



VCS GROUPED PROJECT FOR RENEWABLE POWER GENERATION BY ESSEL MINING AND INDUSTRIES LIMITED



Document Prepared By: 4K Earth Science Private Limited

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Prepared By	4K Earth Science Private Limited
Contact	No.20, 'SNS Arcade', Basement Floor, Old Airport Main Road, Konena Agrahara, Bangalore-560017, Karnataka, India doe@4kearthscience.com ; 4kearthscience@gmail.com
Approved By	Chandrakala R Director
Work Carried Out By	Narendra Kumar (Team Leader & Technical Expert 1.2) Ma Paa Puratchikkanal (Technical Reviewer)

Summary:

4K Earth Science Private Limited (4KES) has performed the verification of the Grouped project “VCS Grouped Project for Renewable Power Generation by Essel Mining and Industries Limited” VCS ID 1497, against VCS Standard Version 4. The grouped project involves installation and operation solar power projects by Essel Mining & Industries Limited (EMIL) and its group companies. Total of 11 instances added to the project till date and the total installed capacity of the 11 instances is 150.4 MW. The project is developed by Essel Mining & Industries Limited (EMIL) and its group companies. The electricity generated by the instances is supplied to grid or used for captive purpose that displaces the grid electricity and there by avoid associated CO₂ emission.

During the current monitoring period, project activity undergoes continued operation since their commissioning and no major breakdown had taken place

The proposed project is a voluntary action being undertaken by the project owner of the project activity. EKI Energy Services Limited (hereafter referred as “EKIESL”) is acting as the other party for this project activity.

The scope of verification includes confirming the implementation of the monitoring plan of the approved VCS PD (version 04) dated 15/12/2018 and the application of the monitoring methodologies “ACM0002 Version 16, AMS-I.D Version 18 & AMS-I.F Version 03”.

The monitoring period covered in the verification is 21-October-2018 to 20-February-2020 (including both days)

The verification is consisted of three phases: i) desk review of the project; ii) follow-up onsite visit and/or 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 4KES internal quality procedures.

During the verification process 09 CARs, 00 CLs and 00 FARs were raised. All the findings have been closed

satisfactorily and the same has been discussed in Appendix II.

4KES confirms that the monitoring system is in place and the emission reductions are calculated without material misstatements. The emission reductions from the grouped project activity “VCS Grouped Project for Renewable Power Generation by Essel Mining and Industries Limited” in India during the period 21-October-2018 to 20-February-2020 (including both days) amount to 340,942 tonnes of CO₂e.

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1 INTRODUCTION

1.1 Objective

EKI Energy Services Limited has contracted 4K Earth Science Pvt. Ltd (4KES) to perform VCS Verification of the 'VCS Grouped Project for Renewable Power Generation by Essel Mining and Industries Limited' in India (hereafter called project). This project has already been registered as a VCS project (VCS ID 1497). The objective of this verification is a thorough and independent assessment of registered project activities against the applicable VCS requirement by the DOE. The verification process shall determine whether the proposed project activity complies with the requirements of 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 verification is to assess the claims and assumptions made in the VCS monitoring report (MR) against the VCS criteria, including but not limited to, VCS standard, applied methodology and other relevant rules and requirements established for VCS project activities.

The Verification 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

The verification team verified the complete monitoring data for all the parameters of the monitoring plan and confirms that the reported emission reductions are free from any type of material errors. Therefore, 4KES confirms that the verification is conducted with reasonable level of assurance

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 sources. The project is a grouped project and there are 11 project instances of solar projects are included in the project till date with the total installed capacity of 150.4 MW. The details of the 11 instances included in the project are given below:

Project Instance	Project Owner	Title of the project activity	Capacity	Location	Commissioning Date	Estimated ERs/yr
Instance - 1	Essel Mining and Industries Limited	VCS Project for Solar Power Plant at Bhadla, Rajasthan	20 MW	Bhadla Solar Park, Village – Bhadla, Tehsil – Bap, District – Jodhpur, Rajasthan India	12/03/2014	29,270
Instance - 2		VCS Project for Solar Power plant at Achampet, Telangana	5 MW	5 MW Solar Power Plant, Achampet Village and Mandal, Dist. Mehaboobnagar,	07/07/2014	7,171
Instance - 3		VCS Project for Solar Power Plant at Kalwakurthy, Dist. Mehabubnagar, Telangana	10 MW	Ternikal Village, KalwakurthyMandal, Dist. Mehaboobnagar, Telangana, India.	30/06/2014	14,524
Instance - 4		VCS Project for Solar Power Plant at Salakpur, Telangana	10 MW	Village: Salakpur District: Warangal State: Telangana, India	17/09/2014	14,240
Instance - 5		VCS Project for Solar Power Plant at Alladurg, Telangana	10 MW	Village: Bhiaramdhibba District: Medak State: Telangana, India	28/07/2014	14,679
Instance - 6	Aditya Birla Solar Limited	VCS Project for Solar Power Plant at Karnataka	20 MW	Village: Bellatti, Shirahtti District: Gadag State: Karnataka, India	11/05/2017	36,410
	Aditya Birla Solar Limited		20 MW	Village: Chandargi, Kaktol, Ramadurg Taluk District: Belagavi, State: Karnataka, India	12/05/2017	36,513
	Aditya Birla Solar Limited		20 MW	Village: Mulbangal, District: Kolar State: Karnataka, India	13/10/2017	36,599
	Aditya Birla Renewables limited		17 MW	Village: Devar Nimbargi, Vijayapura District: State: Karnataka, India	26/03/2018	26,460
Instance - 7	Aditya Birla Renewables SPV 1 Limited	VCS Project for Solar Power Plant at Vijaypur	6.8 MW	Village: DevarNimbargi, District: Vijayapura State: Karnataka, India	26/03/2018	10,525
Instance - 8		VCS Project for Solar Power Plant	0.8	Village: Hotgi, Tal South Solapur	20/06/20	1,432

		at Hotgi, Maharashtra	MW	District: Solapur State: Maharashtra, India	18	
Instance - 9		VCS Project for Solar Power Plant at Gotan, Rajasthan, India	5 MW	Village: KhariaKhangar, Tehsil: Bhopalgarh District: Jodhpur State: Rajasthan, India	01/02/20 18	8,956
Instance - 10		VCS Project for Solar Power Plant at Sevagram, Gujrat	5 MW	Village: Sevagram, Tal- Abdasa District: Kutch State: Gujarat, India	14/08/20 18	8,956
Instance - 11		VCS Project for Solar Power Plant at Pune, Maharashtra	0.8 MW	Village: Peth, Tal Havelim Dist Pune, Maharashtra, India	01/02/20 18	1,388

As per MR, the instances 1 to 7 are standalone power plants and the electricity generated from the instances are supplied to the grid and hence it avoids equivalent amount of electricity generated from the grid connected power plants. The instances 8 to 11 are captive power plants installed at industry premises of Essel Mining & Industries Limited (EMIL) and its group companies and are supplied to respective industry to cater its demand and thereby avoiding equivalent amount of grid electricity. The same is confirmed from approved VCS PD/4/ and interview with PP.

