VERIFICATION REPORT FOR '15 MW SOLAR PHOTOVOLTAIC POWER PROJECT AT GUJARAT'

Document Prepared By Earthood Services Private Limited

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Summary:

Earthood has performed the pre-CDM VCS Gap validation and first VCS verification of the project "15 MW Solar Photovoltaic Power Project at Gujarat" (UNFCCC Ref. Number 8671). The project is a solar photovoltaic project located in Anand District in Gujarat, India; exporting electricity to the regional grid.

The scope of verification includes confirming the implementation of the monitoring plan of the registered CDM PDD (version 02) and the application of the monitoring methodology Grid connected renewable electricity generation, AMS I.D, Version 17. The verification consisted of three phases: i) desk review of the project; ii) follow-up onsite visit and interviews with project stakeholders; iii) resolution of outstanding issues and the issuance of the final verification report and opinion. The overall verification, from Contract Review to Verification Report & Opinion, was conducted following Earthood internal quality procedures.

During the verification process 06 CARs, 01 CL and 00 FARs were raised.

Earthood confirms that the monitoring system is in place and the emission reductions are calculated without material misstatements. The emission reductions from the project activity "15 MW Solar Photovoltaic Power Project at Gujarat" in India during the period 13/03/2012 to 26/12/2012 (including both days) amount to 18,207 tonnes of CO_2e.

Vintage wise representation of the emission reductions is as follows:

Period	**Baseline Emissions (tCO2 e)**	**Project Emissions (tCO2e)**	**Leakages (tCO2e)**	**Emission Reductions (tCO2e)**
13/03/2012 to 26/12/2012	18,207	00	00	18,207
Total	18,207	00	00	**18,207**

Table of Contents

1 INTRODUCTION

1.1 Objective

EKI Energy Services Limited has commissioned Earthood Services Private Limited (Earthood) to perform a Gap Validation and Verification of the '15 MW Solar Photovoltaic Power Project at Gujarat' in India (hereafter called project). This project has already been registered as a CDM project on 27/12/2012 (UNFCCC reference number 8671). The objective of this gap validation is a thorough and independent assessment of registered CDM project activities against the applicable VCS requirement by the DOE. The validation process shall determine whether the proposed project activity complies with the requirements of the CDM & latest VCS guidelines, applicability conditions of the selected methodology, relevant host country regulations and guidance issued by the VCS Board.

1.2 Scope and Criteria

The scope of the validation and the verification is to assess the claims and assumptions made in the VCS project document (PD), VCS monitoring report (MR) against the VCS & CDM criteria, including but not limited to, VCS standard, CDM PS, CDM VVS, applied methodology and other relevant rules and requirements established for VCS project activities.

The validation is not meant to provide any consulting towards the project participants. However, stated requests for clarification and/or correction actions request may have provided inputs for improvement of the project design.

1.3 Level of Assurance

A draft verification report that is prepared by assessment team will be reviewed by an independent technical review team (one or more members) to confirm if the internal procedures established and implemented by Earthood were duly complied with and such opinion/conclusion is reached in an objective manner that complies with the applicable VCS and CDM (Clean Development Mechanism) requirements as appropriate. The technical review team is collectively required to possess the technical expertise of all the technical area/sectoral scope the project activity relates to. All team members of technical review team are independent of the validation team. The report approved by Quality Manager is endorsed by Managing Director, who is overall responsible to ensure quality, before final release. The further details of applicable procedures and responsibilities about Earthood Quality Management System (QMS) are available on its website (www.earthood.in).

1.4 Summary Description of the Project

The project activity is a solar power project of 15 MW located in the state of Gujarat, India. The project aims to displace electricity produced by fossil fuel power plants harnessing solar energy. The energy produced is sold to the national grid NEWNE. Therefore, the project reduces greenhouse gas emissions and thereby contributes to sustainable development. The assessment team confirms that the total emission reductions achieved under this monitoring period (13/03/2012 to 26/12/2012) are 18,207 tCO_2e).

2 VERIFICATION PROCESS

2.1 Method and Criteria

Earthood assessed and determined whether the proposed implementation and operation of the project activity, and the steps taken to report emission reductions comply with the criteria and relevant guidance provided by the VCS Board. The validation/verification process consist of the following three phases;

- A desk review of the VCS PD and VCS MR.
- Site visit and follow up interviews with project stakeholders

The resolution of outstanding issues and issuance of final report and opinion.

