POWER PROJECT BY SOLARARISE INDIA PROJECTS PVT. LTD.”



South Asia

Document Prepared by TÜV SÜD South Asia Pvt Ltd

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Summary:

TÜV SÜD South Asia Pvt. Ltd. has performed the third verification of the VCS project activity. The verification is based on the currently valid documentation of the VCS and United Nations Framework Convention on Climate Change (UNFCCC).

The Verification has been conducted for the monitoring period 26/08/2020 to 31/08/2021.

The verification process includes three phases:

- Desk review of documents.
- Off-site audit and follow-up interviews with the relevant personnel;
- Resolution of outstanding issues and the issuance of final verification report and opinion.

The main purpose of this project activity is to generate clean form of electricity through renewable solar energy source. The project is a bundled project activity which involves installation of 120 MW solar project in different states of India through SPVs.

The details of the SPVs for the project and their location of installation are mentioned in the table below:

Name of SPVs	Capacity in MW	COD	Connection with Grid	State
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Tlatoani Solar Projects Pvt Ltd	10 MW	23/06/2016	Indian Grid	Telangana
NV Vogt Solar One Pvt Lt ¹ (Talettutayi Solar Projects Six Pvt Ltd)	10 MW	23/06/2016	Indian Grid	Telangana
Talettutayi Solar Projects Four Pvt Ltd	50 MW	10/08/2017	Indian Grid	Maharashtra
Talettutayi Solar Projects One Pvt Ltd	30 MW	05/01/2018	Indian Grid	Karnataka
Talettutayi Solar Projects Two Pvt Ltd	20 MW	07/08/2019	Indian Grid	Karnataka

Commissioning details of the plant has been cross verified with the commissioning certificates.

During the current monitoring period i.e., from 26/08/2020 to 31/08/2021 (inclusive of both the days), the project activity has supplied 236,308 MWh of electricity that has contributed to GHG reductions to the tune of 228,108 tCO₂e.

2 Clarification Requests (CLs) and 1 Corrective Action Request (CAR) have been raised during verification process and has been successfully closed. No Forward Action Request (FAR) was raised during this monitoring period.

¹ SPV name is changed to TALETUTAYI SOLAR PROJECTS SIX PRIVATE LIMITED on 18/06/2018.

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1 INTRODUCTION

1.1 Objective

TÜV SÜD has been commissioned by the client to perform an independent verification assessment.

The objective of the verification work is to comply with the requirements of Verified Carbon Standards requirements. According to this assessment TÜV SÜD shall:

- ✓ Ensure that the project activity has been implemented and operated as per the registered PD, and that all physical features (technology, project equipment, monitoring and metering equipment) of the project are in place,
- ✓ Ensure that the published MR and other supporting documents provided are complete, verifiable and in accordance with applicable VCS and CDM VVS requirements,
- ✓ Ensure that the actual monitoring systems and procedures comply with the monitoring systems and procedures described in the monitoring plan and the approved methodology,
- ✓ Evaluate the data recorded and stored as per the applicable requirements.
- ✓ Assessment of the sustainability monitoring parameters as per the VCS requirements

1.2 Scope and Criteria

The scope of any assessment is defined by the underlying legislation, regulation and guidance given by relevant entities or authorities. In the case of VCS project activities, the scope is set by:

- ✓ VCS v4.1 requirements.
- ✓ Clean Development Mechanism Validation and Verification Standard (VVS) for Project Activities v3.0.
- ✓ Baselines and monitoring methodologies (including GHG inventories).
- ✓ Environmental issues relevant to the applicable sectoral scope.
- ✓ Current technical and operational knowledge of the specific sectoral scope and information on best practice.
- ✓ Stakeholder consultation and feedback

The verification process is not meant to provide any form of consulting for the project participant (PP). However, stated requests for clarifications, corrective actions, and/or forward actions may provide input for improvement of the project design.

1.3 Level of Assurance

The errors identified in the project are below the threshold limit of materiality and hence not material. The GHG emission reductions are calculated without material misstatements.

The VVB confirms that a reasonable level of assurance has been achieved during the verification process.

1.4 Summary Description of the Project

The main purpose of this project activity is to generate clean form of electricity through renewable solar energy source. The project is a bundled project activity which involves installation of 120 MW solar project in different states of India through SPVs. Over the 10 years of first crediting period, the project will replace anthropogenic emissions of greenhouse gases (GHG's) estimated to be approximately 244,968 tCO₂e per year, thereon displacing 253,776 MWh/year amount of electricity from the generation-mix of power plants connected to the Indian grid, which is mainly dominated by thermal/fossil fuel-based power plant.

