


**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	<input type="checkbox"/> CDM or other GHG Accreditation <input checked="" type="checkbox"/> 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	04/10/2024
Title of the project activity	59.4 MW Bundled Wind Power Project in Rajasthan & Madhya Pradesh by Orchid Renewable Powertech Private Limited.
Project reference no. (as provided by UCR Program)	447
Name of Entity requesting verification service (can be Project Owners themselves or any Entity having authorization of Project Owners, example aggregator.)	UCR ID – 447 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 service (Focal Point assigned for all communications)	UCR ID – 447 Viviid Emissions Reductions Universal Pvt. Ltd. Name: Lokesh Jain

	Email ID – lokesh.jain@viviidg reen.com
Country where project is located	India
Applied methodologies (approved methodologies by UCR Standard used)	ACM0002: Grid-connected electricity generation from renewable sources version 21.0
GHG Sectoral scopes linked to the applied methodologies	01 Energy industries (Renewable/Non-Renewable Sources)
Project Verification Criteria: Mandatory requirements to be assessed	<input checked="" type="checkbox"/> UCR Standard <input checked="" type="checkbox"/> Applicable Approved Methodology <input checked="" type="checkbox"/> Applicable Legal requirements /rules of host country <input checked="" type="checkbox"/> Eligibility of the Project Type <input checked="" type="checkbox"/> Start date of the Project activity <input checked="" type="checkbox"/> Meet applicability conditions in the applied methodology <input checked="" type="checkbox"/> Credible Baseline <input checked="" type="checkbox"/> Do No Harm Test <input checked="" type="checkbox"/> Emission Reduction calculations <input checked="" type="checkbox"/> Monitoring Report <input checked="" type="checkbox"/> No GHG Double Counting <input type="checkbox"/> Others (please mention below)
Project Verification Criteria: Optional requirements to be assessed	<input checked="" type="checkbox"/> Environmental Safeguards Standard and do-no-harm criteria <input checked="" type="checkbox"/> Social Safeguards

	Standard do-no-harm criteria
<p>Project Verifier's Confirmation:</p> <p>The <i>UCR Project Verifier</i> has verified the UCR project activity and therefore confirms the following:</p>	<p>The UCR Project Verifier <i>Enviance Services Private Limited</i>, certifies the following with respect to the UCR Project Activity [<i>59.4 MW Bundled Wind Power Project in Rajasthan & Madhya Pradesh by Orchid Renewable Powertech Private Limited</i>].</p> <p><input checked="" type="checkbox"/> The Project Owner has correctly described the Project Activity in the Project Concept Note version 2 (dated 30/09/2024) including the applicability of the approved methodology [<i>ACM0002: Grid-connected electricity generation from renewable sources version 21.0</i>] and meets the methodology applicability conditions and has achieved the estimated GHG emission reductions, complies with the monitoring methodology and has calculated emission reductions estimates correctly and conservatively.</p> <p><input checked="" type="checkbox"/> The Project Activity is likely to generate GHG emission reductions amounting to the estimated [<i>88,978</i>] tCO₂e, as indicated in the PCN version 2,</p>

	<p>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.</p> <p><input checked="" type="checkbox"/> The Project Activity is not likely to cause any net-harm to the environment and/or society</p> <p><input checked="" type="checkbox"/> The Project Activity complies with all the applicable UCR rules¹ and therefore recommends UCR Program to register the Project activity with above mentioned labels.</p>
<p>Project Verification Report, reference number and date of approval</p>	<p>Verification Report</p> <p>UCR Reference number: 447</p> <p>Date of approval</p> <p>08/10/2024</p>
<p>Name of the authorised personnel of UCR Project Verifier and his/her signature with date</p>	<p>Vidhya Murali Krishna</p>  <p>Quality Manager</p> <p>Date: 08-10-2024</p>

PROJECT VERIFICATION REPORT

Executive summary

The project activity is titled- "59.4 MW Bundled Wind Power Project in Rajasthan & Madhya Pradesh by Orchid Renewable Powertech Private Limited".