The instances are commissioned between 12/03/2014 and 14/08/2018 and the COD details are provided in the table below. The commissioning dates of all the instances are verified against the approved VCS PD/4/ and commissioning certificates/7/.

Location of the project was verified through Google Map (<https://maps.google.com/maps>) and found consistent with the data provided in the registered PD/4/

The Project instances are new facility (Greenfield) and the electricity delivered by the project activity is either exported to the regional grid or supplied to cater industries captive demand and thereby avoiding grid electricity. The project will therefore displace an equivalent amount of electricity which would have otherwise been generated by fossil fuel dominant electricity grid.

As per registered PDD, the project activity results in replacing anthropogenic emissions of greenhouse gases (GHG's) estimated to be approximately 247,123 tCO_{2e} per year, thereon displacing grid electricity.

During the monitoring period from 21-October-2018 to 20-February-2020 (including both days), the project replaced 340,942 tonnes of CO_{2e} by displacing the 347,783.87 MWh electricity.

2 VERIFICATION PROCESS

The registered VCS project is undergoing 2nd verification under VCS (1st Crediting period), the approach adopted to ensure the quality of emission reductions is described in the following sections.

2.1 Method and Criteria

4KES 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 consists of the following three phases;

- A desk review of the VCS PD and VCS MR
- Site visit and/or follow up interviews with project stakeholders
- The resolution of outstanding issues and issuance of final report and opinion.

The prepared verification report and other supporting documents then undergo an internal quality control before being submitted to the VCS executive board for issuance of credits as per VCS standard version 4.

2.2 Document Review

The verification is performed primarily as a document review of the approved VCS PD, previous MR and Verification report and associated documents as stated in detail 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, 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

Due nationwide lockdown due to COVID-19 spread, Verification team could not conduct the site visit. Since the date of closure of lockdown is uncertain due to the increase spread of COVID-19 and hence VVB did not conduct site visit for this project activity. However, the verification team performed the telephonic interview with the site person and reviewed documents to achieve a reasonable level of assurance in the verification. This is in line with Section 4.1.2 of the VCS Standard, v4.0 which does not explicitly mandate site visits as part of the validation and verification process, only that VVBs must achieve a reasonable level of assurance on all validations and verifications.

No sampling procedures were adopted in document verification and all the document were cross checked to ensure conservative estimation of emission reduction. Kindly find below names of the persons interviewed (telephonic interview).

Sr. No	Name of the person	Role/Designation
1	Mr. Karthik Nama	Site Engineer
2	Mr. Irfan Shaik	AM-Site
3	Mr. Manoj Gupta	SGM-Operation
4	Mr. Surajit Chanda	GM-BD
5	Ms. Chaitra Raut	SE-BD
6	Mr. Pankaj Rajpoot	Assistant Manager, EKI Energy Services Limited

2.4 Site Inspections

As mentioned above, due nationwide lockdown due to COVID-19 spread, Verification team could not conduct the site visit. Since the date of closure of lockdown is uncertain due to the increase spread of COVID-19 and hence VVB did not conduct site visit for this project activity. However, the verification team performed the video conference and telephonic interview with the PP, Consultant and the site person and reviewed documents to achieve a reasonable level of assurance in the verification. This is in line with Section 4.1.2 of the VCS Standard, v4.0 which does not explicitly mandate site visits as part of the validation and verification process, only that VVBs must achieve a reasonable level of assurance on all validations and verifications

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 4KES 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 09 CAR and 00 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 2nd verification of 1st crediting period under VCS; there were no FARs raised during the validation or previous verification.

2.6 Eligibility for Validation Activities

The Validation and verification body holds accreditation to carry out both validation and verification activities. The accreditation scope can be checked from the below link:

<http://cdm.unfccc.int/DOE/list/DOE.html?entityCode=E-0069>

3 VALIDATION FINDINGS

3.1 Participation under Other GHG Programs

The project activity is registered under the VCS only (VCS Project ID 1497) and any of the instances are not registered under any other emissions trading program or any other mechanism that includes GHG allowance trading. PP also confirms that net GHG emission reductions or removals generated during this monitoring period shall not be used for compliance under any such programs or mechanisms. This was confirmed through a declaration/16/ submitted by the PP and hence accepted by the assessment team.

3.2 Methodology Deviations

There is no methodology deviation applied during the current monitoring period.

3.3 Project Description Deviations

No deviation is applied during the monitoring period.

3.4 Grouped Project

The project activity is a grouped project. However, no new instances added during this monitoring period.

4 VERIFICATION FINDINGS

4.1 Project Implementation Status

The project activity is grouped project with total 11 instances of solar power projects. The total installed capacity of the grouped project is 150.4 MW and the projects are promoted by Essel Mining & Industries Limited (EMIL) and its group companies. The purpose of the project activity is to generate clean electricity with utilization of solar energy.

During the verification site visit it was concluded that the project is implemented as per the requirement of the registered PD and Final Validation report. During the current monitoring period it was observed that no unforeseen incident/event evolved which can impact the operation of the project activity. The project undergone continuous operation and only

scheduled maintenance is observed as per the manufactures specification which is acceptable to the assessment team.