2.2 Document Review

The validation and verification is performed primarily as a document review of the CDM PDD, Gap VCS PD and VCS MR and associated documents as stated in details in appendix 1 of this document. The assessment is performed by a validation/verification team using a protocol. The cross checks between information provided in the Monitoring report, VCS PD 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 site visit for the project location, by the assessment team, was conducted on 19/01/2017 and the following stakeholders were interviewed.

S.no	Name	Organisation
1.	Rahul P. Guikwad	ACME
2.	Jadav Vijay. J.	ACME
3.	Mahadav Sharma	ACME

2.4 Site Inspections

A site visit was undertaken by Earthood on 19/01/2017 to carry out following;

a. An assessment of the implementation and operation of the registered project activity as per the registered CDM PDD, VCS PD and VCS MR;
b. A review of information flows for generating, aggregating and reporting the monitoring parameters;
c. Interviews with relevant personnel to determine whether the operational and data collection procedures are implemented in accordance with the monitoring plan in the PD;
d. A cross check between information provided in the monitoring report and data from other sources such as plant logbooks, inventories, purchase records or similar data sources;
e. A check of the monitoring equipment including calibration performance and observations of monitoring practices against the requirements of the PD, the applied methodology including applicable tool(s), and, where applicable, the applied standardized baseline;
f. A review of calculations and assumptions made in determining the GHG data and emission reductions;

An identification of quality control and quality assurance procedures in place to prevent or identify and correct any errors or omissions in the reported monitoring parameters.

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 onsite assessment. 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 Earthood 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.

All the findings that are raised and communicated to project participant during the verification are included under Appendix 2. The appendix also includes the response, if provided, by the project participants and an assessment by the verification team if it was closed out or otherwise.

2.5.1 Forward Action Requests

The project activity is undergoing pre-CDM gap validation and verification; there were no FARs raised during the CDM validation process.

2.6 Eligibility for Validation Activities

ESPL has conducted VCS gap validation for this project activity as part of first verification for the VCS monitoring period 13/03/2012 – 26/12/2012. ESPL is accredited for both validation and verification of sector scope 1 which is applicable for this project activity.

3 VALIDATION FINDINGS

The project is a registered CDM project, the details provided in the monitoring report and Gap VCS PD/7/ were verified from the details from the UNFCCC web link/16/ for the project. The project activity got registered under CDM on 27/12/2012 and the CDM crediting period starts from 27/12/2012 and the project proponent is claiming emission reductions under VCS for a period of 13/03/2012 – 26/12/2012 (inclusive of both days).

Since the project is a registered CDM project the Earthood has reviewed the gap PD submitted and the monitoring report for the concerned period in accordance with the VCS Standard 3.6. The implementation of the project activity is inline to the registered CDM PDD which the VCS PD also refers. The implementation was verified during the onsite visit and it was found that project implementation is as per the description provided in the registered PDD, installed in Gujarat state of India. The project got commissioned on 13/03/2012 which has been considered as the start date of the VCS monitoring period. The project commissioning was verified from the commissioning certificates/10/ and the share certificates/11/. In accordance with paragraph 3.11.10 (1) of VCS standard, the project activity is eligible for VCS Gap Validation. It is also confirmed that the project activity meets the requirements of 3.11.10(4) of VCS standard since the CDM final validation report (dated 27/12/2012) was issued within 2 years of the project start date (commissioning date – 13/03/2012) as stipulated in section 3.7 of the VCS standard.

Therefore, the assessment team is of the opinion that the project implementation is in complete compliance of the registered CDM PDD and VCS Gap PD. The assessment of the gap PD is as follows:

- *The project activity is 15 MW solar photovoltaic project/10/ hence a small scale renewable energy project correctly applying AMS I.D and falling into sectoral scope 1.*
- *ACME Solar Technologies (Gujarat) Private Limited (project proponent) is responsible for the implementation and monitoring of the project activity verified during on site assessment.*
- *The crediting period for the project activity has been correctly identified from 13/03/2012 to 12/03/2022; where 13/03/2012 is the commissioning date/10/ of the project activity.*

- *Project is a small scale solar photovoltaic project estimated to generate 24,520 tCO_2e annually. The information was verified from technical specifications/10/ submitted and verified during onsite assessment, it could also be confirmed from the CDM validated documents/16/.*

- *The project located in Wadgam, distt. Anand in Gujarat state of India as verified during the onsite assessment.*

- *The project is a greenfield project.*

- *The project is owned by ACME Solar Technologies (Gujarat) Private limited verified from the PPA/9/ and commissioning certificate/10/.*

- *It is not a grouped project.*

Therefore, the project activity is eligible for gap validation as it complies with all the relevant requirements of the VCS standard.