The details of the SPVs for the project and their location of installation are mentioned in the table below: -

Name of SPVs	Village/Site	Tehsil/Mandal	District	State	Latitude (N)	Longitude (E)
Talettutayi Solar Projects Pvt Ltd	Palwai	Gadwal	Mahabubnagar	Telangana	16.153°	77.763°
NV Vogt Solar One Pvt Ltd(Talettutayi Solar Projects Six Pvt Ltd)	Palwai	Gadwal	Mahabubnagar	Telangana	16.266°	77.784°
Talettutayi Solar Projects Four Pvt Ltd	Chatgaon	Telgaon Taluk	Beed	Maharashtra	18.966°	76.218°
Talettutayi Solar Projects One Pvt Ltd	Chikkoppa and Mudhol	Yelburga	Koppal	Karnataka	15.65°	75.99°

Talettutayi Solar Projects Two Pvt Ltd	Karehalli	Koppal	Koppal	Karnataka	15.37°	76.32°
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These are the SPVs of SolarArise India Projects Pvt. Ltd. and the project is promoted by Solar Arise India Projects Pvt. Ltd.

2 VERIFICATION PROCESS

The registered VCS project is undergoing third verification under VCS, the approach adopted to ensure the quality of emission reductions is described in the following sections.

2.1 Method and Criteria

The information provided by the project participants is assessed by applying the means of verification specified in the VCS v4.1, Toolkit and the VVS.

A competent assessment team is selected prior to the start of the verification. The team is selected to cover the technical area(s), sectoral scope(s) and relevant host country experience for evaluating the VCS project activity. Additionally, a competent Technical Reviewer or Technical Reviewer Team is appointed to conduct checks on quality and completeness.

The verification team performs first a desk review, followed by an remote-site visit, which results in the formation of a draft report and a list of findings. The next step involves the evaluation of the findings through direct communication with the PPs and then finally the preparation of the verification report. This verification report and other supporting documents then undergo an internal quality control by the CB “Environment and energy” before submission to the VCS.

2.2 Document Review

The verification is performed primarily as a document review of the registered Joint VCS PD & MR, previous MR and Verification report and associated documents as stated in details in appendix 1 of this document. The assessment is performed by a verification team using a

protocol. The cross checks between information provided in the Monitoring report, registered Joint VCS PD & MR, and information from sources other than those used, if available, the team's sectoral or local expertise and, if necessary, independent background investigations.

2.3 Interviews

The VVB has not conducted the on-site inspection for this current monitoring period due to obligations imposed by COVID 19. However, the VVB has ensured that reasonable level of assurance has been achieved as per Verra regulations on the relaxation of mandatory site visits by the VVB due to COVID 19. The VVB has conducted telephonic interviews and video calls to discuss with the client regarding the data and documents pertaining to the current verification period. The interviews and discussions were conducted successfully.

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Patel	Rakesh	SolarArise India Projects Pvt. Ltd. - In charge	22/10/2021	Plant technology and monitoring	Shailendra Kewat
2	Singh	Bipin Kumar	SolarArise India Projects Pvt. Ltd. – Head O&M	22/10/2021	Plant technology and monitoring	Shailendra Kewat
3	Sharma	Nitya	Infinite Solutions - Consultant	22/10/2021	Monitoring	Shailendra Kewat

2.4 Site Inspections

Please see 2.3

2.5 Resolution of Findings

The objective of this step is to identify, discuss and conclude on the issues related to the monitoring, implementation and operations of the registered project activity that could impair the capacity of the registered project activity to achieve emission reductions or influence the monitoring and reporting of emission reductions. This is done based on the desk review and interaction with site personnel over phone. The verification team prepares and/or updates a verification protocol (internal document) that records the conformities and non-conformities, which may be of following types;

CAR (Corrective Action Request) is raised if one of the following occurs:

- ✓ Non-compliance with the monitoring plan, the methodology or the standardized baseline are found in monitoring and reporting and has not been sufficiently documented by the project participants, or if the evidence provided to prove conformity is insufficient.
- ✓ Modifications to the implementation, operation and monitoring of the registered project activity has not been sufficiently documented by the project participants.
- ✓ Mistakes have been made in applying assumptions, data or calculations of emission reductions that will impact the quantity of emission reductions.
- ✓ Issues identified in a FAR during validation to be verified during verification or previous verification(s) have not been resolved by the project participants.

Clarification request (CL) is raised if information is insufficient or not clear enough to determine whether the applicable CDM requirements have been met. All CARs and CLs raised by the TUV SUD during verification shall be resolved prior to submitting a request for issuance.

FAR (Forward Action Request) is raised during verification if the monitoring and reporting require attention and/or adjustment for the next verification period.

During the Verification process, total 01 CAR and 02 CL were raised and resolved satisfactorily. No FAR has been raised in the verification. The list of CARs/CLs/FARs raised and the response provided, the mean of validation, reasons for their closure and references to correction in the relevant documents are provided in Appendix II of this report.

2.5.1 Forward Action Requests

The project activity is undergoing third verification; there were no FARs raised during the validation or previous verification.