All the 11 project instances i.e. renewable energy generation plants to be included in this grouped project are from within India only comprising total capacity 150.4 MW. All the project stances are already commissioned and operating continuously since then without major breakdown. The location details of the 11 instances are given below:

Project activity instances	Title of the project activity	Location	Project Owner	Geo Coordinates	Commissioning Date
Instance – 1 Bhadla	VCS Project for Solar Power Plant at Bhadla, Rajasthan	Bhadla Solar Park, Village –Bhadla, Tehsil – Bap, District – Jodhpur, Rajasthan India	Essel Mining and Industries Ltd.	Latitude: 27.561° N Longitude: 71.929° E	12/03/2014
Instance – 2 Achampet	VCS Project for Solar Power plant at Achampet, Telagana	5 MW Solar Power Plant, Achampet Village and Mandal, Dist. Mehaboobnagar, Telangana, India.		Latitude: 16.4° N Longitude: 78.6° E	07/07/2014
Instance – 3 Kalwakurthy	VCS Project for Solar Power Plant at Kalwakurthy, Dist. Mehabubnagar, Telangana	Ternikal Village, KalwakurthyMandal, Dist. Mehaboobnagar, Telangana, India.		Latitude: 16.7° N Longitude: 78.5° E	30/06/2014
Instance – 4 Salakpur	VCS Project for Solar Power Plant at Salakpur, Telangana	Village: Salakpur District: Warangal State: Telangana, India		Latitude: 17.89° N Longitude: 79.05° E	17/09/2014
Instance – 5 Alladurg	VCS Project for Solar Power Plant at Alladurg, Telangana	Village: Bharamdhibba District: Medak State: Telangana, India		Latitude: 17.94° N Longitude: 77.92° E	28/07/2014
Instance – 6 Karnataka	VCS Project for Solar Power Plant at Karnataka	Village: Bellatti, Shirahatti District: Gadag State: Karnataka, India	Aditya Birla Solar Limited	Latitude 15.09° N , Longitude: 75.623° E	11/05/2017
		Village: Chandargi, Kaktol, Ramadurg Taluk District:		Latitude: 16.021° N, Longitude: 75.127° E	12/05/2017

		BelagaviState: Karnataka, India			
		Village: Mulbangal, District: Kolar State: Karnataka, India		Latitude:13°05'04.4" N, Longitude:78°17'28.8" E	13/10/2017
		Village: DevarNimbargi, District: Vijayapura State: Karnataka, India	Aditya Birla Renewabl es Limited	Latitude:17.250426°N, Longitude:75.660746° E	26/03/2018
Instance – 7 Bijapur	VCS Project for Solar Power Plant at Vijaypur	Village: DevarNimbargi , District: Vijayapura State:Karnata ka, India	Aditya Birla Renewabl es SPV 1 Limited	Latitude:17.250426°N Longitude: 75.660746° E	26/03/2018
Instance – 8 Hotgi	VCS Project for Solar Power Plant at Hotgi, Maharashtra	Village: Hotgi, Tal South Solapur District: Solapur State: Maharashtra, India		Latitude:17.55953712 °N Longitude:76.0021448 4°E	20/06/2018
Instance – 9 Gotan	VCS Project for Solar Power Plant at Gotan, Rajasthan, India	Village: KhariaKhanga r, Tehsil: Bhopalgarh District: Jodhpur State: Rajasthan,		Latitude:26°36'25" N,Longitude:73°41' 33"E	01/02/2018
Instance – 10 Sevagram	VCS Project for Solar Power Plant at Sevagram, Gujrat	Village: Sevagram, Tal- Abdasa, District: Kutch, State: Gujarat		Latitude:23°25' 44.55"N, Longitude:68° 42'13.17"	14/08/2018
Instance – 11 Pune	VCS Project for Solar Power Plant at Pune, Maharashtra	Village: Peth, Tal Haveli, Dist Pune, Maharashtra, India		Latitude: 18.494475°N , Longitude:74.0970218 °E	01/02/2018

Starting date of the operation of the project activity is 12-March-2014 which is the date of commissioning/commercial operation of the 1st instance.

Assessment team also checked the Technical details of the solar power plants installed onsite. The same is checked during interview with PP representatives and also cross checked from the technical manual of the Manufactures. The detail is as below:

Project activity instances	Capacity	PV Modules	Inverters
Instance – 1 Bhadla	20 MW	36,288 nos. (245 Wp each) 52,488 nos. (250 Wp each) Manufactured by CSun	30 nos.(680 kVA each) Manufactured by Schneider
Instance – 2 Achampet	5 MW	18,340 nos. (300 Wp each) Manufactured by CSun	7 nos, (860 kVA each) Manufactured by Schneider Electric
Instance – 3 Kalwakurthy	10 MW	37,940 nos. (290 Wp each) Manufactured by CSun	14 nos, (680 kVA each) Manufactured by Schneider Electric
Instance – 4 Salakpur	10 MW	36,680 nos. (300 Wp each) Manufactured by YINGLI	14 nos, Manufactured by Schneider Electric of capacity 680 kVA each
Instance – 5 Alladurg	10 MW	36,680 nos. (300 Wp each) Manufactured by CSUN	14 nos, (680 KVA) Manufactured by Schneider Electric
Instance – 6 Karnataka	20 MW	69,800 nos. (320/315 Wp each) Make Seraphim	30 nos. Schnidler make (680KVA)
	20 MW	69,760 nos. (320/315 Wp each) Make Seraphim	30 nos. Schnidler make (680VA)
	20 MW	70,040 nos. (320/315 Wp each) Make Seraphim	30 nos. Schnidler make (680KVA)
	17 MW	87,120 nos. (78,360- 320 Wp)	20 nos. Schnidler make (680KVA)
Instance – 7 Vijaypur	6.8 MW	8,760-315 Wp each, Make Znshine Solar	10 nos. Schnidler make (680KVA)
Instance – 8 Hotgi	0.8 MW	3,000 nos. (320 Wp each)	10 invertors, Deltaww

		Make Canadian solar	
Instance – 9 Gotan	5 MW	Total 18,340, 8090- 325 Wp/ 10250- 330 Wp), Make- Canadian Solar	5 Invertors (Make- ABB Ltd) 1 MW each
Instance – 10 Sevagram	5 MW	15,520 nos. (320 Wp each) Make Emmvee	4 Invertors, TMEIC make
Instance – 11 Pune	0.8 MW	3,000 nos. (320 Wp each) Make Canadian solar	10 invertors, Deltaww

The installation and specification of power plants has been checked with Technical Specification of the power plant/6/ and commissioning certificates/7/. The commissioning has also been duly validated in the VCS validation report of the project activity/04/. There was no major breakdown or shutdowns during the monitoring period which might affect the applicability of methodology or might cause material errors in emission reductions.

The assessment team confirmed that there is no proposed or actual change to the project design during this monitoring period. The project design as mentioned in the registered VCS PD & monitoring report submitted is implemented and thus the same is acceptable to the assessment team. All required monitoring equipment's and procedures as mentioned in the registered VCS PD & monitoring report are available and implemented in an appropriate manner

The organisational role and responsibility as mentioned in the registered VCS PD & monitoring report is followed onsite. All the monitoring equipment was calibrated as per the specified interval in the registered VCS PD & monitoring report. No delay is observed in Calibration for the current monitoring period. All the emergency preparedness as mentioned in the registered VCS PD & monitoring report is followed onsite and no discrepancies were found regarding the same.

