Project Verification Report

2021

COVER PAGE			
Project Verification Report Form (VR)			
BASIC INFORMATION			
Name of approved UCR Project Verifier / Reference No.	Enviance Services Private Limited		
Type of Accreditation	 CDM or other GHG Accreditation ISO 14065 Accreditation 		
Approved UCR Scopes and GHG Sectoral scopes for Project Verification	01 Energy industries (Renewable/Non- Renewable Sources)		
Validity of UCR approval of Verifier	30/09/2027		
Completion date of this VR	14/08/2024		
Title of the project activity	18 MW Solar Power Plants in Karnataka M/s Asian Fab Tec Limited.		
Project reference no. (as provided by UCR Program)	438		
Name of Entity requesting verification service	UCR ID – 438		
(can be Project Owners themselves or any Entity having authorization of Project Owners, example aggregator.)	Viviid Emissions Reductions Universal Pvt. Ltd.		
	Name: Lokesh Jain Email ID – lokesh.jain@viviidgreen .com		
Contact details of the representative of the Entity, requesting verification	UCR ID – 438		
(Focal Point assigned for all communications)	Viviid Emissions Reductions Universal Pvt. Ltd.		
	Name: Lokesh Jain Email ID – lokesh.jain@viviidgr een.com		
Country where project is located	India		
Applied methodologies	ACM0002: Grid- connected electricity generation from		

(approved methodologies by UCR Standard used)	renewable sources version 21.0		
GHG Sectoral scopes linked to the applied methodologies	01 Energy industries (Renewable/Non- Renewable Sources)		
Project Verification Criteria:	UCR Standard		
Mandatory requirements to be assessed	Applicable Approved Methodology		
	requirements /rules		
	Eligibility of the Project Type		
	Start date of the Project activity		
	Meet applicability conditions in the applied methodology		
	Credible Baseline		
	Do No Harm Test		
	Reduction calculations		
	Monitoring Report		
	No GHG Double Counting		
	Others (please mention below)		
Project Verification Criteria:	Environmental Safeguards		
Optional requirements to be assessed	Standard and do- no-harm criteria		
	Social Safeguards Standard do-no- harm criteria		
Project Verifier's Confirmation:	The UCR Project Verifier Enviance Services		
The UCR Project Verifier has verified the UCR project activity and therefore confirms the following:	Private Limited, certifies the following with respect to the UCR Project Activity [18 MW Solar Power Plants in Karnataka M/s Asian Fab Tec Limited, In India].		

The Project Owner has correctly described the Project Activity in the Project Concept Note (dated version 2 09/05/2024) including the applicability of the approved methodology [ACM0002: Gridconnected electricity generation from renewable sources version 21.0] and meets methodology the applicability conditions and has achieved the estimated GHG emission reductions, complies with the monitoring methodology and has calculated emission reductions estimates correctly and conservatively.

The Project Activity is likely to generate GHG emission reductions amounting the to [28,327] estimated tCO₂e, as indicated in the PCN version 2. which are additional to the reductions that are likely to occur in absence of the Project Activity and complies with all applicable UCR rules, including ISO 14064-2 and ISO 14064-3.

The Project Activity is not likely to cause any net-harm to the environment and/or society

The Project Activity complies with all the applicable UCR rules¹ and therefore recommends UCR

	Program to register the Project activity with above mentioned labels.
Project Verification Report, reference number and date of approval	Verification Report
	UCR Reference
	number: 438
	Date of approval
	14/08/2024
Name of the authorised personnel of UCR Project Verifier and his/her signature with date	Vidhya Murali Krishna
	LINGLAND ST
	Quality Manager
	Date: 20/08/2024

PROJECT VERIFICATION REPORT

Executive summary

The project activity is titled- "18 MW Solar Power Plants in Karnataka M/s Asian Fab Tec Limited". Located in the Village- Bevinahalli, Tehsil- Sira, District- Tumkur, State- Karnataka, Country- India.

Company's	Plant Capacity	Entities involved in	Commissioning	Geo co-ordinates of
Name	(MW)	Power purchase	Date	Location
		agreement		
M/s Asian	3	CESC, Mysuru	23/12/2016	Latitude: 13°54'38.1"N
Fab Tec	5	CESC, Mysuru	23/12/2016	Longitude: 76°49'16.0"E
Limited	10	BESCOM	11/01/2017	

The Project Activity is a greenfield solar project and the electricity generated by the project is exported to the national grid of India. According to the power purchase agreements/7/, the electricity is purchased by Chamundeshwari Electricity Supply Corporation Ltd (CESC), Mysuru and Bangalore Electricity Supply Company Ltd (BESCOM).

The project activity displaces an equivalent amount of electricity which would have otherwise been generated by fossil fuel dominant electricity grid. The estimated lifetime of the project activity is considered as 25 years for solar technology. In the Pre- project scenario the entire electricity, consumed by the customers or delivered to the grid by, would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources.

The main components of project activity are solar PV modules, inverter, set-up transformer, module mounting system and power conditioning units. The generation of power from solar photovoltaics is a clean technology as there is no fossil fuel-fired or no GHG gases are emitted during the process. Thus, project activity leads to a reduction the GHG emissions as it displaces power from fossil fuel-based electricity generation in the regional grid. Since the project activity generates electricity through solar energy, it will not cause any negative impact on the environment and thereby contributes to climate change mitigation efforts. The project activity also contributes to SDG goals 7,8 and 13.

The crediting period of the project activity is 10 years in which total estimated electricity generation is 3,14,747 MWh and the total GHG emission reduction estimated is 2,83,272 tCO₂e. Also, the annual average estimated emission reductions from project activity are 28,327 tCO₂e/annum with the average plant load factor of 20.5%. During the monitoring period 1,82,901 tCO₂e of emission reduction has been reported. The annual average net electricity generation and annual average GHG emission reductions are with application of degradation factor of 0.70% from second year.

Scope of Verification

The scope of the services for the project is to perform Project Verification of concerned Project Activity. The scope of verification is to assess the claims and assumptions made in the Project Concept Note (PCN) and Monitoring Report (MR) against the UCR criteria, including but not limited to, UCR program verification guidance document, UCR Standard, UCR Program Manual, and related rules and guidelines established under Program process.