2.6 Eligibility for Validation Activities

Not applicable

3 VALIDATION FINDINGS

3.1 Participation under Other GHG Programs

The project activity is registered under VCS with reference number 1762. The project proponent has provided undertaking that it will not claim any GHG credits in any GHG program other than that under VERRA during the current monitoring period.

3.2 Methodology Deviations

Not Applicable

3.3 Project Description Deviations

As per the monitoring plan as outlined in the registered PD for Karnataka sites, the net electricity supplied to the grid ($EG_{PJ, y}$) is calculated as the difference of electricity exported and imported from the grid, however as per the actual monitoring practice followed at Karnataka sites, parameter ($EG_{PJ, y}$) is calculated as the difference of electricity export, (115%) import after deducting the transmission losses. Hence the project proponent has corrected the formula used in the calculation of $EG_{PJ, y}$ and considered this change as project deviation in the current monitoring period.

The assessment team is able to confirm that the deviations identified during the current monitoring period is appropriately described and justified in section 3.2 of the monitoring report and the project remains in compliance with the VCS rules. Also, the deviation does not have an impact on the applicability of the methodology, additionality, or the appropriateness of the baseline scenario.

3.4 Grouped Project

Not Applicable

4 VERIFICATION FINDINGS

4.1 Project Implementation Status

The project involves the installation of solar Power Project. The total installed capacity of the project is 120 MW, which involves operation of solar power projects in the various states of India. The details of the project locations are mentioned in the table below:

Name of SPVs	Capacity in MW	COD	Connection with Grid	State
Tlatoani Solar Projects Pvt Ltd	10 MW	23/06/2016	Indian Grid	Telangana
NV Vogt Solar One Pvt Ltd ² (Talettutayi Solar Projects Six Pvt Ltd)	10 MW	23/06/2016	Indian Grid	Telangana
Talettutayi Solar Projects Four Pvt Ltd	50 MW	10/8/2017	Indian Grid	Maharashtra
Talettutayi Solar Projects One Pvt Ltd	30 MW	05/01/2018	Indian Grid	Karnataka
Talettutayi Solar Projects Two Pvt Ltd	20 MW	07/08/2019	Indian Grid	Karnataka

The project activity is a new facility (Greenfield) and the electricity generated by the project will be exported to the Indian electricity grid. The project will therefore displace an equivalent amount of electricity which would have otherwise been generated by fossil-fuel dominant electricity grid. The Project Proponent plans to avail the VCS benefits for the project.

The audit team has checked the commissioning certificates to confirm the location and the implementation of the project.

The solar power project will reduce the GHG emissions generated by the current generation energy mix in India's Power Grid, which is dominated by fossil fuel-based grid connected power plants. The power generated through the project activity being supplied to Indian grid through a contractual arrangement (PPA). The technical specification of the project activity

² SPV name is changed to TALETTUTAYI SOLAR PROJECTS SIX PRIVATE LIMITED on 18/06/2018.

equipment's have been checked through the photographs of all the equipment's installed at site and are found to be consistent with the mentioned under section 3.1 of MR. The status of the project activity is verified through the screen shots of SCADA system, indicating the real-time generation data and hence it is confirmed that the project is fully functioning.

Monitoring parameters:

Means of verification	Referring to VCS v4 and p.360, p.361, p.363 and p.364 of CDM VVS PA, v3.0, the below tables provide a summary on the verification of each monitoring parameter listed in the registered monitoring plan.	
	Data / Parameter:	EG_{PJ,y}
	Data unit:	MWh
	Description:	Quantity of net electricity generation supplied by the project plant/unit to the grid in year y (MWh)
	Source of data used:	Credit note/JMR/Form B reports/ monthly generation report from respective state electricity board/DISCOM.
	Means of verification/Comments:	The difference of final value of export and import is used for monthly values of net electricity supplied to the grid by the project activity and same value will be considered for ER calculations for Telangana & Maharashtra sites. The difference of final value of export and import (115%) & transmission loss is used for monthly values of net electricity supplied to the grid by the project activity and same value will be considered for ER calculations for Karnataka sites. Verification team has checked the JMR/FORM-B/Credit note to check net generation value and same has been cross verified with sales invoices raised by PP.
	Cross-check	Electricity Sales invoices submitted (as per PPA)
Joint Meter Reading is being taken jointly by the officials of state utility and project participant's representative on monthly basis and accordingly monthly JMR is being prepared. The monitoring methodology applies consistently the choice of the option selected for monitoring of baseline emissions. The monitoring plan provide procedures for the collection and archiving of all relevant data necessary for estimation or measuring the emission reductions within the project boundary during the crediting period. This is checked through discussion with consultant and the project participant during the telephonic interview.		