It was also observed during the verification process that project is not rejected by any other GHG program around the world. Declaration in that effect is also provided by PP.

The assessment team found that the project is in line with the registered VCS PD, monitoring report, and no deviation on project design or monitoring plan is observed.

Assessment team concludes the following:

- a) There is no material discrepancies between project implementation and the project description provided in the registered PD/04/.
- 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 is no material discrepancies between the actual monitoring system, and the monitoring plan set out in the project description and the applied methodology/08/.
- 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/16/.
- 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 comply 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 project description.

4.2 Safeguards

4.2.1 No Net Harm

The project is a solar power project which is a cleaner source of power generation. The solar power project does not emit any GHG or any other toxic gases. Hence, solar project has no significant impact on the environment. Also as per the Central Pollution Control Board of India notification Solar PV project falls under White Category and are practically non-polluting. Also as per the EIA notification dated 14th September 2006, the solar power projects are exempted from environmental clearance. Hence, Environmental impact assessment is not required for this project activity.

4.2.2 Local Stakeholder Consultation

As per the section 2.2 of the MR, the projects have continuous feedback mechanism and kept a grievance register to receive any feedback/grievances from stakeholder. Verification team conducted telephonic interview with site in-charge and found that the continuous feedback mechanism is implemented effectively.

As verified from the copy of grievances registers from each site/19/ no grievances/feedback received on the operation of the project activity. However, some grievances received related to CSR activities undertaken by the PP and internal complaints from employees. The details of the grievances received and the action taken are provided in the MR. Verification team discussed with the site in-charge and confirmed that all the grievances are addressed by PP.

4.3 AFOLU-Specific Safeguards

Not Applicable.

4.4 Accuracy of GHG Emission Reduction and Removal Calculations

The verification team assessed whether the data and calculations of GHG emission reductions achieved resulting from the MR. 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 monitoring plan of the VCS PD and MR.

In detail the following has been verified:

Transparency: It has been checked whether the calculation of baseline emissions is fully traceable and, where used, the Excel calculation provides all calculation formulae.

Parameter consistency: It has been checked whether all internal and external parameters and data used for the calculation are applied consistently in the monitoring report and the calculation spreadsheet.

Correctness: It has been checked whether the applied formulae and methods for calculating baseline emissions are in accordance with the monitoring plan and the approved methodology.

Completeness: It has been checked whether all calculations are complete and without omissions

Baseline emission: The baseline Emissions for a given year is calculated by multiplying the energy baseline (EB) with the regional grid emission factor. The grid in this case would be the 'NEWNE Grid' for projects in North India & 'Southern Grid' for projects in South India

Formula Used:-

For instances 1 to 7 (As per ACM002 & AMS I.D)

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

Where,

BE_y : Baseline emissions in year y (tCO_{2e}/yr)

$EG_{PJ, facility, y}$: Quantity of net electricity generation that is generated and fed into the grid or grid electricity displaced as a result of the implementation of the CDM project activity in year y (MWh)

$EF_{grid, CM, y}$: Combined margin CO₂ emission factor for grid connected power generation (tCO₂/MWh)

For Instances 8 to 11: (As per AMS I.F)

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

Where:

BE_y : Baseline emissions in year y (tCO_{2e}/yr)

$EG_{BL, y}$: Quantity of net electricity displaced in year y (MWh)

$EF_{grid, CM, y}$: Combined margin CO₂ emission factor for grid connected power generation (tCO₂/MWh)

The verification team has checked the entire monthly JMR reports and invoices applicable for the monitoring period as per the project activity applied for verifications and found all the parameters are monitored and recorded as per the monitoring plan in the approved PD. The verification team has crosschecked the emission reduction sheet and monitoring report data with the JMR sheet and invoice bills and found all the values are matching.

Project Emission: As per the applied methodologies, paragraph 39 of the small scale methodology AMS.I.D (version 18.0), para 24 of AMS I.F Version 03 and paragraph 35 of the large scale methodology ACM0002 (version 16.0), no project emission is involved for the renewable energy power projects. Since the project is a solar power project, $PE_y = 0$.

Leakage: As per methodologies (paragraph 42 of the small scale methodology AMS.I.D (version 18.0), para 27 of AMS I.F Version 03 and paragraph 60 of the large scale methodology ACM0002 (version 16.0)) and registered PDD the leakage is zero. $LE_y = 0$.

Emission Reduction:

Emission reduction is calculated as below:

$$ER_y = BE_y - PE_y - LE_y$$

PP has submitted emission reduction the calculation in the excel sheet/2/. The emission reduction calculation in the excel sheet is checked whether the calculation is in accordance with the formula given in the approved PD/4/ and the selected methodologies/8/.

The verification team confirms the following:

- The calculations of emission reduction have been carried out in accordance with the equations and methods described in the registered monitoring plan and applied methodology.
- The emission factor applied is an ex-ante value valid for the fixed crediting period.
- Any assumptions used in emission or removal calculations have been justified.
- Appropriate emission factor and other reference values have been correctly applied. It can be confirmed that the emission reduction calculation is overall correct.
- The ER calculation sheet provided is clear, transparent and the calculations provided in the sheet are reproducible.
- Hence, the emission reduction reported in the monitoring report for the monitoring period is verified to be correct

4.5 Quality of Evidence to Determine GHG Emission Reductions and Removals

As per the registered monitoring plan and requirement of the registered methodology following parameters needs to be monitored:

(i) Net electricity supplied to the grid by the project activity instance during the year y (EGPJ, facility, y) – Applicable for Instances 1 to 7

This parameter is a calculated parameter, and is deduced as the difference between Electricity exported and electricity imported by the project activity. The verification team verified the net electricity supplied by all the power plants of the project activity to the grid from the Joint meter reading/JMR issued by the respective State utility on a monthly basis. The verification team noted that the monthly energy statement also indicates the values of the electricity export and electricity import. Based on this statement, the Project Participant raises an invoice on respective state utility for payment, subsequent to which payments are made.

The verification team cross-checked the values of the net electricity supplied values indicated in the energy statement with the invoices raised by the Project Participant. The verification team confirms that all the values of net electricity supplied to the grid are sourced from the monthly JMR and are correct.