Verification Process and Methodology

The verification process was undertaken by a competent verification team and involved the following,

- Desk review of documents and evidence submitted in context of the reference rules and guidelines issued by UCR,
- Undertaking/conducting site visit/remote audit, interview or interactions with the representative of the project owners/representatives,
- Reporting audit findings with respect to clarifications and non-conformities and the closure of the findings, as appropriate and preparing a draft verification opinion based on the auditing findings and conclusions

• Finalization of the verification opinion (this report)

Desk/Document review

A detailed desk review of the PCN, MR, Methodology and all other associated documentation and references took place in advance of the site visit, and additional documents that were not available for the desk review were requested for review during the site visit. Additional information can be required to complete the verification, which may be obtained from other public and reliable sources or through telephone and face to face interviews with key stakeholders (including the project developers and where necessary, government and NGO representatives in the host country).

A list of all documents reviewed or referred to in the course of this verification is included in Appendix 3 below.

Follow up interviews/site visit

The verifier conducted remote audit and had requested for site photographs, short videos. A remote interview was conducted with the project owners and stakeholders.

Conclusion

Based on the work performed, the verifier concludes that the "18 MW Solar Power Plants in Karnataka M/s Asian Fab Tec Limited." The information and data presented in the MR version 2 dated 08/07/2024 is in line with the Project Concept Note Version 2 dated 09/05/2024 and meets all relevant requirements of the UCR for UCR project activities. The UCR project activity correctly applies the methodology "ACM0002: Grid-connected electricity generation from renewable sources version 21.0/13/" leading to result in real, measurable and long-term emission reductions achieved for the current monitoring period.

For the current monitoring period, verified emission reductions achieved by the project activity were as below;

Start date of monitoring period	01/01/2017
End date of monitoring period	31/12/2023
Emission reductions achieved	1,82,901 tCO ₂ eq

Project Verification team, technical reviewer and approver

Project Verification team

No.	Role	Last	First	Affiliation	Involvement in		
		name	name	(e.g. name of central or other office of UCR Project Verifier or outsourced entity)	Document review	Off-Site inspection	Interviews
1.	Team Leader/ Technic al Expert	Kumar	Pankaj	Enviance Services Private Limited	Yes	Yes	Yes
2.	V-V Trainee /	Jain	Vipul	Enviance Services Private Limited	Yes	Yes	Yes

	Technic al Expert in Trainee						
3.	V-V Trainee / Technic al Expert in Trainee	Yadav	Ritika	Enviance Services Private Limited	Yes	Yes	Yes

Technical reviewer and approver of the Project Verification report

No.	Role	Type of resourc e	Last name	First name	Affiliation (e.g. name of central or other office of UCR Project Verifier or outsourced entity)
1.	Technical reviewer	Internal	-	Vijayanand	Contractual resource

Means of Project Verification

Desk/document review

A detailed desk review of the PCN, MR, methodology and all other associated documentation and references took place in advance of the remote audit, and additional documents that were not available for the desk review were requested for review during the remote audit. Additional information can be required to complete the verification, which may be obtained from other public and reliable sources or through telephone and face-to face interviews with key stakeholders (including the project developers and where necessary, Government and NGO representatives in the host country).

A list of all documents reviewed or referred to in the course of this verification is included in Appendix 3 below.

Off-site inspection

	28/06/2024				
No.	Activ	ity performed Off-Site		Site location	Date
1.	 a) An assessm operation of and UCR req b) Verification documented meets the id Requirement c) Assessment certification 	nent of the implementation the project activity as per the juirements of the project design, is sound and reasonable, lentified criteria of UCR Star s and associated guidance to conformance with criteria as laid out in the	and PCN as and dard the UCR	Located at the Village- Bevinahalli, Tehsil- Sira, District- Tumkur, State- Karnataka, Country- India.	28/06/2024

Date of off-site inspection:

d)	Evaluation of the conformance with the certification scope, including the GHG project and baseline scenarios, additionality; GHG sources, sinks, and reservoirs; and the physical infrastructure, activities, technologies and processes of the GHG project to the requirements of the LICP:	
e)	Evaluation of the calculation of GHG emissions, including the correctness and transparency of formulae and factors used; assumptions related to estimating GHG emission reductions; and uncertainties; and determination whether the project could reasonably be expected to achieve the estimated GHG reduction/removals.	
f)	Review of information flows for generating, aggregating and reporting of the parameters to be monitored	
g)	To confirm that the operational and data collection procedures can be implemented in accordance with the Monitoring Plan	
h)	Cross-check of information provided in the submitted documents and data from other sources available at site	
i)	Review of calculations and assumptions made in determining the GHG data and estimated ERs, and an identification of QA/QC procedures in place to prevent, or identify and correct, any errors or omissions in the reported monitoring parameters	
j)	Interviews of local Stakeholders	

Interviews

No.		Interv iew		Date	Subje ct		
	Last name	First name	Affiliation				
1.	Prakash	K.V.	M/s Asian Fab Tec Limited	28/06/2024	Project Implementation,		
2.		Shivraj			Monitoring plan,		
3.		Sharath	Site manager		Project Boundary,		
4.	Michro	Privo	Vivid emissions		Eligibility criteria, Host country		
5.	WISTIA	ГПуа	reductions universal private Ltd.		requirements, Emission reduction calculations Project		
	Jain	Lokesh			monitoring, Local		
7.		Dasanna	Local		consultation		
8.		Dhananjaya	stakeholders		Consultation		
9.		Eranna					
10.	HS	Shivaraju	1				
11.	N	Nagappa					

Sampling approach

Not applicable.