	Compliance with the calibration frequency requirements for measuring instruments As per the registered monitoring plan, the meters are to be calibrated in every five years and same has been considered for this MP and confirmed by cross-checking the calibration records. The details of the calibration of meters are given in the table below. The VCS MR has been reviewed to check that the procedure for data uncertainty, emergency preparedness, roles and responsibility, operational and management structure are mentioned in the MR. The monitoring plan completely describes all measures to be implemented for monitoring all parameters required. The monitoring plan described the positioning of the equipment. Calibration frequency for Energy meters is once in 5 years. Also, CEA Notification No. 502/70/CEA/DP&D dated 17/03/2006 which is considered as national standard mentions that "All interface meters shall be tested at least once in five years." Hence calibration frequency once in 5 years considered for the project activity is found to be appropriate.
Conclusion	The monitoring has been carried out in accordance with the monitoring plan contained in the registered PDD. All parameters were monitored and determined as per the registered monitoring plan. Referring to p.360, p.361, p.363 and p.364 of CDM VVS PA, v3.0, VVB confirms through video call and telephonic interviews and from the document review, the actual monitoring system complies with the registered monitoring plan. The substantiation of this conformity on information flow for these parameters including the values in the monitoring reports is reported in the above section. During the verification, all relevant monitoring parameters of the registered monitoring plan 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. After appropriate corrections, carried out by the project participant, it is confirmed that all monitoring parameters have been measured / determined without material misstatements and are in line with all applicable standards and relevant requirements. All parameters required to be monitored are recorded at the intervals required by the registered monitoring plan and the applied methodology. On the basis of review of source and nature of available evidences and records, the verification team confirms the quality of evidence for emission reduction provided is sufficient as per CDM VVS PA, v2.0.

Calibration of the meters

Meter Calibration details of 10 MW solar project by Talettutayi Solar Projects Pvt Ltd

Metering Location: 132/33 kV Substation Control Room, Gadwal

Meter Details	Main Meter	Check Meter	Standby Meter
Meter Serial No.	APX00685	APX00686	APX00687
Date of Calibration	22/02/2019	22/02/2019	22/02/2019

Due Date of Calibration	21/02/2024	21/02/2024	21/02/2024
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Meter Calibration details of 10 MW solar project by Talettutayi Solar Projects Six Private Limited

Metering Location: Control Room, 132/33kV substation, Gadwal.

Meter Details	Main Meter	Check Meter	Standby Meter
Meter Serial No.	APX00682	APX00684	APX00704
Date of Calibration	22/02/2019	22/02/2019	22/02/2019
Due Date of Calibration	21/02/2024	21/02/2024	21/02/2024

Meter Calibration details of 50 MW solar project by Talettutayi Solar Projects Four Private Limited

Metering Location: Control Room, 132kV Telgaon

Meter Details	Main Meter	Check Meter	Standby Meter
Meter Serial No.	02832405	02832406	02832404
Date of Calibration	17/07/2019	17/07/2019	17/07/2019
Due Date of Calibration	16/07/2024	16/07/2024	16/07/2024

Meter Calibration details of 30 MW solar project by Talettutayi Solar Projects One Private Limited

Metering Location: 110/33/11 KV MUSS Yelburga substation

Meter Details	Main Meter	Check Meter
Meter Serial No.	16112988	16198152
Date of Calibration	07/08/2019	07/08/2019
Due Date of Calibration	06/08/2024	06/08/2024

Meter Calibration details of 20 MW solar project by Talettutayi Solar Projects Two Private Limited

Metering Location: 110/33/11 KV Kerehalli substation

Meter Details	Main Meter	Check Meter
Meter Serial No.	19004078	19004046
Date of Calibration	07/08/2019	07/08/2019
Due Date of Calibration	06/08/2024	06/08/2024

Emissions trading programs and other binding limits

Assessment team confirms that the Net GHG emission reductions or removals generated by the project will not be used for compliance with an emissions trading program or to meet binding limits on GHG emissions in any Emission Trading program or other binding limits. Audit team checked the REC Mechanism database of India and found that the project activity is not accredited / registered under REC mechanism. Further, Declaration in effect of the same has been submitted by project proponent to audit team and found to be correct.

The project has not been registered under any other GHG programs. Also, the Project is not rejected by other GHG programs. A declaration for the same is checked and found correct by the assessment team. Also, assessment team checked the following registries to confirm the same. The details of the registries checked are as follows:

1. <https://www.recregistryindia.nic.in/>
2. <http://cdm.unfccc.int/>
3. <http://www.goldstandard.org/>
4. www.v-c-s.org

The Project has no intend to generate any other form of GHG-related environmental credit for GHG emission reductions or removals claimed under the VCS Program.

Thus, it is concluded that the project activity not involved on other Emissions trading programs and other binding limits.

Additional Information Relevant to the Project

Eligibility Criteria for grouped projects

This is not a grouped project activity. Thus, this section is not applicable for this project.