(ii) Net electricity displaced by the project activity instance during the year y (for AMS-I.F component) ($EG_{BL,y}$) - Applicable for Instances 8 to 11

Electricity displaced by the project i.e electricity consumed by consumer is recorded by the energy meters at respective metering point. The meter readings are taken by the representatives of the consumer party and Project participant on a monthly basis. In the form of Joint Meter Reading (JMR) or Monthly report. The net electricity displaced is calculated based on the difference between export and import. This was further crosschecked with the invoices raised by the Project participant on consumer and was found to be correct. The verification team confirms that all the values of net displaced by the project activity instances are sourced from the JMR/monthly report and are correct.

The appropriateness of reading is assessed as below:

Criteria/Requirements	$EG_{PJ, facility, y}$	$EG_{BL, y}$
Measuring /Reading /Recording frequency	The electricity exported to the grid is measured through energy meters at site location on continuous basis and reported monthly.	The electricity displaced is measured through energy meters at site location on continuous basis and reported monthly.
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 approved PD/04/ and monitoring methodologies/8/.	Yes. The reporting frequency is in line with the monitoring plan as outlined in the approved PD/04/ and monitoring methodology/8/.
Monitoring equipment	Energy meters (main & Check) installed at site/substation.	Energy meters (main & Check) installed at site.
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	All the energy meters are two-way tri-vector meters of accuracy class 0.2s. However, the accuracy of energy meter is not specified in the approved PD.	All the energy meters are two-way tri-vector meters of accuracy class 0.2s. However, the accuracy of energy meter is not specified in the approved PD.

per the manufacturer's specification?		
Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges?	Yes the accuracy valid for the entire measuring range.	Yes the accuracy valid for the entire measuring range.
Calibration frequency /interval:	5 year	5 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?	There was no delay in meter calibration.	There was no delay in meter calibration.
Is the calibration of measuring equipment carried out by an accredited person or institution?	Calibration of the measuring equipment's is carried out by an accredited entity.	Calibration of the measuring equipment's is carried out by an accredited entity.
Is(are) calibration(s) valid for the whole reporting period?	There was no delay in meter calibration and hence the calibration is valid for whole reporting period.	There was no delay in meter calibration and hence the calibration is valid for whole reporting period.
Is the calibration carried out for a measuring range comparable with the range for which measurements have been carried out?	Yes, calibration carried out for a measuring range comparable with the range for which measurements have been carried.	Yes, calibration carried out for a measuring range comparable with the range for which measurements have been carried.
How were the values in the monitoring report verified?	Reported values of this parameter have been verified with monthly joint metering report/12/. Value of this parameter for the current monitoring period is verified as below:	Reported values of this parameter have been verified with monthly joint metering report/Monthly report /12/. Value of this parameter for the current monitoring period is verified as below:

	Instance- 1 –48,584.22 MWh Instance- 2 –10,996.34 MWh Instance- 3 –22,731.73 MWh Instance- 4 –21,736.92 MWh Instance- 5 –21,018.01 MWh Instance- 6 –179,363.53 MWh Instance- 7 –16,681.75 MWh Furthermore monthly values of this parameter is reported in the ER calculation sheet/02/ are also verified with the MR/01/ and found to be consistent.	Instance- 8 –1,840.35 MWh Instance- 9 –11,562.59 MWh Instance- 10 –11,295.06 MWh Instance- 11 –1,973.37 MWh Furthermore monthly values of this parameter is reported in the ER calculation sheet/02/ are also verified with the MR/01/ and found to be consistent.
If applicable, has the reported data been cross-checked with other available data?	The monthly reported values of this parameter were further cross checked with the monthly invoices raised by the PP /13/ and found to be consistent.	The monthly reported values of this parameter were further cross checked with the monthly invoices raised by the PP /13/ and found to be consistent.
Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the adequate QA/QC procedures were implemented by all the stakeholders, namely, the Grid Authority, the PP and the O&M Contractor. The Net electricity exported to the grid are cross checked against the invoice raised by the PP towards the buyer and found to be correct	Yes, the adequate QA/QC procedures were implemented by all the stakeholders, namely, the Grid Authority, the PP and the O&M Contractor. The Net electricity displaced are cross checked against the invoice raised by the PP towards the buyer and found to be correct
In case project participants have temporarily not monitored the parameter, has either i) a deviation been approved by the CDM EB or ii) has the parameter been estimated as stipulated by Appendix 1 to the CDM Project Standard?	No such issues.	No such issues.

Parameter fixed ex-ante:

EF_{grid,CM,y}; tCO_{2e}/MWh: it is the Combined margin emission factor for National Grid in year y for the proposed grouped project activity fixed at the time of project registration and mentioned value of 0.9770 for NEWNE grid and 0.9817 for Southern grid are consistent with the PD/04/.

As per registered PD, Instances 1, 8, 9, 10 & 11 are located in northern India, the emission factor of NEWNE Grid is applicable for these instances. Instances 2, 3, 4, 5, 6 & 7 are located in Southern India, the emission factor of 'Southern Grid' is applicable for these instances.

Calibration of meters:

During the verification assessment of the project activity, accuracy of all the metering have been checked and found appropriate. As per the approved PD, the calibration frequency of energy meter is 5 years. Details of meter calibration are provided in below table:

Project activity instances	Project site	Main Meter	Check Meter	Calibration Date	Validity
Instance – 1: Bhadla	Bhadla, Rajasthan	13194946	13194947	01/10/2018	30/09/2023
Instance – 2: Achampet	Achampet Telangana	02781573	02781574	28/01/2017	27/01/2022
Instance – 3: Kalwakurthy	Kalwakurthy , Telangana	02781577	02781578	28/01/2017	27/01/2022
Instance – 4: Salakpur	Mutsyal, Telangana	13194257	13194258	18-01-2017	17-01-2022
Instance – 5: Alladurg	Aladurg, Telangana	02781621	02781631	07/03/2018	06/03/2022
Instance – 6: Karnataka	Shirahatti, Karnataka	16102125	16102130	16/08/2017	15/08/2022
	Ramadurg Karnataka	16102135	16102133	28/01/2017	27/01/2022
	Mulbangal Karnataka	14194780	14194782	31/03/2016	30/03/2021
	Vijaypur,	X0488422	X0488423	06/04/2018	05/04/2023

	Karnataka				
Instance – 7: Vijaypur	Vijaypur, Karnataka	X0488419	X0488421	06/04/2018	05/04/2023
Instance – 8: Hotgi	Hotgi, Maharashtra	05288830	05288838	28/01/2017	27/01/2022
Instance – 9: Gotan	Gotan, Jodhpur	RJB 90318	RJB 90317	17/01/2018	16/01/2023
Instance – 10: Sevagram	Sevagram Gujarat	HT 01180175	HT 01180176	30/07/2018	29/07/2023
Instance – 11: Pune	Pune, Maharashtra	Y 0355612	Y 0355568	06/02/2018	05/02/2023

The energy meter calibration certificates/14/ are checked and found that the calibration details provided in the MR is correct. Verification team also confirms that the energy meters are calibrated as per the frequency mentioned in the PD and during the monitoring period calibration all the energy meters are valid.