Clarification request (CLs), corrective action request (CARs) and forward action request (FARs) raised

Areas of Project Verification findings	No. of CL	No. of CAR	No. of FAR
Green House Gas (GHG)			
Identification and Eligibility of project type	-	-	-
General description of project activity	02	03	-
Application and selection of methodologies and standardized baselines	-	-	-
 Application of methodologies and standardized baselines 	01	-	-
 Deviation from methodology and/or methodological tool 	-	-	-
 Clarification on applicability of methodology, tool and/or standardized baseline 	-	-	-
 Project boundary, sources and GHGs 	-	-	-
- Baseline scenario	-	01	-
 Estimation of emission reductions or net anthropogenic removals 	-	02	-
- Monitoring Report	05	03	-
Start date, crediting period and duration	-	01	-
Environmental impacts	-	-	-
Project Owner- Identification and communication	-	-	-
Others	-	-	-
Total	08	10	-

Project Verification findings

Identification and eligibility of project type

Means of Project Verification	The project has an installation of 18 MW solar capacity and hence it qualifies as a large-scale project. This is confirmed based on the commissioning certificates/6/ and technical specifications.
	Since the project is a large-scale project, it has applied approved CDM large scale methodology ACM0002: Grid-connected electricity generation from renewable sources version 21.0/13/.
	The Project owner has used valid MR form available at the UCR website for the preparation of MR for the current project activity. The project has prepared MR in line with UCR guidance and requirements.
Findings	No findings raised
Conclusion	The UCR-approved format is used for description and the project meets the requirement of the UCR verification standard and UCR project standard/12/. UCR project communication agreement /1/ was submitted to the verifier and the same has been verified. Methodology referenced and applied appropriately describing the project type. The eligibility of the project aggregator is verified using the UCR communication agreement, project correctly applies the verification standard, UCR project standard, and UCR regulations/12/. The project activity is overall meeting the requirements of the UCR Verification standard and UCR project standard.

General description of project activity

Means of Project Verification	The project activity involves the operation of an 18 MW of large-scale solar power project and its commissioning date and power evacuation at the substation were verified through the commissioning certificate/6/ of the project. The power purchase agreement/7/ confirms the companies/entities involved in the agreement for purchase of electricity from the 18MW (3 MW +5 MW + 10 MW) project. Assessment team conducted documentation review of the PCN against the UCR program verification standard version 2.0 and UCR project.
	eligibility criteria version 6.0 and the UCR-PCN-FORM Version 1.0/12/. By checking the supporting documents, it is confirmed that the project is a greenfield solar power project, located in village Bevinahalli, Tehsil Sira, district-Tumkur in Karnataka state of India. The approximate geo- coordinates of the project locations are 13°54'38.1"N and 76°49'16.0"E. Assessment team performed an offsite inspection of project and confirmed that the location described in the PCN are accurate.
	The Project is a solar power project, that utilize solar energy to generate zero carbon emission electricity which is mainly dominated by fossil fuel power output. The project includes integrated power transmission mechanism, photovoltaic (PV) modules, inverters, transformers, other relay & protection systems, microprocessor based fully automatic control system with user friendly operation and central monitoring system. Quality, Safety and Health plan for construction, installation, commissioning and Operation & Maintenance.
Findings	CL 04, CL 05, CAR 01, CAR 07 and CAR 08 were raised and closed successfully. More information presented appendix below.
Conclusion	The description of the project activity is verified to be true based on the review of PCN/2/, MR/3/, Commissioning Certificate/6/ and power purchase agreement/7/.

Application and selection of methodologies and standardized baselines

(.a.i) Application of methodology and standardized baselines

Means of Project Verification	The project has taken the reference of CDM methodology ACM0002: Grid-connected electricity generation from renewable sources version 21.0/13/. CDM website is referred to check the latest version of the methodology. For the applicability mentioned in the PCN/2/ and MR/3/, technical Specification, and commissioning certificate/6/.
Findings	No findings raised
Conclusion	The methodology applied is appropriately meeting the requirements of UCR and its standardized baseline. The methodology version is correct and valid. The referenced methodology is applicable to project activity.

(.a.ii) Clarification on applicability of methodology, tool and/or standardized baseline

Means of Project Verification	The documents reviewed are CDM methodology ACM0002: Grid-	
	connected electricity generation from renewable sources version	
	21.0/13/, UCR Program standard, and UCR Verification Standard/12/.	
Findings	CL 03 was raised and closed successfully. More information presented	
	appendix below.	
Conclusion	The verification team confirms that all the applicability criteria set by	
	the applied CDM methodology/13/ and its eligible tools are met. The	
	relevant information against those criteria is also included in the	

PCN/2/ and MR Ver.2/3/. The selected CDM methodology for the
project activity is applicable.

(.a.iii) Project boundary, sources and GHGs

Means of Project Verification	Project owner has considered project boundary as per applicable methodology ACM0002: Grid-connected electricity generation from renewable sources version 21.0/13/, "The spatial extent of the project boundary includes the project power plant/unit and all power plants/units connected physically to the electricity system that the CDM project power plant is connected to." Review of PCN/2/ and MR/3/ confirms that project sites and Indian electricity grid system is considered as a project boundary which is appropriate.
Findings	No findings raised
Conclusion	The project boundary is correctly defined in the PCN/2/ and MR/3/. GHG sources are correctly identified and reported. The project meets the requirements of UCR project standard, Verification standard and methodology requirements for a boundary, GHG sources.

(.a.iv) Baseline scenario

Means of Project Verification	As per the applied methodology ACM0002: Grid-connected electricity generation from renewable sources version 21.0/13/ the baseline scenario is as following: The baseline scenario is electricity delivered to the grid by the project activity that would have otherwise been generated by the operation of grid-connected power plants. Remote audit conducted and document review showed that in absence of the project activity, the generated electricity would have been supplied by the Indian grid which is dominated by fossil fuel fired plants.
Findings	CAR 02 was raised and closed successfully. More information presented appendix below.
Conclusion	The approved baseline methodology has been correctly applied to identify a realistic and credible baseline scenario, and the identified baseline scenario most reasonably represents what would occur in the absence of the proposed UCR project activity. All the assumption and data used by the project participants are listed in the PCN and/or supporting documents. All documentation relevant for establishing the baseline scenario are correctly quoted and interpreted in the PCN. Assumptions and data used in the identification of the baseline scenario are justified appropriately, supported by evidence and can be deemed reasonable.