3.1 Participation under Other GHG Programs

The registered CDM project is applicable for pre- CDM VCS registration in opinion of the assessment team. The details of the project under CDM program are as follows:

- Registration date : 27/12/2012
- UNFCCC reference number : 8671
- Crediting Period : 27/12/2012 – 26/12/2019

The project is also undergoing Gold Standard registration for its CDM emission reductions. Under the VCS program the project proponent intents to claim emission reduction for the period starting 13/03/2012 ending 26/12/2012 in the current monitoring period. The first VCS crediting period for the project is from 13/03/2012 to 12/03/2022. The monitoring period start date is the date of commissioning of project activity is as per the VCS guidelines. The commissioning dates were confirmed from the commissioning certificates/10/, also during the onsite assessment. The end date of the current VCS monitoring period is 26/12/2012 while the CDM crediting period begins from 27/12/2012, implying that there has been no overlap of the dates or double counting of emission reduction between the two GHG programmes.
Hence the project activity abides to all the conditions laid out by VCS Standard 3.6 and is eligible to participate under the VCS Program.

3.2 Methodology Deviations

The project activity is in compliance with the applied methodology, no deviations were observed from the registered project scenario.

3.3 Project Description Deviations

There is no deviation identified in the implementation or operation of the project activity with the registered documents during the VCS monitoring period. The technical specifications mentioned in the registered CDM PDD/1/ was in place at the time of project installation and were verified from the commissioning certificate/10/.

However, a deviation regarding the configuration of the module panels of the project activity is identified for the later monitoring period which will form part of CDM verification. Some of the 80 Watt modules developed technical problems and were replaced by the supplier to rectify the issue. The affected 80 Watt modules were replaced by 110 Watt module keeping capacity of the project same. The initial configuration and the current configuration of the panels are transparently provided in the Monitoring Report and are duly verified.

The current setup was verified from the plant capacity details provided by O&M of the plant. The capacity of the project activity is limited by the inverters which are designed for 15 MW power generation. This was verified by the verification team during site visit through the rating plate of the inverters. The project activity is evacuating electricity to the regional grid as per the power purchase agreement/9/ with GUVNL, also implying that the plant capacity is the same.

Therefore, the team concludes that there is no deviation in the project which may affect the applicability of methodology, additionality or the appropriateness of the baseline scenario and the project is in compliance with the applied methodology.

3.4 Grouped Project

The project is not a grouped project.

4 VERIFICATION FINDINGS

4.1 Project Implementation Status

The project activity is a 15 MW solar photovoltaic power plant located in Village-Wadgam, Tehsil-Khambat in Anand District in the state of Gujarat. The electricity generated is sold to the regional electricity grid, Gujarat Urja Vikas Nia Limited (GUVNL) as per the signed power purchase agreement.
The project has installed thin film CdTe technology for the generation of electricity. The technology specifications have been listed in the registered CDM PDD/1/ and VCS MR/5/. Due to some issues with the 80 Watt modules they are being replaced by 110 Watt modules, details on the change is provided in the section 3.3 above. Despite the change in the project composition the capacity of the project remains same which was verified from the module replacement log/17/ provided and through onsite observation by the assessment team. The project got commissioned on 13/03/2012 which was checked from the commissioning certificate/10/ which is also the start date of the current monitoring period.
Assessment concludes the following:

a. The capacity of the project activity was found to be in compliance with registered PDD.
b. DOE has conducted the on-site visit to confirm the implementation status of the project.
c. The commissioning date of the project activity was found to be accurately and consistently recorded.
d. The actual operation of project activity was found to be in compliance with the flow diagram provided in registered PDD.
e. There was no increase in emission reduction from estimates made in registered PDD, therefore no additional explanation was sought from PP regarding the same.
f. The project is also registered under CDM program and is opting for GS registration for GS CERs. The project activity has not been rejected under any other GHG programs.

4.2 Accuracy of GHG Emission Reduction and Removal Calculations

The project monitoring has been carried in accordance with the registered CDM PDD. The monitoring plan laid out is being followed at the site. The assessment team has verified the information flow (from data generation, aggregation, to recording, calculation and reporting for these parameters including the values) in the MR/5/.
The emission reductions are purely based on the net electricity generated and exported from the project.