The assessment team has verified the monthly joint meter reading report issued by respective state utility and confirmed that only the data recorded through main meters is used to calculate net electricity supplied to the grid by the projects belongs to particular developer and consequently for ER calculations. As verified through the calibration certificates, that meters were working satisfactorily during the current monitoring period.

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:

For instances 1 to 7 (As per ACM002 & AMS I.D)

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

For Instances 8 to 11: (As per AMS I.F)

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

Since project emission and leakage are zero, baseline emission is equal to emission reduction.

$$ER_y = BE_y$$

The emission reduction is estimated for each month in ER calculation sheet, and the summary of emission reduction is as below:

Instance	EGPJ, facility, y or EGBL,y (MWh)	EF _{CO2,CM,y} (tCO ₂ /MWh)	BE _y (tCO _{2e})	PE _y (tCO _{2e})	LE _y (tCO _{2e})	ER (tCO _{2e})
Instance - 1	48,584.22	0.9770	47,458	0	0	47,458
Instance - 2	10,996.34	0.9817	10,786	0	0	10,786
Instance - 3	22,731.73	0.9817	22,307	0	0	22,307
Instance - 4	21,736.92	0.9817	21,330	0	0	21,330
Instance - 5	21,018.01	0.9817	20,625	0	0	20,625
Instance - 6	179,363.53	0.9817	176,047	0	0	176,047
Instance - 7	16,681.755	0.9817	16,368	0	0	16,368
Instance - 8	1,840.35	0.9770	1,788	0	0	1,788
Instance - 9	11,562.59	0.9770	11,287	0	0	11,287
Instance - 10	11,295.06	0.9770	11,027	0	0	11,027
Instance - 11	1,973.37	0.9770	1,919	0	0	1,919
Total	347,783.87	-	340,942	0	0	340,942

Year wise emission reduction:

Year 2018- Emission Reduction (tCO _{2e})*	Year 2019- Emission Reduction (tCO _{2e})*	Year 2020- Emission Reduction (tCO _{2e})*	Total Emission Reduction (tCO _{2e})
49,032	252,996	38,914	340,942

* rounded down value

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. 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.

However, verification team has observed that the actual ER achieved during the current monitoring period is 3.19% higher than the estimated ER as per registered PD for the comparable period. This comparison is submitted in the ER sheet along with a justification confirming that this event of higher power generation was an unforeseen situation and also not under the direct control of PP. The verification team has reviewed and verified the facts and supporting provided by PP and able to conclude that justification is valid and such condition is an unforeseen event which is not a regular affair in the project activity, moreover PP does not have any direct control on it.

4.6 Non-Permanence Risk Analysis

Not applicable.

5 VERIFICATION CONCLUSION

4K Earth Science Pvt. Ltd (4KES), contracted by EKI Energy Services Limited, has performed the independent verification of the emission reductions for the VCS grouped project activity (VCS ID- 1497) “VCS Grouped Project for Renewable Power Generation by Essel Mining and Industries Limited” in India for the monitoring period 21-October-2018 to 20-February-2020 as reported in the Monitoring Report Version 03 dated 23/05/2020. The EKI Energy Services Limited and the respective project proponent are 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

4KES commenced the verification on the basis of the baseline and monitoring methodologies “ACM0002 Version 16, AMS-I.D Version 18 & AMS-I.F Version 03, the monitoring plan contained in the registered PD Version 04 dated 15/12/2018 and VCS guidelines version 4, Monitoring Report Version 03 dated 23/05/2020 as per the process described under Section 2 of this report.

4KES 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. 4KES planned and performed the verification by obtaining evidence and other information and explanations that 4KES 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 21-October-2018 to 20-February-2020 are fairly stated in the Monitoring Report Version 03 dated 23/05/2020. The GHG emission reductions were calculated correctly on the basis of the approved baseline and monitoring methodologies “ACM0002 Version 16, AMS-I.D Version 18 & AMS-I.F Version 03, and the VCS standard.

Verification period: From 21-October-2018 to 20-February-2020

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)
2018	49,032	0	0	49,032
2019	252,996	0	0	252,996
2020	38,914	0	0	38,914
Total	340,942	0	0	340,942

Approved by

Chandrakala R.

Director

Date: 27-May-2020



4K Earth Science Private Limited

Place: Bangalore, India

APPENDIX I: LIST OF DOCUMENTS

Ref. No	Title of Document	Version	Date
1	Monitoring Report	1.0	20/03/2020
		2.0	04/05/2020
		3.0	23/05/2020
2	Emission Reductions Calculation Spread sheet	1.0	20/03/2020
		2.0	04/05/2020
		3.0	23/05/2020
3	VCS Project page: https://registry.terra.org/app/projectDetail/VCS/1497	-	-
4	Project Description	4	15/12/2018
	Validation Report	2	05/03/2016
5	Previous Monitoring Report (1 st Monitoring)	2	15/12/2018
	Previous Verification Report (1 st Verification)	2	01/02/2019
6	Technical specifications of the solar power plants		
7	Commissioning certificates of Instances	-	-
8	CDM Methodologies: ACM0002, "Grid-connected electricity generation from renewable sources"	16	-
	AMS-I.D, "Grid connected renewable electricity generation"	18	-
	AMS-I.F, "Renewable electricity generation for captive use and mini-grid"	03	-
9	VCS Standard	Version 4	19/09/2019
	VCS Program Guide	Version 4	19/09/2019
10	Clean Development Mechanism Validation and Verification Standard	02.0	29/11/2018
9	Grievances Registers	-	-
12	Joint Meter Reading/Monthly reports for the monitoring period	-	-
13	Invoices for the electricity sold for the monitoring period	-	-
14	Energy meter Calibration Certificates		
15	Break down details of the complete monitoring period	-	-
16	Declaration regarding no participation in other GHG program for the concerned monitoring period	-	-
17	Developmental Impacts and Sustainable Governance Aspects of Renewable Energy Projects" prepared by MNRE dated September 2013	-	-
18	MOEF Notification http://envfor.nic.in/legis/eia/so1533.pdf		14/09/2006
19	Power Purchase Agreements of all Instances	-	-