(.a.v) Estimation of emission reductions or net anthropogenic removal

Means of Project Verification	The project verification team checked whether the equations and parameters used to calculate GHG emission reductions or net anthropogenic GHG removals for PCN/2/ and MR /3/ are in accordance with applied methodology. Project verification team checked section B.5 and C.5.1
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of the PCN/2/ & MR/3/ respectively to confirm whether all formulae to calculate baseline emissions, project emission and leakage have been applied in line with the underlying methodology.

The emission reduction calculation has been carried out as per the CDM methodology ACM0002, Version 21.0/13/.

 $BE_y = EG_{BLy} X EF_{CO2}, y$

Where, BEy = Baseline Emissions in year y; tCO_2

 EG_{BLy} = Quantity of net electricity displaced as a result of the implementation of the CDM project activity in year y (MWh)

 $EF_{CO2, y}$ = Combined margin CO₂ emission factor for grid connected power generation in year y.

A "grid emission factor" refers to a CO_2 emission factor (t CO_2/MWh) which will be associated with each unit of electricity provided by an electricity system. The UCR recommends an emission factor of 0.9 t CO_2/MWh for the 2013-2020 years as a fairly conservative estimate for Indian projects not previously verified under any GHG program/11/. Also, for the vintage 2021, the combined margin emission factor calculated from CEA database in India results into higher emission than the default value. Hence, the same emission factor has been considered to calculate the emission reduction under conservative approach.

Project emissions: As per paragraph 35 of the applied methodology, For most renewable energy project activities, $PE_y = 0$. Since solar power is a GHG emission free source of energy project emission considered as Zero for the project activity.

Leakage Emissions: As per the paragraph 61 of the applied methodology ACM0002 Version 21.0/13/, there are no emissions related to leakage in this project.

Emission reductions: As per Paragraph 62 of the applied methodology, emission reductions are calculated as follows

 $ER_y = BE_y - PE_y - LE_y$

Where: ERy = Emission reductions in year y (tCO_2)

 BE_y = Baseline Emissions in year y (t CO_2)

 $PE_y = Project$ emissions in year y (t CO_2)

 LE_y = Leakage emissions in year y (t CO₂)

 $ER_y = BE_y - PE_y$ $ER_y = (EG_{facility, y} * EF_{grid, CM, y}) - PE_y$ $ER_y = (31,475*0.9) - 0$ $ER_y = 28,327$ (tCO2e/year)

Therefore, $ER_v = BE_v$

The start date of the Project is from 23/12/2016 which is the earliest Commissioning date. For the ease of the calculation, duration of the crediting period is started from 01/01/2017 to 31/12/2027.

	Year	Net Generation with	Baseline Emissions	Project Emissions	Leakage	Emission Reductions
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	Degradation Factor				
	MWh	(tCO ₂ e)	(tCO ₂ e)	(tCO ₂ e)	(tCO ₂ e)
Year 1	32479.00	29231.10	0.00	0.00	29231.10
Year 2	32251.65	29026.48	0.00	0.00	29026.48
year 3	32025.89	28823.30	0.00	0.00	28823.30
Year 4	31801.70	28621.53	0.00	0.00	28621.53
Year 5	31579.09	28421.18	0.00	0.00	28421.18
Year 6	31358.04	28222.23	0.00	0.00	28222.23
Year 7	31138.53	28024.68	0.00	0.00	28024.68
Year 8	30920.56	27828.51	0.00	0.00	27828.51
Year 9	30704.12	27633.71	0.00	0.00	27633.71
Year 10	30489.19	27440.27	0.00	0.00	27440.27
Total Emission reduction	314,747	283,272	0	0	283,272
Average Emission Reduction	31,475	28,327	0	0	28,327
Emission reductions for Project Activity 1: $ER_y = BE_y - PE_y$ $= (EG_{facility, y} * EF_{grid, CM, y}) - PE_y$ ERy= (33,975.20*0.9)-0 $ERy=30,577tCO_2$					
Emission reduct $ER_y = BE_y - PE$ $= (EG_{facility,}$ ERy= (6,00,22. ERy=54,019 tC	Emission reductions for Project Activity 2: $ER_y = BE_y - PE_y$ $= (EG_{facility, y} * EF_{grid, CM, y}) - PE_y$ ERy= (6,00,22.19*0.9)-0 $ERy=54,019 tCO_2$				
Emission reductions for Project Activity 3: $ER_y = BE_y - PE_y$ $= (EG_{facility, y} * EF_{grid, CM, y}) - PE_y$ ERy= (1,09,230 * 0.9)-0 $ERy=98,307 tCO_2$					
Emission reductions (BEy) for Entire Project Activity : $ER_y = BE_y - PE_y$ $= (EG_{facility, y} * EF_{grid, CM, y}) - PE_y$ $ER_y = (203,227.71*0.9)-0$ $ER_y=1,82,903 tCO_2$					
Emission Red	Emission Reduction Per Monitoring Year:				

	Vintage Year	Net Generation in MWh	Grid Emission Factor	Emission Reduction(tCO2)
	01/01/2017 to 31/12/2017	35682.35	0.9	32114
	01/01/2018 to 31/12/2018	30042.04	0.9	27037
	01/01/2019 to 31/12/2019	29055.9	0.9	26150
	01/01/2020 to 31/12/2020	27216.64	0.9	24494
	01/01/2021 to 31/12/2021	26393.04	0.9	23753
	01/01/2022 to 31/12/2022	26120.2	0.9	23508
	01/01/2023 to 31/12/2023	28717.46	0.9	25845
	Total	203227.63	0.9	182901
Findings	CAR 09 & CAR 10 were rais appendix below.	ed and closed successf	ully. More information	is present in
Conclusion	In summary, the calculation according to the method renewable sources version 2 electricity system" Version 0 It is confirmed by Assessme (a) All assumptions made f used by the project participa quoted and interpreted in the considered reasonable in methodologies and, whe methodological regulatory project and leakage GHG en the baseline GHG emissions in the PCN:	n of emission reduction ology ACM0002: Grid 21.0/13/ and its tool "To 7.0. In team that: for estimating GHG are ants as the basis for as the PCN; (c) All value the context of the p ore applicable, the s documents have been missions, as well as GH s can be replicated usin	s was correctly demon l-connected electricity pool to calculate the em listed in the PCN; (b sumptions and source s used in the PCN i proposed UCR project standardized baseline applied correctly to G emission reductions ig the data and param	 nstrated by the PP generation from nission factor for an a) All documentation b) All documentation c) data is correctly ncluding GWPs are ct activity; (d) The es and the other calculate baseline, b; (e) All estimates of eter values provided