4.3 Quality of Evidence to Determine GHG Emission Reductions and Removals

The below tables describe how each parameter, which is to be measured according to the monitoring plan, has been verified to confirm that the actual monitoring complies with the

monitoring plan, monitoring data has thoroughly assessed and that the calibration requirements are met.

a) Net Quantity of Electricity exported to the grid; $EG_{BL,y}$; MWh

Criteria/Requirements	Assessment/Observation
Measuring /Reading /Recording frequency	Continuously measured, hourly recorded and monthly reported.
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes. The measuring and reporting frequency are in line to registered CDM PDD and monitoring methodology.
Monitoring equipment	There are two Main Energy meters. The technical details of the meters specified in the MR were found consistent with the actual records and on ground.
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?	The accuracy of the monitoring equipment (main meters, S/N: GJ1301-A & GJ1302-A) is 0.2s, which is as per PPA. In the opinion of the technical expert, the accuracy is reasonable.
Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges?	Yes. The accuracy is valid for the entire range.
Calibration frequency /interval:	Once in three years
Is the calibration interval in line with the monitoring plan and/or methodology? If the monitoring plan does not specify the frequency of calibration, is the selected frequency in accordance with the local/national standards, or as per the manufacturer's specifications?	Yes. The calibration frequency is in line with the registered PDD/1/.
Is the calibration of measuring equipment carried out by an accredited person or institution?	The calibration/13/ is conducted by Pachim Gujarat Vij Co. Ltd. (A distribution company under Gujarat electricity Board)

Is(are) calibration(s) valid for the whole reporting period?	No. New meters were installed at the time of commissioning of the project as checked from the date of manufacturing of the meters. However, the initial calibration certificate of the meters could not be traced during the audit. Hence, the verification team checked the accuracy of the meters from the calibration certificates (dated 14/07/2015) for the next monitoring period. The accuracy of the meters reported in the calibration certificates were within the permissible limits of the manufacturer's specifications. To address the delay in calibration of the meters, PP has applied the error factor for the complete monitoring period (13/03/2012 to 26/12/2012) in accordance with paragraph 395 of CDM VVS Version 9 /18/. The verification team checked the calculation and found it to be appropriate.
Is the calibration carried out for a measuring range comparable with the range for which measurements have been carried out?	Yes. The calibration is carried out appropriately.
How were the values in the monitoring report verified?	The monthly reported net electricity exported data was verified from the share certificates/11/, which are issued by GETCO. The share certificates also provides the net electricity exported and that was found consistent with the actual records. All the monthly reported values were checked and found consistent.
If applicable, has the reported data been cross-checked with other available data?	The monthly reported data was cross-checked, as prescribed in the registered PDD/1/, with the invoices /12/ and was found consistent.
Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	The data management system is effective and reliable.
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	No such issues.

Project Standard?	

Parameters fixed ex ante:

a) **$EF_{grid, OM,y}$;** tCO_2e/MWh: it is the Operating margin emission factor of NEWNE Grid fixed at the time of project registration. The mentioned value of 0.9942 tCO_2e/MWh is consistent with the CDM PDD/1/.

b) **$EF_{grid, BM,y}$;** tCO_2e/MWh: it is Build margin emission factor of NEWNE grid fixed at the time of project registration. The mentioned value of 0.8123 tCO_2e/MWh is consistent with the CDM PDD/1/.

c) **$EF_{grid, CM, y}$;** tCO_2e/MWh: it is the combined margin emission factor of NEWNE grid fixed at the time of project registration. The mentioned value of 0.9487 tCO_2e/MWh is consistent with the CDM PDD/1/.

Calibration

During the site visit, the verification team visited the substations where the energy meters have been installed. It was found that no meter has been replaced during the current monitoring period; therefore there is no change in the accuracy class of the meters. The details of the monitoring equipment have been provided below:

Since the calibration at the time of meter installation could not be traced, PP has applied an error factor equal to the maximum permissible limit as per paragraph 395 of VVS version 09. The error at the time of subsequent calibration was within the permissible limits therefore, the approach followed by the PP is accepted.

Sl. No.	Meter Identification No	Meter Make	Accuracy Class	Calibration Dates
1	GJ1301-A	Secure	0.2s	14/07/2015
2	GJ1302-A	Secure	0.2s	14/07/2015

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:

$$BE_y = EG_y * EF_y$$

Where,

BEy is baseline emissions in year y, tCO_2e
EGy is the net electricity supplied

Therefore, the Baseline Emissions = 19,192.139 (MWh) * 0.9487 (tCO_2/MWh)
= **18,207 tCO_2** (rounded down)

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:

$$BE_y = EG_y * EF_y$$

Where,

BEy is baseline emissions in year y, tCO_2e
EGy is the net electricity supplied

Therefore, the Baseline Emissions = 19,192.139 (MWh) * 0.9487 (tCO_2/MWh)
= **18,207 tCO_2** (rounded down)

4.4 Non-Permanence Risk Analysis

The data variable used for the calculation of emission reductions was overall net electricity supplied by the project activity. The parameter has been monitored through electronic meters therefore the likelihood of error is purely systematic in nature. The energy meters are state utility owned and undergo a calibration check. The monthly sheets for the energy generated issued by the state utility have been submitted to the assessment team and 100% of the data has been verified.
Therefore, assessment team is of the opinion that the emission reductions are free from any omissions, misstatement and material errors.