Environmental well-being: Solar being a renewable source of energy, it reduces the dependence on fossil fuels and conserves natural resources which are on the verge of depletion. Due to its zero emission the Project activity also helps in avoiding significant amount of GHG emissions and specific pollutants like SO_x, NO_x, and SPM associated with the conventional thermal power generation facilities. Project undergone continuous operation and only scheduled maintenance as per the manufacturer specification is considered. No unforeseen incident observed for the present monitoring period.

The information relating to the project implementation, provided in the Monitoring Report is consistent with that stated in the registered Joint VCS PD & MR. The data and variables provided in the monitoring report are the same as stated in the registered Joint VCS PD & MR. Total emission reductions achieved under this monitoring period 26/08/2020 to 31/08/2021 (including both days) is 228,108 tCO₂e.

Assessment team concludes the following:

- a. There are no material discrepancies between project implementation and the project description provided in the registered VCS PD & MR.
- b. The monitoring plan is implemented completely and monitoring system (i.e., process and schedule for obtaining, recording, compiling and analysing the monitored data and parameters) is appropriate.
- c. There are no material discrepancies between the actual monitoring system, and the monitoring plan set out in the project description and the applied methodology.
- d. The GHG emission reductions or removals generated by the project have not included in an emissions trading program or any other mechanism that includes GHG allowance trading.
- e. The project has not received or sought any other form of environmental credit, or has become eligible to do so since validation or previous verification.
- f. The project is registered under VCS only.
- g. The project activity is complying with indicators for sustainable development in the interim approval guidelines for Clean Development Mechanism (CDM) projects from India as discussed under section 1.11 of MR.

In view of the information's as verified above the assessment team is able to conclude that the project has been implemented as described in the registered VCS Joint PD & MR.

4.2 Safeguards

4.2.1 No Net Harm

The project do not have any negative environmental impacts.

4.2.2 Local Stakeholder Consultation

Local stakeholder consultation has been conducted at the time of project registration. As confirmed by PP during interviews, for on-going stakeholders communication, PP has maintained feedback/complaint register at the site office. Local stakeholders can anytime lodge their grievances if any in the register over the operational lifetime of the project.

During current monitoring period no grievance was received. Thus, assessment team is of the opinion that the ongoing stakeholder mechanism is adequate and appropriate.

4.3 AFOLU-Specific Safeguards

Not applicable.

4.4 Accuracy of GHG Emission Reduction and Removal Calculations

The calculation of the emission reductions is found to be correct. The details of the reported and the verified values for all parameters are listed in section 4.5 of this report.

The parameter $EG_{PJ,y}$ is directly sourced from monthly JMRs issued by state utility. The PP has provided the complete set of data for all the monitored parameters in the ER spreadsheet.

This data has been verified as described in section 4.5 below. The formulae & method used to calculate the baseline emissions, project emissions and leakage are appropriate and in line with the approved methodology ACM0002 version 18.1.

The PP has calculated the grid emission factor as per the combined margin approach described in the 'Tool to calculate the emission factor for an electricity system', version 06.0.

The grid emission factor has been calculated as the weighted average of OM & BM; and has been fixed ex-ante for the entire crediting period.

The OM and BM have been obtained from a publicly available source i.e., “CO₂ Baseline Database for Indian Power sector”, version 12 published by Central Electricity Authority, Ministry of Power, and Government of India. The OM has been determined as the average of the previous 3 years values obtained from the CEA database. The value of BM has been identified directly from the CEA database. The combined margin emission factor was arrived at by applying weights of 75% for OM and 25% for BM, as specified in the tool. The OM and BM have been calculated to be 0.9843 tCO₂/MWh and 0.9083 tCO₂/MWh respectively. Applying the weights, the grid emission factor has been calculated to be 0.9653 t CO₂/MWh.

As per ER excel spreadsheet submitted by the PP, the net emission reductions for the current monitoring period were verified as 228,108 tCO₂e for the current monitoring period.

Calculation of baseline GHG emissions or baseline net GHG removals by sinks

Means of verification	The assessment of data and the calculation of baseline emission reduction in the MR and the ER excel sheet have been verified as per the following set of supporting documents: 1. Export, Import & transmission loss data 2. Joint meter readings 3. VER spreadsheets 4. Sales Invoices (as per PPA)
Conclusion	Calculations applied formulae and method for calculation of baseline emission are in accordance with the registered monitoring plan and are in line with the requirements of the applied methodology.

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 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
Conclusion	Project emissions are zero as per the requirement of the methodology and registered PD.

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 project activity. The verification team has checked whether calculations of baseline GHG emissions, project GHG emissions and leakage GHG emissions have been
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	carried out in accordance with the formulae and methods described in the registered monitoring plan
Conclusion	Leakage emissions are not applicable according to the applied methodology and registered PD .

The assessment team able to confirm that the GHG emission reductions and removals have been quantified correctly in accordance with the registered Joint VCS PD & MR and applied methodology.