APPENDIX II: VERIFICATION FINDINGS

Clarification Requests

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

Corrective Action Requests

CAR ID	Section no.	Date:
01		25/04/2020
Description of CAR		
As per the title page of MR, the monitoring period considered for this verification is 21-October-2019 to 20-February-2020. However, the emission reductions are calculated for the period 21-October-2018 to 20-February-2020. Please correct the anomaly.		
Project participant response		Date:
The emission reductions are calculated for the period 21-October-2018 to 20-February-2020 as it is the correct and exact monitoring period. The same has been updated in Monitoring Report Version 02. Apologies for the typographical error.		04-05-2020
Documentation provided by project participant		
Monitoring Report Version 02		
DOE assessment		Date:
The monitoring period is corrected to 21-October-2018 to 20-February-2020. CAR is closed.		15/05/2020

CAR ID	Section no.	Date:
02		25/04/2020
Description of CAR		
In table provided in section 1.1 of the MR (summary of project description), Project owner name, Date of commissioning and Estimated annual average emission are missing for few instances. Corrective action is requested.		
Project participant response		Date:
in section 1.1 of the Monitoring Report Version 02 (summary of project description), Project owner name, Date of commissioning and Estimated annual average emission have now been mentioned for all the instances.		04-05-2020
Documentation provided by project participant		
Monitoring Report Version 02		

DOE assessment	Date: 15/05/2020
The Project owner names, Date of commissioning and Estimated annual average emission of all the instances are included in Section 1.1. CAR is closed.	

CAR ID	03	Section no.		Date: 25/04/2020
Description of CAR				
In section 2.2 of the MR (Local Stakeholder Consultation), the following details are missing: • Ongoing communication mechanism implemented for the sites 1- 10. • Grievances/comments received from stakeholders during the monitoring period • How due account of all and any comments/ Grievances received during ongoing communication has been taken				
Project participant response				Date: 04-05-2020
Following details have now been incorporated in Monitoring Report Version 02: • Ongoing communication mechanism implemented for the sites 1- 10. • Grievances/comments received from stakeholders during the monitoring period • Computation of comments/ Grievances received.				
Documentation provided by project participant				
Monitoring Report Version 02				
DOE assessment				Date: 15/05/2020
The following details are included in the MR now: • Ongoing communication mechanism implemented for the sites 1- 10. • Grievances/comments received from stakeholders during the monitoring period • Due account taken on comments/ Grievances received. CAR is closed.				

CAR ID	04	Section no.		Date: 25/04/2020
Description of CAR				
In section 3.3 of MR (Grouped project), no information provided on whether any instances are proposed to include in the Grouped project during this verification or not.				
Project participant response				Date: 04-05-2020
Information regarding proposal of instances to be included in the Grouped project during this verification has now been incorporated in Monitoring Report Version 02.				
Documentation provided by project participant				
Monitoring Report Version 02				
DOE assessment				Date: 15/05/2020
No new instances are included in the monitoring report. The same is mentioned in the MR. CAR is closed.				

CAR ID	05	Section no.		Date: 25/04/2020
Description of CAR				
In section 4.2 of MR (Data and parameters monitored), the monitored values provided for the parameter is not consistent with the monitored value provided in the ER calculation sheet.				
Project participant response				Date: 04-05-2020
In section 4.2 of MR (Data and parameters monitored), the monitored values provided for the parameter have now been updated in Monitoring Report Version 02 and are now in consistence with the monitored value provided in the ER calculation sheet.				
Documentation provided by project participant				
Monitoring Report Version 02				
DOE assessment				Date: 15/05/2020
The monitored value in the section 4.2 is corrected now. The corrected value is consistent with the ER calculation sheet. CAR is closed.				

CAR ID	06	Section no.		Date: 25/04/2020
Description of CAR				
In section 4.2 of MR, it is mentioned that the frequency of calibration is 5 years. But not details are provided about the calibration dates & validity of calibration in the MR. Also provide calibration certificates for verification.				
Project participant response				Date: 04-05-2020
Calibration details have now been mentioned in appendix – 1 of the Monitoring Report Version 2.				
Documentation provided by project participant				
Monitoring Report Version 02 and Calibration Certificates.				
DOE assessment				Date: 15/05/2020
The calibration details are now included in the MR. PP has also submitted the calibration records. The calibration records are verified and found that the calibration details mentioned in the MR is correct. CAR is closed.				

CAR ID	07	Section no.		Date: 25/04/2020
Description of CAR				
Though the monitoring period covers up to 20 th February 2020, the emission reduction beak up for the calendar year 2020 is not provided in the section 5.4 of the MR.				
Project participant response				Date: 04-05-2020
The emission reduction beak up for the calendar year 2020 has now been mentioned in section 5.4 of the Monitoring Report Version 02.				

Documentation provided by project participant	
Monitoring Report Version 02	
DOE assessment	Date: 15/05/2020
The emission reduction breakup for the year 2020 is now provided in section 5.4 of the MR. CAR is closed.	

CAR ID	08	Section no.	Date: 25/04/2020
Description of CAR			
PP has provided ER calculation sheet which reports monthly generation of all instances for the monitoring period. However, Joint meter reading/monthly meter reading report and electricity invoices are not submitted for verification. Hence, Emission reduction values are reserved.			
Project participant response			Date: 04-05-2020
Joint meter reading/monthly meter reading report and electricity invoices have now been submitted for the current verification period.			
Documentation provided by project participant			
JMRs and Invoices for all the instances.			
DOE assessment			Date: 22/05/2020
Joint meter reading/monthly meter reading report and electricity invoices for all the project covering the monitoring period have now been submitted. The electricity generation details provided in the ER calculation sheet are crosschecked against the Joint meter reading/monthly meter reading report and electricity invoices and the following observation were found:			
1. The following electricity generation reading are not matching with the respective JMR/meter reading			
- Instance - 1 _Bhadla: February 2019 - Instance - 3 _Kalwakurthy: January 2020 & February 2020 - Instance - 4 _Salakpur: February 2020 - Instance - 5 _Alladurg: December 2019 & January 2020 - Instance - 7 _Bijapur: February 2019 - Instance - 10 _Gujarat: December 2018 - Instance - 11 _Pune: October 2018 & March 2019			
2. The Instances 8, 9, 10 & 11 are captive power plants. For these instances along with actual export generation, PP has considered deemed generation also as export. This is not appropriate. Deemed generation is the electricity generation loss due to non-availability of intake from the captive power plant. Hence Deemed generation <u>is not the actual generation</u> that avoided grid electricity.			
Deemed generation is just used to calculate the compensation for the generating company due to non non-availability of demand.			
Hence, considering deemed generation for calculation of baseline emission is not appropriate.			
CAR is open			