5 SAFEGUARDS

5.1 No Net Harm

Not applicable.

5.2 Local Stakeholder Consultation

Not applicable.

6 VERIFICATION CONCLUSION

Earthood Services Private Limited (Earthood), contracted by EKI Energy Services Limited has performed the independent verification of the emission reductions for the VCS project activity (UNFCCC no 8671) “15 MW Solar Photovoltaic Power Project at Gujarat” in India for the monitoring period 13/03/2012 to 26/12/2012 (both days inclusive) as reported in the Monitoring Report Version 03 dated 24/1/2017. The PP is responsible for the collection of data in accordance with the monitoring plan and the reporting of GHG emissions reductions from the

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

Earthood commenced the verification on the basis of the baseline and monitoring methodology AMS I.D, Version 17.0, the monitoring plan contained in the PD Version 3 and VCS guidelines version 3.6, Monitoring Report Version 03 dated 24/01/2017 as per the process described under Section 2 of this report.

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

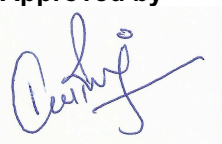
In our opinion the GHG emissions reductions reported for the project activity for the period 13/03/2012 – 26/12/2012 are fairly stated in the Monitoring Report Version 03 dated 24/01/2017. The GHG emission reductions were calculated correctly in line to the approved baseline and monitoring methodology AMS I.D, Version 17.0, and the VCS standard.

Verification period: From 13-March-2012 to 26-December-2012

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

Year	Baseline emissions or removals (tCO_2e)	Project emissions or removals (tCO_2e)	Leakage emissions (tCO_2e)	Net GHG emission reductions or removals (tCO_2e)
2012	18,207	--	--	18,207
Total	**18,207**	**--**	**--**	**18,207**

Approved by



Dr. Kaviraj Singh

Managing Director **Date: 21/03/2017**

Earthood Services Privated Limited **Place: Gurgaon, Haryana**

APPENDIX 1: ABBREVIATIONS

Abbreviations	Full texts
CAR	Corrective Action Request
VCS	Verified Carbon Standard
CER	Certified Emission Reduction(s)
CL	Clarification Request
DOE	Designated Operational Entity
Earthood(ESPL)	Earthood Services Private Limited
FAR	Forward Action Request
GHG	Greenhouse Gas(es)
MR	Monitoring Report
MW	Mega Watt
PD	Project Description
PP	Project Participants
QA/QC	Quality Assurance / Quality Control
tCO2e	tonnes of Carbon dioxide equivalent
UNFCCC	United Nations Framework Convention on Climate Change
VCR	Verification and Certification Report

APPENDIX 2: REFERENCES

S. No.	Title of Document
1.	Registered CDM PDD, version 2 dated 15/06/2012
2.	CDM Validation report, dated 27/11/2012
3.	VCS Monitoring Report version 01 dated 15/112016
4.	VCS Monitoring Report version 02 dated 24/12/2016
5.	VCS Monitoring Report version 03 dated 24/01/2017 (final)
6.	VCS ER spreadsheet (corresponding to the final monitoring report)
7.	Gap VCS PD version 03 dated 24/01/2017
8.	Undertaking for double counting
9.	Power purchase agreement signed between PP and GUVNL
10.	Commissioning certificates for the project activity
11.	Monthly share certificates for the electricity supplied to the grid issued by GETCO for the current monitoring period.
12.	Monthly invoices of electricity sold, issued by ACM, for the current monitoring period.
13.	Calibration certificates for the meters used in the current monitoring period
14.	Approved Baseline & Monitoring Methodology: AMS I.D Version 17
15.	VCS Standard Version 3.6
16.	UNFCCC website and VCS website for project information
17.	Plant capacity details provided by the O&M contractor
18.	CDM Validation and Verification Standard (VVS) Version 9.0

APPENDIX 3: FINDINGS

CL ID	01	Section no.	MR	Date : 21/12/2016
Description of CL				
PP is requested to provide the following documents: 1. Commissioning certificate 2. Power purchase agreement 3. DNA approval 4. Supportive for start date				
Project participant response				**Date :** 24/12/2016
The requested documents are submitted now				
Documentation provided by project participant				
Commissioning Certificate Power Purchase Agreement Host Country Approval received from Indian DNA. Commissioning Certificate as a supportive for start date as per VCS Guidelines.				
DOE assessment				**Date:** 27/12/2016
The documents provided confirmed the information included in the VCS PD and MR. the finding is therefore closed.				