4.5 Quality of Evidence to Determine GHG Emission Reductions and Removals

All the data recorded is in compliance with the registered VCS PD and Monitoring Report. The assessment team has checked the monthly JMRs for electricity generated and supplied by project activity for the current monitoring period to verify the values of monitoring parameter reported in ER calculation sheet and found to be consistent. Since the monthly JMRs prepared and issued by state utility, they are found to be reliable and authentic.

The monitoring of the project activity is found to be in accordance with the monitoring methodology described in ACM0002, Version 18.1. The monitoring mechanism is effective and reliable. During the con-call, personnel involved at various levels of the operation of the project activity have been interviewed to confirm that the plant personnel are conscious of the importance of the monitoring activities. The verification of the plant records and latest photographs are also substantiating consistency in recording and reporting of monitored data.

The screen shots of SCADA system confirms that the monitoring systems have been installed and are operational. The meters comply with appropriate quality standards applicable for the used technology. The accuracy class of the meters installed for the project activity was verified through the registered Joint VCS PD & MR, previous MR , and calibration certificates, latest photographs of meters and cross-checked against the PPA signed for the project activity, found to be consistent.

The supporting records of monthly credit reports issued by the state utility and invoices raised for the entire monitoring period were checked and found to be sufficient to enable verification of emission reductions.

The following parameter has been verified for current monitoring period:

Parameter	Quantity of net electricity generation supplied by the project plant/unit to the grid in year y, $EG_{PJ,y}$ (MWh)	
Means of verification	Criteria/Requirements	Assessment/Observation
	Measuring /Reading /Recording frequency	The parameter is continuously monitored and recorded on monthly basis.
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes. The reporting frequency is in line with the monitoring plan as outlined in the registered Joint VCS PD & MR and monitoring methodology.
	Monitoring equipment	Energy meters of accuracy class 0.2 s are used . (Calibration details of meter is provided separately in the section 4.1 of this report, under the heading "Calibration of meters")
	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?	Yes, accuracy class of meter is in line with registered monitoring plan and as per PPA.
	Calibration frequency /interval:	The meters are calibrated every 5 years in line with notification by Central Electricity Authority, Govt. of India.
	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	Yes. The calibration frequency is in line with the monitoring plan as outlined in the registered Joint VCS PD & MR .

	local/national standards, or as per the manufacturer's specifications?	
	Is the calibration of measuring equipment carried out by an accredited person or institution?	Yes, the calibration is conducted by NABL Accredited entity.
	Is(are) calibration(s) valid for the whole reporting period?	Yes, the calibration is valid for entire monitoring period.
	How were the values in the monitoring report verified?	The values in the monitoring report were verified from the monthly JMRS. Final value of electricity supplied to the grid by the project activity is verified as 236,308 MWh.
	If applicable, has the reported data been cross-checked with other available data?	Yes, the data has been cross-checked with invoices raised by the respective project developers.
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the data ensure correct transfer of data and reporting of emission reductions management. QA/QC processes are in place.
	In case project participants have temporarily not monitored the parameter, has either i) a deviation been approved by the CDM EB or ii) has the parameter been estimated as stipulated by Appendix 1 to the CDM Project Standard?	Not Applicable
Findings	CL #01, CL #02, & CAR #01 were raised and resolved	

Conclusion	The parameter has been monitored appropriately, in accordance with the registered monitoring plan (as per measurement methods and procedures to be applied) and applied methodology. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan.
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Parameters fixed ex ante:

$EF_{grid,OM,y}$; tCO₂e/MWh: it is the operating margin emission factor of Indian grid fixed for the entire crediting period and the value is considered as 0.9843 tCO₂e/MWh, that is consistent with the registered Joint VCS PD and MR.

$EF_{grid,BM,y}$; tCO₂e/MWh: it is build margin emission factor of Indian grid fixed for the entire crediting period and the value is considered as 0.9083 tCO₂e/MWh, that is consistent with the registered Joint VCS PD and MR.

$EF_{grid,CM,y}$; tCO₂e/MWh: it is the combined margin emission factor of Indian grid fixed for the entire crediting period and the value is considered as 0.9653 tCO₂e/MWh, that is consistent with the registered VCS PD and MR.

Calibration of meters:

During the verification assessment of the project activity, accuracy of all the metering have been checked and found appropriate. The installation and working conditions of the meters were checked through calibration certificates, latest photographs and were found to be satisfactory. Details of meters are provided in section 4.1 of this Verification report.

It is evident from the above table (section 4.1 – Calibration of the meter details) that calibration of all the existing meters was valid during the current monitoring period, hence no delay in calibration of meters identified. Hence, the accuracy classes of 0.2s for the energy meters installed at the project activity site are found to be appropriate.

The details of monitoring equipment are involved in the project activity and their calibration details are mentioned under Appendix-1 of the VCS MR. The CEA Notification No.502/70/CEA/DP&D dated 17/03/2006 which is considered as national standard mentions that “All interface meters shall be tested at least once in five years.” Hence, the stipulated calibration frequency once in 5 years is appropriate.