It is a bundled wind-power Project located in Rajasthan and Madhya Pradesh. This project comprises of 56 wind turbines spread across 9 villages in two states: Rajasthan (seven villages in Jaisalmer and Jodhpur districts) and Madhya Pradesh (two villages in Dewas district).

Company	LOCNO	Site	Capacity (MW)	DOC	Village
Orchid-Raj	MK205	Jaisalmer	2.1	11-Sep-10	Selat
Orchid-Raj	MK204	Jaisalmer	2.1	11-Sep-10	Selat
Orchid-Raj	MK203	Jaisalmer	2.1	11-Sep-10	Selat
Orchid-Raj	MK202	Jaisalmer	2.1	24-Sep-10	Selat
Orchid-Raj	MK201	Jaisalmer	2.1	24-Sep-10	Selat
Orchid-Raj	AK29	Akal	1.25	14-Mar-11	Moda
Orchid-Raj	AK18	Akal	1.25	14-Mar-11	Sirwa
Orchid-Raj	J723	RATAN KA BAAS	1.5	31-Mar-08	Deriya
Orchid-Raj	J724	RATAN KA BAAS	1.5	31-Mar-08	Deriya
Orchid-Raj	J725	RATAN KA BAAS	1.5	31-Mar-08	Deriya
Orchid-Raj	J726	RATAN KA BAAS	1.5	31-Mar-08	Deriya
Orchid-Raj	J727	RATAN KA BAAS	1.5	31-Mar-08	Deriya
Orchid-Raj	RKBNL09	RATAN KA BAAS	1.5	25-Sep-09	Bastwa
Orchid-Raj	RKB87	RATAN KA BAAS	1.5	07-Nov-09	Bastwa
Orchid-Raj	RKB84	RATAN KA BAAS	1.5	29-Sep-09	Bastwa
Orchid-Raj	RKB85	RATAN KA BAAS	1.5	25-Sep-09	Bastwa
Orchid-Raj	KSOLTI-07 (77)	Tinwari	0.8	30-Sep-08	Salodi
Orchid-Raj	KSOLTI-10 (64)	Tinwari	0.8	26-Sep-08	Salodi
Orchid-Raj	KSOLTI-06 (76)	Tinwari	0.8	30-Sep-08	Salodi
Orchid-Raj	KSOLTI-05 (74)	Tinwari	0.8	26-Sep-08	Salodi
Orchid-Raj	KSOLTI-09 (65)	Tinwari	0.8	26-Sep-08	Salodi
Orchid-Raj	KSOLTI-08 (66)	Tinwari	0.8	30-Sep-08	Salodi
Orchid-Raj	KSOLTI-04 (71)	Tinwari	0.8	29-Sep-08	Salodi
Orchid-Raj	KSOLTI-03 (69)	Tinwari	0.8	26-Sep-08	Salodi
Orchid-Raj	KSOLTI-02 (14)	Tinwari	0.8	26-Sep-08	Beru
Orchid-Raj	KSOLTI-01 (13)	Tinwari	0.8	26-Sep-08	Beru
Orchid-MP	N-16	Dewas	1.25	31-Mar-06	Nagada
Orchid-MP	N-13	Dewas	1.25	31-Mar-06	Nagada
Orchid-MP	KSOLRT-30 (90)	Dewas	0.8	29-Jun-09	Karnavad
Orchid-MP	KSOLRT-29 (65)	Dewas	0.8	10-Jun-09	Karnavad
Orchid-MP	KSOLRT-28 (64)	Dewas	0.8	10-Jun-09	Karnavad
Orchid-MP	KSOLRT-27 (63)	Dewas	0.8	10-Jun-09	Karnavad
Orchid-MP	KSOLRT-31 (91)	Dewas	0.8	29-Jun-09	Karnavad