CAR ID	02	Section no.	D.2	Date : 21/12/2016
Description of CAR				
Following issues were identified in the gap VCS PD submitted: a) The project start date has been mentioned 17/03/2012; PP is requested to clarify how the project meets the requirement laid in section 3.7 of the VCS Standard v3.6 which requires the validation to be completed within two years of project start date. b) The serial numbers indicated in the table of contents do not conform to the serial numbers followed in the PD c) In all the sections where PP has mentioned 'Not Applicable', kindly justify in the PD why it is not applicable. d) The table included in section 1.4 of the PD does not conform to the PD template. e) Section 1.6 of the PD mentions the crediting period from 17/03/2012 to 16/03/2022 which was found overlapping with the CDM crediting period. Please clarify. f) The eligibility criteria under section 1.13 of the PD is not as per the PD template.				
Project participant response				**Date :** 24/12/2016
a) The commissioning date is 13/03/2012 and the same is revised in revised VCS PD. As per section 3.7.1 of VCS Standard Version 3.6, "The project start date is the date on which the project began generating GHG emission reductions or removals", thus for this project activity, the project starts to generate GHG emissions when it was commissioned and commissioning date is considered as start date of project activity. Also as per same section 3.7.1 "For projects registered under an approved GHG program which are seeking registration with the VCS Program, further specification with respect to the validation deadline is set out in Sections 3.11.10 and 3.11.11". As per sction 3.11.10 4) "The approved GHG program validation (or verification, where the approved GHG program does not have a validation step) or VCS validation shall be completed within the relevant validation deadline as set out in Section 3.7. Validation (or verification) is deemed to have been completed when the validation (or verification) report that is submitted to the relevant program to request registration has been issued". Thus validation completion in any approved GHG program is accepted. Section 3.7 mentioned that validation need to complete within two years of start date. As per this guideline, the CDM validation (other GHG program) is completed within the two years of start date. The start date of project activity is 13/03/2012 and CDM validation of project activity is completed on 27/07/2012 (date of CDM validation report) b) The table of contents have been revised and serial numbers of table of content are made consistent VCS PD. c) As per 3.11.10 of VCS Standard version 6, "For projects registered under the CDM, the cover page and sections 1.2, 1.3, 1.5, 1.6, 1.7, 1.9, 1.10, 1.12.1, 1.12.2, 1.12.3, 1.12.4 and 1.13 of the				

VCS Project Description Template shall be completed. A validation/verification body shall undertake a validation of same, which shall be accompanied by a validation representation, to provide a gap validation for the project's compliance with the VCS rules", hence only these sections of VCS PD are completed for Gap validation purpose. For Gap Validation purpose, the other sections are not applicable, hence for that remaining sections, "Not Applicable" is mentioned. d) Section 1.4 of VCS PD is revised and role in the project is mentioned. e) As per VCS guideline, the PP claim either VCUs or CERs during the CDM crediting period if there is no any double accounting. Thus to address this issue, the VCS PD should mention the crediting period as per VCS guidelines. As per section 3.8.1 of VCS Standard version 6 "For non-AFOLU projects and ALM projects focusing exclusively on reducing N2O, CH4 and/or fossil-derived CO2 emissions, the project crediting period shall be a maximum of ten years which may be renewed at most twice". Also as per section 3.8.3 of VCS Standard version 6 "Projects registered under other GHG programs are not eligible for VCU issuance beyond the end of the total project crediting period under those programs. For example, a CDM project with a seven year twice renewable project crediting period is not eligible for VCU issuance beyond the end of those 21 years. Where projects have been registered under more than one other GHG program, they are not eligible for VCU issuance after the date that is the earliest end date of all applicable project crediting periods". Thus the current project activity is eligible for VCU issuance for period till end of 21 years of CDM crediting period. f) The project activity is not Grouped project activity, and same justification is given under eligibility criteria as per VCS PD completion guidance.
Documentation provided by project participant
Revised VCS PD version 02 dated 24/12/2016
DOE assessment — **Date:** 27/12/2016
a) The clarification provided by the PP is in accordance with the VCS guidelines, the CDM registration date for the project is 27/12/2012 which is well within 2 years of project commissioning. Therefore the finding is closed. b) The revised PD was found corrected therefore, finding was closed. c) The clarification provided by the PP was found reasonable therefore the finding as been closed. d) The revised PD provides correct information. Closed e) The clarification provided by the PP is in line to the VCS standard, therefore the finding is closed. f) The eligibility criteria is now complete. Closed