Project participant response		Date: 23-05-2020
The Electricity Generation Readings have now been crosschecked with JMRs and updated in the ER Calculation Sheet V03 with for the respective sites: - Instance - 1 _Bhadla: February 2019 - Instance - 3 _Kalwakurthy: January 2020 & February 2020 - Instance - 4 _Salakpur: February 2020 - Instance - 5 _Alladurg: December 2019 & January 2020 - Instance - 7 _Bijapur: February 2019 - Instance - 10 _Gujarat: December 2018 - Instance - 11 _Pune: October 2018 & March 2019 For the Instances 8, 9, 10 & 11, deemed generation for calculation of baseline emission has now been eliminated. Only the export value for the respective Instances has now been considered for the calculation of the net electricity generated. The desired changes have been made in Monitoring Report V03 and ER Calculation Sheet V03.		
Documentation provided by project participant		
- Monitoring Report V03 - ER Calculation Sheet V03.		
DOE assessment		Date: 23/05/2020
- PP corrected the energy generation details in the ER sheet for the reported months above. - For the Instances 8, 9, 10 & 11, the deemed generation are removed from the energy generation. CAR is closed.		

CAR ID	09	Section no.	Date: 25/04/2020
Description of CAR			
In ER calculation sheet, - For few instances, the starting and end date of monitoring period mentioned is not correct. - Emission reduction breakup for year 2020 not provided - The following instances are not considered for emission reduction. - Instance – 4 (Salakpur) - Instance – 6 (Karnataka) - DevarNimbargi - Instance – 7 Bijapur Please check the comments in ER sheet and make necessary corrections.			
Project participant response			Date: 04-05-2020
Corrections regarding the following points have been made in ER calculation sheet version 02. - The starting and end date of monitoring period has now been updated. - Emission reduction breakup for year 2020 has now been mentioned - Emission Reduction for the Instance – 4, Instance – 6 Devar Nimbargi and Instance – 7 have now been considered in ER Calculation sheet Version 02.			
Documentation provided by project participant			
ER Calculation Sheet Version 02.			

DOE assessment	Date: 15/05/2020
In ER calculation sheet, 1. The starting and end date of monitoring period mentioned is now corrected. 2. Emission reduction breakup for year 2020 is now provided 3. The following instances are now considered for emission reduction. • Instance – 4 (Salakpur) • Instance – 6 (Karnataka) - DevarNimbargi • Instance – 7 Bijapur CAR is closed.	

Forward Action Requests

FAR ID		Section no.		Date:
Description of CAR				
NA				
Project participant response				Date:
Documentation provided by project participant				
DOE assessment				Date:

APPENDIX III: TEAM COMPETENCE

<u>Certificate of Competence</u>						
Name	☒ Mr. ☐ Ms.	Narendra Kumar .R				
Qualification Procedure	Fulfils the requirement as per the appointment of personnel procedure of 4KES for Validation and Verification of CDM/VCS/GS/GHG Projects.					
Appointed to work as:						
	CDM Validator/Verifier	Team Leader	Team Member	Technical Expert	Technical Reviewer	Financial Expert
<i>Appointed</i>	Yes	Yes	Yes	Yes	Yes	No
<i>Appointed Date</i>	29-07-2019					
Authorized to work as Technical Expert for:						
<i>Authorized Technical Area</i>	Sectoral Scope	TA Code	Technical Area within the scope			
	Energy industries (renewable - / non-renewable sources)	1.1	Thermal energy generation			
	Energy industries (renewable - / non-renewable sources)	1.2	Renewables			
	Energy demand	3.1	Energy demand			
	Waste handling and disposal	13.1	Solid waste and wastewater			
Authorized to work as Local Expert for:						
<i>Country/Countries</i>	India					
<u>Compliance check by:</u> Anand S. R.						

<u>Certificate of Competence</u>		
Name	☒ Mr. ☐ Ms.	Ma Paa Puratchikkanal
Qualification Procedure	Fulfils the requirement as per the appointment of personnel procedure of 4KES for Validation and Verification of CDM/VCS/GS/GHG Projects.	
Appointed to work as:		

	CDM Validator/Verifier	Team Leader	Team Member	Technical Expert	Technical Reviewer	Financial Expert											
<i>Appointed</i>	Yes	Yes	Yes	Yes	Yes	No											
<i>Appointed Date</i>	29-07-2019																
Authorized to work as Technical Expert for:																	
<i>Authorized Technical Area</i>	Sectoral Scope	TA Code		Technical Area within the scope													
	Energy industries (renewable - / non-renewable sources)	1.1		Thermal energy generation													
	Energy industries (renewable - / non-renewable sources)	1.2		Renewables													
	Energy demand	3.1		Energy demand													
	Construction	6.1		Construction													
	Waste handling and disposal	13.1		Solid waste and wastewater													
	Agriculture	15.1		Agriculture													
Authorized to work as Local Expert for:																	
<i>Country/Countries</i>	India																
Compliance check by: Anand S. R.																	

APPENDIX IV: ABBREVIATIONS

ACM	Approved Consolidated Methodology
BM	Build Margin
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CL	Clarification Request
DPR	Detailed Project Report
EB	Executive Board
EIA	Environmental Impact Assessment
ER	Emission Reductions
FAR	Forward Action Request
GHG	Greenhouse Gases
IPCC	Intergovernmental Panel for Climate Change
JMR	Joint Meter Readings
MP	Monitoring Period
MR	Monitoring Report
MW	Mega Watt
MWh	MegaWatt hour
OM	Operating Margin
O&M	Operation & Maintenance
PD	Project Description
PP	Project proponent
PPA	Power Purchase Agreement
QA/QC	Quality Assurance/Quality Control
tCO ₂	Tonnes of Carbon Dioxide
UNFCCC	United Nations Framework Convention on Climate Change
VCS	Verified Carbon Standard
VCSA	Verified Carbon Standard Association
VCU	Verified Carbon Unit