In view of the above discussion the assessment team able to confirm that evidence used to determine the GHG reductions and removals are sufficient and appropriate with respect to quality and quantity.

GHG Calculations:

The emission reduction as per the applied methodology equals the baseline emissions (project emissions and leakage emissions for such project activities is considered zero). The formula provided for the calculation of baseline emissions is:

$$BE_y = EG_{PJ,y} * EF_{grid,CM,y}$$

Where:

BE_y : Baseline emissions in year y (tCO₂e/yr)

$EG_{PJ,y}$: Quantity of net electricity supplied to the grid as a result of the implementation of the VCS project activity in year y (MWh)

For renewable energy projects $EG_{PJ,y} = EG_{facility,y}$

$EF_{grid,CM,y}$: CO₂ emission factor of the grid in year y (tCO₂/MWh)

Thus,

$$BE_y = EG_{PJ,y} * EF_{grid,CM,y}$$

Thus, $BE_y = 236,308 \text{ MWh} * 0.9653 \text{ tCO}_2/\text{MWh}$

= 228,108 tCO₂e (Round down value)

As per the applied methodology, emission reductions are calculated as follows:

$$ER_y = BE_y - PE_y$$

$$ER_y = 228,108 - 0$$

$$ER_y = 228,108 \text{ tCO}_2\text{e}$$

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. The actual emission reduction achieved during the current monitoring period are 8.39 % lower than the estimated amount of emission reductions as determined in the registered Joint VCS PD & MR, which is due to the lower PLF achieved by the project activity during the monitoring period.

It is to be noted that PLF is completely governed by the availability of sunlight, which natural phenomenon and same is beyond the control of PP, hence the assessment team has concluded the decrease in emission reduction of the project activity is justified and acceptable. All the data were made available and have monitored as per required monitoring frequency. The means of verification for the values of parameters, used for baseline emission calculation ,is described above.

4.6 Non-Permanence Risk Analysis

Not applicable

5 VERIFICATION CONCLUSION

The VVB confirms that

- The development and maintenance of records and reporting procedures are in accordance with the registered monitoring plan.
- The project is operated as planned and described in the project design document approved by the EB;
- The installed equipment being essential for generating emission reduction runs reliably and is calibrated appropriately.
- The monitoring system is in place and generates GHG emission reductions data.
- The monitoring plan in Monitoring Report is as per the PD and monitoring plan approved by the VCS.
- The approved monitoring plan in the approved PD is as per the applied methodology.
- There is an audit trail that contains the evidence and records that validate the stated figures.

Based on the information we have seen and evaluated, we confirm that the project activity achieved the verified amount of reductions in anthropogenic emissions by sources of greenhouse gases that would not have occurred in the absence of the project activity

Verification period: From 26/08/2020 to 31/08/2021

Verified GHG emission reductions and removals in the above verification period:

Year	Baseline emissions or removals (tCO ₂ e)	Project emissions or removals (tCO ₂ e)	Leakage emissions (tCO ₂ e)	Net GHG emission reductions or removals (tCO ₂ e)

2020(26/08/2020 to 31/12/2020)	80,854	0	0	80,854
2021(01/01/2021 to 31/08/2021)	147,254	0	0	147,254
Total	228,108	0	0	228,108

APPENDIX 1: DOCUMENTS REVIEWED

No.	Author	Title	References to the document
1	UNFCCC	CDM VVS for PA v3.0	
2	UNFCCC	ACM0002 – “Consolidated baseline methodology for grid-connected electricity generation from renewable sources”, Version 18.1	-
3	Verra	VCS Standard v4.1	-
4	EKI Energy Services Limited	VCS JOINT PD & MR Version	09/06/2018
5	LGAI Technological Center S.A.	VCS Joint Validation & Verification Report	18/06/2018
	EKI Energy Services Limited 4k Earth Science Private Limited	VCS 2nd Verification Documents	09/12/2020 19/12/2020
6	Infinite Solutions	VCS MR – Version 3.0	09/12/2021
7	Infinite Solutions	ER Calculation sheet Version 3.0	09/12/2021
8	MEDA/SECI/TSSPDCL/GESCL	Commissioning Certificates for 120 MW solar plant	23/06/2016 10/08/2017 05/01/2018 07/08/2019
9	MAHAVITARAN/GESCL/GANGA Calibration services	Calibration test certificates for main and check meters	-
10	MSEDCL/RRVPLN/TSTRANSCO/KPTCL	Monthly Joint meter reading report for 120 MW solar power plant.	2020 & 2021
11	SolarArise India Projects Pvt. Ltd.	Monthly invoices for 120 MW solar power plant.	2020 & 2021
12	SPDTCL/SECI/BESCOM	PPA	-
13	Google Earth	GPS coordinates for Solar plant	
14	Infinite Solutions	Site photographs of Solar plant and energy meters	