Verification

CAR ID	03	**Section no.**	D.2	**Date :** 21/12/2016
Description of CAR				
The MR provided is incomplete in the following aspects a) An obsolete version of the MR has been used, b) Implementation dates have not been included in section 1.1 c) Section 1.10 and 2.4 could not be found in the MR submitted d) The table included in section 1.4 of the PD does not conform to the PD template.				
Project participant response				**Date :** 24/12/2016

a) The current version 3.3 of MR is still valid as per VCS update. The latest version 3.4 is mandatory to use from 19/04/2017, thus before that both previous version 3.3 of MR or template version 3.4 of MR is acceptable. Thus previous version 3.3 of MR is still applicable till 18/04/2017, and no latest MR template is used. b) The project implementation date is mentioned in revised MR. c) As per applicable and valid MR template version 3.3, the sections 1.10 and 2.4 are not a part of MR template. Hence no revision is required. d) The table in section 1.4 of MR is revised and Role in project is mentioned.
Documentation provided by project participant
Revised MR version 02 dated 24/12/2016
DOE assessment **Date:** 27/12/2016
a) The version of MR is accepted owing to the grace period. Closed b) The project description is now complete. Closed c) The version of MR is accepted owing to the grace period. Closed d) The table in the revised PD is complete. Closed

CAR ID	04	**Section no.**	D.2	**Date :** 21/12/2016
Description of CAR				
The text included under calculation method in the table is not in context of the project activity. PP is requested to provide concerning information.				
Project participant response				**Date :** 24/12/2016
The text under monitoring parameter table is revised.				
Documentation provided by project participant				
Revised MR version 02 dated 24/12/2016				
DOE assessment				**Date:** DD/MM/YYYY
The revised MR contains project related information. Closed				

CAR ID	05	**Section no.**	D.2	**Date :** 21/12/2016
Description of CAR				
The following discrepancies were found in section C parameter "EG_{BL}" of the MR: a) The parameter table do not include information about the metering equipment. b) No information on calibration of the energy meters has been provided. c) The registered PDD includes information about check meters, however no information with regards to check meters was included in the MR.				
Project participant response				**Date :** 24/12/2016
a) The reference of section 3.3 of MR for metering details are mentioned in table of monitoring parameter. b) The calibration details used for ER calculation are provided in section C of MR. c) The check meters are available at GETCO substation and will be used in case of main meters are not in service. For current monitoring period, these check meters are not used for net electricity supplied to grid parameter. Also that check meters are under custody of state electricity board and details are not available with PP. Thus check meters details are not provided in MR.				
Documentation provided by project participant				
Revised MR version 02 dated 24/12/2016				
DOE assessment				**Date:** 27/12/2016
a) The monitoring equipment details have been included in the revised MR. closed b) PP needs to provide supportive for metering testing at the time of installation/commissioning. Open c) PP needs to explain how the implementation is in line to the monitoring plan described in the registered PDD. OPEN				
Project participant response				**Date :** 24/01/2017

b) The calibration certificate for main meter of project activity at the time of installation/commissioning is not available with PP as these meters are not under control of PP. However latest calibration done on 14/07/2015 is available with PP and same is submitted to DOE. Due to non availability of calibration certificate at the time of installation/commissioning and result of delayed calibration done on 14/07/2015 is within limit, the error factor (maximum permissible limit of accuracy class) is applied for complete monitoring period conservatively. c) The implementation of project activity is in line with monitoring plan. The project activity involves both main meters at project site and check meters at substation, however PP do not have any control on these meters and only main meter details are available with PP. Thus only main meter details are provided in MR. The non availability of check meter is transparently mentioned in VCS MR.
Documentation provided by project participant
None
DOE assessment **Date:** 25/01/2017
b) The emission reduction calculation sheet provided by the PP applies an error factor equal to the maximum permissible error of the installed meters. The subsequent calibration indicates the error to be within the permissible limits therefore the approach followed by the PP was found in compliance with the VVS version 09. It was therefore accepted. c) The project implementation was verified during the onsite assessment and was found to be in compliance to the description provided. Therefore the finding is closed.