(.a.vi) Monitoring Report

Means of Project Verification	Parameters determined- Ex-ante			
	The following parameters are determined ex-ante and verified by the verification team:			
	The baseline emission factor $(EF_{grid, y})$ of the project is reported to be determined ex-ante and would remain fixed for the crediting period. A "grid emission factor" refers to a CO ₂ emission factor (tCO2/MWh) which will be associated with each unit of electricity provided by an electricity system. The UCR recommends an emission factor of 0.9 tCO ₂ /MWh for the 2013-2020 years as a fairly conservative estimate for Indian projects not previously verified under any GHG program. Also, for the vintage 2021, the combined margin emission factor calculated from CEA database in India results into higher emission than the default value. Hence, the same emission factor has been considered to calculate the emission reduction under conservative approach. The parameters applied in the calculation were validated by the verification team. The verification team confirms that all relevant parameters have been sufficiently considered and the values of the parameters are real, measurable and conservative.			
	Parameters monitored ex-post			
	According to the approved methodology ACM0002: Grid- connected electricity generation from renewable sources version 21.0/13/, the following parameters will be monitored:			
	Parameter Description			
	EG _{PJ,y} Quantity of net electricity generation supplied by the project plant/unit to the grid in year y			
	The values of the parameters monitored were checked against submitted Joint Meter Readings/8/ and invoices and were found correct.			
	Management system and quality assurance			
	The monitoring plan presented in the PCN complies with the requirements of the applicable methodology. The verification team has verified all parameters in the monitoring plan against the requirements of the methodology and no deviations have been found.			
	The management system and quality assurance procedures have been reviewed by the verification team through document review and interviews with the project participant. The project participant would train all the monitoring staffs are trained against with related requirement; the training guidelines and monitoring manual are saved and verified.			
	The monitoring plan outlines in the PCN includes:			

	 Monitoring Organization Monitoring apparatus and installation: Calibration Data collection: Data Management system The submitted calibration certificates were checked and it was confirmed that the calibrations are conducted periodically as specified in the PCN/2/ i.e. at least once in 5 years. No delay in calibration is observed and no meter change has taken place during the current monitoring period.
Findings	CL 01, CL 02, CL 06, CL 07, CL 08, CAR 03, CAR 04 and CAR 05 were raised and closed successfully. More information presented in the appendix below.
Conclusion	The verification team is convinced of compliance of the monitoring plan with the requirements of the monitoring methodology ACM0002: Grid-connected electricity generation from renewable sources version 21.0/13/. During the remote audit assessment, the verification team interviewed the PP that the monitoring arrangements described in the monitoring plan are feasible within the project design.
	The monitoring parameter reported in MR/3/ adequately represents the parameters relevant to emission reduction calculation. The calibration report ensures the accuracy of the data reported. The number of CoUs generation is calculated based on this accurately reported data. The calculation was done using an excel sheet where all the parameters were reported. The grid emission factor for electricity is considered as per UCR recommendation for Indian project. In the monitoring report/3/, emission reduction calculations are correctly calculated and reported. The monitoring report meets the requirements of UCR project verification requirements.

Start date, crediting period and duration

Means of Project Verification	The start date and crediting period of project activity was checked based on the commissioning certificate/6/, PCN/2/, MR/3/ and other documents provided.
Findings	CAR 06 was raised and closed successfully. More information presented
	in the appendix below.
Conclusion	The project has chosen crediting period start date as 01/01/2017. The
	crediting period is chosen as 01/01/2017 to 31/12/2023.

Positive Environmental impacts

Means of Project Verification	PP has not claimed any separate positive environmental impact. The project being renewable energy project will reduce fossil fuel use through replacement of the same.
Findings	No findings raised
Conclusion	The project is a renewable energy project and reduces the environmental burden by reducing the dependence on fossil fuel-based power plants.

Project Owner- Identification and communication

Means of Project Verification	PCN/2/, communication agreement/1/, MR/3/, commissioning certificate/6/, power purchase agreement/7/.
Findings	No findings raised
Conclusion	The project owner was identified through a communication agreement/1/ signed between project owner and project aggregator. Commissioning certificates/6/ and Power Purchase Agreement /7/ were also verified and they clearly establish the project ownership. The identification and communication correctly meet the requirement of project verification and UCR project standard. Project owner: M/s Asian Fab Tec Limited

Positive Social Impact

Means of Project Verification	Project has provided temporary employment to local people during its installation and commissioning. Also post commissioning some of people have employed permanently and local people were engaged leading to social financial benefit to surrounding. Overall social impact of project implementation is positive on the surrounding area
Findings	No findings raised
Conclusion	Project has overall positive social impact

Sustainable development aspects (if any)

Means of Project Verification	PP has claimed SDG Goals 7, 8 & 13. SDG 7 is affordable and clean energy and it is verified during remote audit as the project is solar power plant. SDG 8 is decent work & economic growth and SDG 13 is climate action. These claims were checked on the basis of supporting documents, JMR & invoice, employment of the local people on the project site and emission reduction calculations respectively.
Findings	Not applicable
Conclusion	The project has the capability to address SDG 7, 8 and 13.

Internal quality control

The verifier confirms that,

- Due professional care has been taken while reviewing the submitted document.
- There is no conflict of interest as the verifier has no other engagement with either the aggregator or project owner directly or indirectly.
- Verification team consists of experienced personnel.

Project Verification opinion

Assessment team conducted documentation review the PCN/2/ against the UCR program verification standard version 2.0 and UCR project eligibility criteria version 6.0 and the UCR-PCN-FORM Version 1.0/12/.