APPENDIX 2: ABBREVIATIONS

Abbreviations	Full texts
ABT	Availability Based Tariff
BEF	Baseline Emission Factor
BM	Build Margin
CAR	Corrective Action Request
CEA	Central Electricity Authority
CERC	Central Electricity Regulatory Commission
CL	Clarification Request
CMS	Central Monitoring System
CMP	Conference of Parties Serving as Meeting of Parties
CO ₂	Carbon dioxide
DISCOM	Distribution Company
EB	Executive Board
FAR	Forward Action Request
GHG	Green House Gas
ISO	International Standards Organization
JMR	Joint Meter Reading
kW	Kilowatt
kWh	Kilowatt hour
MFR	Multi-Function Relay
MR	Monitoring Report
MWh	Megawatt-hour
NEWNE	Northern Eastern Western Northern-Eastern
PD	Project Description
PLF	Plant Load Factor
PP	Project Proponent
QA/QC	Quality Assurance and Quality Control
UNFCCC	United Nations Framework Convention on Climate Change
VCS	Voluntary Carbon Standard
VCSA	Voluntary Carbon Standard Association
VCS PD	VCS Project Description

VCUs	Voluntary Carbon Units
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APPENDIX 3: FINDINGS OVERVIEW

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

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

Table 2. CL from this verification

CL ID	01	Section no.	4.1	Date: 12/11/2021
Description of CL				
JMR for the Oct-20 is missing for the SPV- NV Vogt Solar One Pvt Ltd				
Project participant response				Date: 08/12/2021
The JMRs for the Oct -20 is hereby submitting along with this submission to the assessment team for the SPV - NV Vogt Solar One Pvt Ltd(TALETTUTAYI SOLAR PROJECTS SIX PRIVATE LIMITED).				
Documentation provided by project participant				
Oct – 2020 - NV Vogt Solar One Pvt Ltd (TALETTUTAYI SOLAR PROJECTS SIX PRIVATE LIMITED). dated 03/09/2020				
DOE assessment				Date: 11/12/2021
JMRs for the OCT -2020 - NV Vogt Solar One Pvt Ltd (TALETTUTAYI SOLAR PROJECTS SIX PRIVATE LIMITED) dated 03/09/2020 has been submitted by PP to the assessment team & found satisfactory. # CL 01 Closed				

CL ID	02	Section no.	4.2	Date: 12/11/2021
Description of CL				

Following documents need to be submitted for the verification:	
1. Calibration records of the meters 2. Photographs of the site 3. Grievance register 4. ERPA signed with buyer	
Project participant response	Date: 08/12/2021
The following documents are submitted herewith along with the revised set of documents to the assessment team during current monitoring period:	
1. Calibration records of the meters site wise(Maharashtra , Telangana , Karnataka). 2. Photographs for all sites during current monitoring period(Entrance Gate/Meters/Solar panels/Inverters/SCADA Room/Substation) 1. Grievance registers for all sites during current monitoring period 2. ERPA signed with buyer	
Documentation provided by project participant	
1. Calibration records of the meters 2. Photographs of the site 3. Grievance register 4. ERPA signed with buyer	
DOE assessment	Date: 11/12/2021
The PP has submitted the following requested documents to the assessment team and found to be appropriate.	
1. Calibration records of the meters:-	
PP has provided the calibration certificates of all sites during the current monitoring period & same has been cross verified from calibration certificates & found ok.	
2. Photograph of the site	
PP has provided the latest photographs(Entrance Gate/Meters/Solar Plant) of all sites during current monitoring period & found satisfactory.	
3. Grievance register	
PP has submitted the copy of Grievance register and it is confirmed that no complaint received during the monitoring period.	
4. ERPA signed with buyer	
PP has provided the ERPA signed with buyer to deliver the credits in timeline & found ok.	
CL# 02 is Closed	

Table 3. CAR from this verification

CAR ID	01	Section no.		Date: 12/11/2021
Description of CAR				
Project is spread across three states, but section 4.2 talks about RRVPNL, please explain the same.				
Project participant response				Date: 08/12/2021
The section 4.2 of the monitoring report has been corrected throughout the monitoring report. Hence Revised MR version 2.0				
Documentation provided by project participant				
Revised MR version 2.0				
DOE assessment				Date: 11/12/2021
PP has revised the section 4.2 of the revised monitoring report & same has been corrected throughout the monitoring report & found satisfactory.				
#CAR 01 Closed				

Table 4. FAR from this verification

FAR ID	NA	Section No.	NA	Date :DD/MM/YYYY
Description of FAR				
No FAR raise during the verification.				
Project participant response				Date :DD/MM/YYYY
NA				
Documentation provided by project participant				
NA				
DOE assessment				Date: DD/MM/YYYY
NA				