CAR ID	06	**Section no.**	D.2	**Date :** 21/12/2016
Description of CAR				
The following discrepancies were found in ER sheet: a) The value for net electricity supplied by the project activity, which is the monitored parameter could not be found in the supportive provided (SEA and Invoices).				
Project participant response				**Date :** 24/12/2016
The state energy account has mentioned export and import values, thus revised ER spreadsheet mentioned now export and import values for project activity. The difference of export and import gives the net electricity export to grid. These export and import values can be checked from State Energy Account and Invoices.				
Documentation provided by project participant				
Revised MR version 02 dated 24/12/2016				
DOE assessment				**Date:** 27/12/2016
The revised ER sheet provided included separate export and import electricity values which could be verified from the SEA provided. Closed				

CAR ID	07	**Section no.**	D.2	**Date :** 20/12/2016
Description of CAR				
The technical specification provided of the project composition provided in the MR could not be verified during the onsite assessment. Based on the site visit observation and interview with the plant persons, it has come to the notice of the TL that the PP has changed the all 80 watts PV module to 110 watts module. Please clarify.				
Project participant response				**Date :** 24/01/2017
The technical specifications provided in MR was available at the time of commissioning of project activity. However as a part of O&M, few modules have some problem of degradation, thus supplier has replaced those modules with another higher watt modules and less number of modules. It is to be noted that there is no change in capacity of project activity and project remains as 15 MW rated capacity. Due to higher watt modules, less number of modules are installed. This change does not impact any change in capacity of project activity. The change in technical specifications are also mentioned in VCS MR. The supporting evidences for the change in modules are submitted to DOE. It is to be noted that in future also, such change in modules will happen without change in capacity of project activity. Currently there are 2970 modules of 72.5 watt, 22680 modules of 75 Watt, 54270 modules of 77.5 Watt,				

7575 modules of 80 Watt and 75330 modules of 110 Watt and total capacity of project activity remains as 15 MW. The MR is updated accordingly.	
Documentation provided by project participant	
Revised MR version 03 dated 24/01/2017 Revised ER sheet version 03 dated 24/01/2017 Revised VCS PD version 03 dated 24/01/2017	
DOE assessment	**Date:** 25/01/2017
The change in the module setup was verified during the onsite assessment. The rated capacity of the project after the alteration has remained 15 MW therefore the capacity remains same. The changes are reflected in the revised MR under the deviation heading. The verification team has assessed the changes as per the VCS Standard 3.6 and concludes that the changes does not impact the applicability of the methodology, additionality or the appropriateness of the baseline scenario, and the project remains in compliance with the applied methodology. Therefore, the finding is closed.	

APPENDIX 4: COMPETENCE STATEMENTS OF THE TEAM

Competence Statement			
Name	Shreya Garg		
Country	India		
Education	M.Sc. (Climate Science & Policy), TERI University		
Experience	4 Years		
Field	Climate Change		
Approved Roles			
Team Leader	YES		
Validator	YES		
Verifier	YES		
Financial Expert	NO		
Technical Reviewer	YES		
TA Expert (1.2)	YES		
Reviewed by	Abhishek Mahawar	**Date**	29/12/2014
Approved by	Ashok Gautam	**Date**	29/12/2014

Competence Statement			
Name	Nayan Jyoti Deka		
Country	India		
Education	M.Tech. (Energy Technology), Tezpur University		
Experience	8 Years +		
Field	Climate Change & Energy Management		
Approved Roles			
Team Leader	YES		
Validator	YES		
Verifier	YES		
Methodology Expert	AMS-I.D., AMS-III.H., AMS-I.C., ACM0006, ACM0002		
Local expert	YES (India)		
Financial Expert	NO		
Technical Reviewer	YES		
TA Expert (1.1, 1.2, 3.1, 13.1)	YES		
Reviewed by	Abhishek Mahawar	**Date**	08/09/2016
Approved by	Ashok Kumar Gautam	**Date**	08/09/2016

Competence Statement			
Name	Abhishek Mahawar		
Country	India		
Education	B. Tech. (Chemical Engineering) MBA (Finance)		
Experience	7 Years +		
Field	Climate Change & Environment		
Approved Roles			
Team Leader	YES		
Validator	YES		
Verifier	YES		
Methodology Expert	AMS-I.D and ACM0002		
Local expert	YES (India)		
Financial Expert	YES		
Technical Reviewer	YES		
TA Expert (1.2)	YES		
Reviewed by	Ashok Gautam	**Date**	07/09/2016
Approved by	Kaviraj Singh	**Date**	07/09/2016