It is confirmed that the project activity is an 18MW greenfield solar power plant, located in the Village Bevinahalli, Tehsil- Sira, District- Tumkur, State- Karnataka, Country-India. The geo co-ordinates of the project are Latitude: 13°54'38.1"N and Longitude:

76°49'16.0"E. Assessment team performed an offsite audit and confirmed that the location described in the PCN is accurate. The verification was performed on the basis of UCR requirements, and host country criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting.

The verification consisted of the following three phases: i) desk review of the PCN, MR and additional background documents; ii) follow-up interviews with project stakeholders; iii) resolution of outstanding issues and the issuance of the final verification report and opinion.

The project correctly applies the approved baseline and monitoring methodology ACM0002: Grid-connected electricity generation from renewable sources version 21.0/13/.

The monitoring plan provides for the monitoring of the project's emission reductions. The monitoring arrangements described in the monitoring plan are feasible within the project design, and the project participants are able to implement the monitoring plan. Given that the project is implemented and maintained as designed, the project has achieved the emission reductions of 1,82,901 tCO2eq during the monitoring period i.e. from 01/01/2017 to 31/12/2023.

The review of the project design documentation and the subsequent follow-up interviews have provided assessment team with sufficient evidence to determine the fulfilment of stated criteria. In our opinion, the project meets all applicable UCR requirements. Assessment team thus requests the registration of the proposed UCR project activity.

Abbreviations	Full texts
ACM	Approved Methodology for large-Scale CDM project activities
UCR	Universal Carbon Registry
PCN	Project Concept Note
MR	Monitoring Report
t	Tonnes
NGO	Non-Governmental Organization
ISO	International Organization for Standardization
CAR	Corrective Action Request
CL	Clarification Request
GHG	Greenhouse Gas
MWh	Megawatt Hours
CO ₂	Carbon Dioxide
CH4	Methane
N2O	Nitrous Oxide

Abbreviations

Competence of team members and technical reviewers

- Mr. Pankaj Kumar worked as team leader Bihar for South Asia Climate Proofing and Growth Development (CPGD) – Climate Change Innovation Programme (CCIP) supported by DFID that seeks to mainstream climate change resilience into planning and budgeting at the national and sub-national level in India, Pakistan, Nepal, and Afghanistan. Pankaj Kumar has worked previously with IL&FS Infrastructure Development Corporation and BUIDCO (Bihar Urban Infrastructure Development Corporation), Govt. of Bihar as Environmental Specialist for WB & ADB funded projects. Prior to this, he worked with Carbon Check (UNFCCC accredited DoE). Johannesburg, RSA, Applus certification as Team Leader for validation, verification of around 100 GHG projects in Asia, Africa, USA, Asia Pacific & Americas. Pankaj is accredited Lead Auditor, Validator, Verifier and Technical Expert for Sectoral Scope/Technical Area – 1.1, 1.2, 3.1, 4.1, 13.1 by Enviance. He is also member of task force on climate change & human health, Health Department, GoB and on roster of UNICEF's WASH experts. He is an experienced, gualified and result oriented Environment Professional having more than 14 yrs. of relevant experience in Climate Change (Mitigation & Adaptation), Environmental Due Diligence, Disaster Risk Reduction, Validation and Verification of GHG project under CDM, Verified Carbon Standard, Gold Standard & Social Carbon Standard, Brazil. He provides technical support for environmental investigative, consultative and remedial projects involving air, water and soil. Waste management, EIA, Environmental Compliance, ISO 14001. OHSAS 18001, GHG accounting (ISO 14064) and Carbon foot printing. Pankaj Kumar is Masters in Environment Management from Forest Research Institute (University), I.C.F.R.E, Dehradun, which is Centre of Excellence in South East Asia for Forestry education & research and PGDEL from National Law School of India University, Bangalore (India).
- Vipul holds Bachelor of Technology from VIT University Vellore in 2020. He has gained valuable work experience as a site engineer at Light House Energy Developers, where he was employed from May 2020 to August 2022. Vipul holds an IRCA certification as an ISO 9001 Lead Auditor, demonstrating his expertise in quality management systems. He is well-versed in ISO 14064-1, ISO 14064-2, and ISO 14064-3, which are standards for greenhouse gas accounting and reporting. Furthermore, Vipul has received training in ISO 17029 and ISO 14065, highlighting his proficiency in environmental auditing and conformity assessment. He has also completed Clean Fuel Regulation training from Environment and Climate Change Canada, demonstrating his expertise in environmental management and sustainability.
- Ritika Yadav, a Chemical Engineering graduate from Government Ujjain Engineering College, Ujjain, is currently residing in Indore. She pursued her Masters in Environmental Management from Rajiv Gandhi Prodyogiki University. With a background in Foam and Mattress industry, having worked at Duroflex Pvt. Ltd., she brings over a year of experience in the climate change and Sustainability domain. During her tenure at True Quality Certifications Pvt. Ltd., an outsourced entity for LGAI Technological Center, S.A. (Spain), Ritika actively contributed to supporting audit teams. Her responsibilities included the validation and verification of project activities,

both renewable and non-renewable, under various greenhouse gas (GHG) schemes such as CDM, VCS, GS, and GCC.

Mr. Vijayanand is an experienced professional, a strategic HSE expert with 16 years of leadership in environmental consulting, audit, and regulatory compliance. He has successfully implemented HSE/ESG rules across Asia and Europe, managing corporate and site-level HSE functions. His roles have involved EIA, waste management, and policy development. He is leading HSE and ESG efforts at Hero Future Energies, demonstrating budgeting, due diligence, and international standard implementation skills. He has contributed to impactful projects like ESIA, renewable energy initiatives, and audits. He is also having accreditation as a Lead Auditor in CDM and Verra by various DOEs/VVBs, he is qualified by Enviance as a TL, TR and Technical expert in Secton 1.2, 3.1, 14.1.

No.	Author	Title	References to	Provider
			the document	
1	NA	Communication agreement		Project Owner
2	NA	Project Concept Note		Aggregator
3	NA	Monitoring report		Aggregator
4	NA	Emission reduction sheet		Aggregator
5	NA	Declaration on avoidance of double counting		Aggregator
6	NA	Commissioning Certificates for the solar power plants		Aggregator
7	NA	Power purchase agreement		Aggregator
8	NA	Joint Meter Readings/invoices for the		Aggregator
9	NA	Calibration certificates for energy meters		Aggregator
10	NA	Equipment purchase order		Aggregator
11	NA	Grid Emission factor recommended for Indian projects by UCR		General project eligibility criteria and guidance UCR standard version 6.0
12	UCR	UCR Program manual version 5 UCR COU standard version 6 UCR Verification standard version 2 UCR terms and conditions		Universal Carbon Registry
13	CDM	CDM approved methodology- ACM0002: Grid Connected electricity generation from renewable sources version 21.0		UNFCCC

Document reviewed or referenced

Clarification request, corrective action request and forward action request

Table 1. CLs from this Project Verification

Classification	🔀 CL/CR	FAR	Number:	01

Raised by:	Mr. Pankaj Kumar	Document Reference	MR
Finding Description		Date:	01/07/2024
JMR readings of few months are inconsistent with the readings of B forms provided. PP should clarify the inconsistency in JMR.			
Client/Responsible Party/Project Proponent Response Date: 09/07/			09/07/2024
PP has modified the monthly generation value inline with the Provided B-forms.			
Validation/Veri	fication Team Assessment	Date:	22/07/2024

PP has made the necessary corrections. Hence, this part of CL is closed.

Classification		Number:	02		
Raised by:	Mr. Pankaj Kumar Document Reference				
Finding Descri	Finding DescriptionDate:01/07/2024				
PP should submit supporting documents for few JMR readings. Kindly submit					
Client/Responsible Party/Project Proponent Response Date: 09/07/2024					
PP has submitted the Pending JMR					
Validation/Veri	fication Team Assessment	Date:	22/07/2024		
	141				

PP has submitted the necessary supporting documents. Hence, this part of CL is closed.

Classification	CAR CL/CR FAR] Number:	03
Raised by:	Mr. Pankaj Kumar	Document Reference	MR
Finding Description		Date:	01/07/2024
PP shall submit	an undertaking for no double counti	ng for current monitoring perioc	and for project activity
has neither been registered			
nor seeking registration under any other GHG programs. Kindly Submit.			
Client/Responsible Party/Project Proponent Date: 09/07/2024			
Response			
PP has submitted the undertaking for no double counting for the current monitoring period Stating that			
Project activity has neither been registered nor seeking registration under any other GHG programs.			
Validation/Veri	fication Team Assessment	Date:	22/07/2024

PP has submitted the no double counting certificate. Hence, this part of CL is closed.

Classification		Number:	04	
Raised by:	Mr. Pankaj Kumar	Document Reference	MR	
Finding Descri	ption	Date:	01/07/2024	
PP shall clarify	PP shall clarify the Commissioning date of the solar power plant mentioned in the MR; as the mentioned			
date under MR is found inconsistent with the date mentioned under submitted commissioning certificate.				
Client/Responsible Party/Project Proponent Response Date: 9/07/2024				
PP has modified the commissioning date of the solar Power Plant throughout the MR as per the commissioning certificate Provided.				
Validation/Verification Team AssessmentDate:22/07/2024				
PP has made the necessary corrections. Hence, this part of CL is closed.				

Classification		Number:	05	
Raised by:	Mr. Pankaj Kumar	Document	MR	
		Reference		
Finding Description		Date:	01/07/2024	
PP has claimed SDG goal 8, for the same pp shall submit supporting documents of locally employed people. Kindly submit.				
Client/Responsible Party/Project Proponent Response Date: 09/07/2024				
PP will submit the Supporting document to substantiate the same				
Validation/Verification Team AssessmentDate:22/07/2024				
PP has submitted the employment details and has been assessed. Hence, this part of CL is closed.				

Classification		Number:	06	
Raised by:	Mr. Pankaj Kumar	Document Reference	MR	
Finding Description		Date:	01/07/2024	
PP shall submit the photographs of billing meters of all sub stations. Kindly submit.				
Client/Responsible Party/Project Proponent Response Date: 09/07/2024				
PP has submitted the Photographs of billing meters of all sub stations				
Validation/Veri	fication Team Assessment	Date:	22/07/2024	
PP has submitted the photographs of billing meters. Hence, this part of CL is closed.				

Classification		R Numb	er:	07
Raised by:	Mr. Pankaj Kumar	Docui	nent Reference	MR
Finding Descri	ption	Date:		01/07/2024
PP has not app	PP has not applied correction factor for readings from November 2020. Kindly clarify.			
Client/Responsible Party/Project Proponent Response Date: 09/07/2024				
PP wants to clarify that the most recent calibration was done on 25/09/2020, and as per the CEA guidelines testing of meters shall be done at site at least once in five years. Hence the validity of the calibration of the meters is till 24/09/2025. Since the meter is found to be working satisfactorily, PP has not applied the Error factor from 01/11/2020 to 31/12/2023				
Validation/Verification Team AssessmentDate:22/07/2024				
PP has clarified the reason behind not applying the correction factor. Hence, this part of CL is closed.				

Classification		FAR Number:	08
Raised by:	Mr. Pankaj Kumar	Document Reference	MR
Finding Description		Date:	01/07/2024
As per submitted calibration report, calibration frequency should be once in 3 months. In section C.10 of			

MR calibration frequency is mentioned as once in 5 years. PP to clarify the same.				
Client/Responsible Party/Project Proponent Response Date: 09/07/2024				
PP wants to clarify that Calibration is not under the purview of the Project Participant (PP) and is				
performed by the BESCOM Testing Division, which is the authorized body for meter testing. Which follows				
Central electricity authority (CEA) guidelines dated 17th march 2006 which states that testing of meters				
shall be done at site at least once in five years.				
Validation/Verification Team AssessmentDate:22/07/2024				
PP has clarified regarding calibration frequency. Hence, this part of CL is closed.				

Table 2. CARs from this Project Verification

Classification	CAR CL/CR FAR	Number:	01	
Raised by:	Mr. Pankaj Kumar	Document	MR	
		Reference		
Finding DescriptionDate:01/07/2024				
PP to add the details of the manufacturer/make/model of PV modules in the table. Kindly do the addition.				
Client/Responsible Party/Project Proponent Response Date: 09/07/2024				
PP has added the make of the PV module in the table.				
Validation/Verification Team AssessmentDate:22/07/2024				
DD has done the supported addition llanes this next of CAD is closed				

PP has done the suggested addition. Hence, this part of CAR is closed.

Classification		Number:	02
Raised by:	Mr. Pankaj Kumar	Document	MR
-		Reference	
Finding Descri	ption	Date:	01/07/2024
PP should provide the reference link for the UCR recommended grid emission factor in MR. Kindly do the			Kindly do the
needful.			
Client/Responsible Party/Project Proponent Response Date: 09/07/2024		09/07/2024	
PP has added the reference link for UCR recommended grid emission factor in the Monitoring report			
Validation/Veri	fication Team Assessment	Date:	22/07/2024
PP has done the suggested addition. Hence, this part of CAR is closed.			

Classification		Number:	03
Raised by:	Mr. Pankaj Kumar	Document Reference	MR
Finding Description		Date:	01/07/2024
In section C.10 of MR, table of fixed parameter is not added. Correction sought.			
Client/Responsible Party/Project Proponent Response Date: 09/07/2024			
PP has added the fixed Parameter table in the section C.10 of the Monitoring Period.			

Validation/Verification Team Assessment	Date:	22/07/2024
PP has done the suggested addition. Hence, this part of CAR is closed	d.	

Classification CL/CR FAR Number: 04 Raised by: Mr. Pankaj Kumar MR **Document Reference Finding Description** Date: 01/07/2024 In section C.10 of MR, parameter of net electricity is inconsistent with the parameter mention in the methodology. Correction sought. Client/Responsible Party/Project Proponent Response Date: 09/07/2024 PP has in lined the section C.10 of MR with respect to the applied methodology ACM0002-: Grid-connected electricity generation from renewable sources version 21.0. Validation/Verification Team Assessment Date: 22/07/2024 PP has made the suggested corrections. Hence, this part of CAR is closed.

Classification		Number:	05	
Raised by:	Mr. Pankaj Kumar	Document Reference	MR	
Finding Description		Date:	01/07/2024	
Calibration frequency and details are not mentioned in MR. Kindly add it.				
Client/Responsible Party/Project Proponent Response Date: 09/07/2024				
PP has already mentioned the Calibration frequency of the meters which is once in five years following the Central Electricity authority guidelines dated 17th March 2006, tested by Bangalore Electricity Supply Company Ltd (BESCOM) which is the authorized body for meter testing in section C.10.Monitoring Plan under the heading "Measurement methods and procedures".				
valuation/veri	incation ream Assessment	Date:	22/07/2024	
As suggested PP has added the calibration details in MR. Hence, this part of CAR is closed.				

Classification		Number:	06
Raised by:	Mr. Pankaj Kumar	Document Reference	MR & PCN
Finding Description		Date:	01/07/2024
In PCN on cover page 1 st issuance date is inconsistent with MR & section B.9 of PCN. Correction sought.			
Client/Responsible Party/Project Proponent Response Date: 09/07/2024			
PP has modified the Monitoring period throughout the MR in line with the Project Concept Note.			
Validation/Verification Team AssessmentDate:22/07/2024			
PP has done the suggested corrections and are inline with the MR & PCN. Hence, this part of CAR is closed.			

Classification		CL/CR	FAR	Number:	07
Finding Descri	ption			Date:	01/07/2024

In PCN basic information page is repeated twice. Kindly delete 1 page.				
Client/Responsible Party/Project Proponent Response	Date:	09/07/2024		
PP has modified.	1			
Validation/Verification Team Assessment	Date:	22/07/2024		
PP has done the suggested corrections. Hence, this part of CAR is closed.				

Classification	CAR CL/CR FAR	Number:	08		
Raised by:	Mr. Pankaj Kumar	Document	MR & PCN		
		Reference			
Finding DescriptionDate:01/07/2024					
In PCN under basic information table, PP has not mentioned the version of methodology. Correction sought.					
Client/Responsible Party/Project Proponent Response Date: 09-07-2024					
PP has added the version number of methodology.					
Validation/Verification Team AssessmentDate:22/07/2024			22/07/2024		
PP has done the suggested corrections. Hence, this part of CAR is closed.					

Classification		Number:	09		
Raised by:	Mr. Pankaj Kumar	Document	MR & PCN		
		Reference			
Finding DescriptionDate:01/07/2024					
In PCN estimated emission values are inconsistent throughout the report. Correction sought.					
Client/Responsible Party/Project Proponent Response Date: 09/07/2024					
PP has modified the value of the estimated emission reduction throughout the Project Concept Note (PCN).					
Validation/Verification Team Assessment Date:			22/07/2024		
PP has done the suggested corrections and now are consistent throughout the report. Hence, this part of					
CAR is closed.					

Classification	CAR CL/CR	Number:	10	
Raised by:	Mr. Pankaj Kumar	Document Reference	MR & PCN	
Finding Descri	ption	Date:	22/07/2024	
In MR version 2, values of total energy generation & emission reduction is inconsistent with the ER sheet. Correction sought.				
Client/Responsible Party/Project Proponent Date:23/07/2024 Response				

PP wants to clarify the total energy generation emission reduction is consistent with the ER sheet. Kindly refer to the Updated ER sheet.				
Validation/Verification Team Assessment Date: 23/07/2024				
PP has submitted the updated ER sheet and assessment has been done. All the values are consistent with				
the ER sheet. Hence, this part of CAR is closed.				

Table 3. FARs from this Project Verification

FAR ID	XX	Section no.		Date: DD/MM/YYYY	
Description	of FAR				
Project Owner's response Date: DD/MM/YYYY					
Documentation provided by Project Owner					
UCR Project Verifier assessment Date: DD/MM/YYYY					