Orchid-MP	KSOLRT-32 (92)	Dewas	0.8	29-Jun-09	Karnavad
Orchid-MP	KSOLRT-24 (54)	Dewas	0.8	10-Jun-09	Karnavad
Orchid-MP	KSOLRT-33 (93)	Dewas	0.8	29-Jun-09	Karnavad
Orchid-MP	KSOLRT-25 (55)	Dewas	0.8	10-Jun-09	Karnavad
Orchid-MP	KSOLRT-34 (94)	Dewas	0.8	29-Jun-09	Karnavad
Orchid-MP	KSOLRT-26 (56)	Dewas	0.8	10-Jun-09	Karnavad
Orchid-MP	KSOLRT-23 (53)	Dewas	0.8	26-Mar-09	Karnavad
Orchid-MP	KSOLRT-15 (45)	Dewas	0.8	26-Mar-09	Karnavad
Orchid-MP	KSOLRT-16 (46)	Dewas	0.8	26-Mar-09	Karnavad
Orchid-MP	KSOLRT-14 (44)	Dewas	0.8	08-Aug-08	Karnavad
Orchid-MP	KSOLRT-13 (43)	Dewas	0.8	21-Jul-08	Karnavad
Orchid-MP	KSOLRT-12 (42)	Dewas	0.8	21-Jul-08	Karnavad
Orchid-MP	KSOLRT-11 (41)	Dewas	0.8	24-Jun-08	Karnavad
Orchid-MP	KSOLRT-10 (40)	Dewas	0.8	24-Jun-08	Karnavad
Orchid-MP	KSOLRT-09 (39)	Dewas	0.8	24-Jun-08	Karnavad
Orchid-MP	KSOLRT-08 (19)	Dewas	0.8	20-Mar-08	Karnavad
Orchid-MP	KSOLRT-07 (18)	Dewas	0.8	20-Mar-08	Karnavad
Orchid-MP	KSOLRT-06 (17)	Dewas	0.8	20-Mar-08	Karnavad
Orchid-MP	KSOLRT-05 (16)	Dewas	0.8	20-Mar-08	Karnavad
Orchid-MP	KSOLRT-03 (14)	Dewas	0.8	20-Mar-08	Karnavad
Orchid-MP	KSOLRT-04 (15)	Dewas	0.8	20-Mar-08	Karnavad
Orchid-MP	KSOLRT-02 (10)	Dewas	0.8	20-Mar-08	Karnavad
Orchid-MP	KSOLRT-01 (9)	Dewas	0.8	20-Mar-08	Karnavad

Geo Co-ordinates of all the locations are mentioned in the table below:

Loc No	Make	Site	Capacity in kW	Village	Latitude	Longitude
MK205	Suzlon	Jaisalmer	2100	Selat	27.19742	70.809694
MK204	Suzlon	Jaisalmer	2100	Selat	27.19558	70.814611
MK203	Suzlon	Jaisalmer	2100	Selat	27.19381	70.819528
MK202	Suzlon	Jaisalmer	2100	Selat	27.192	70.824472
MK201	Suzlon	Jaisalmer	2100	Selat	27.19019	70.829417
AK29	Suzlon	Akal	1250	Moda	26.707778	71.101806
AK18	Suzlon	Akal	1250	Sirwa	26.668361	71.101806
J723	Suzlon	RATAN KA BAAS	1500	Deriya	26.59386	72.55930556
J724	Suzlon	RATAN KA BAAS	1500	Deriya	26.59139	72.56197222
J725	Suzlon	RATAN KA BAAS	1500	Deriya	26.57875	72.56013889
J726	Suzlon	RATAN KA BAAS	1500	Deriya	26.57764	72.56430556

J727	Suzlon	RATAN KA BAAS	1500	Deriya	26.56847	72.56038889
RKBNL09	Suzlon	RATAN KA BAAS	1500	Bastwa	26.53647	72.56517778
RKB87	Suzlon	RATAN KA BAAS	1500	Bastwa	26.51966	72.57119444
RKB84	Suzlon	RATAN KA BAAS	1500	Bastwa	26.50928	72.56259167
RKB85	Suzlon	RATAN KA BAAS	1500	Bastwa	26.51044	72.57031111
KSOLTI-07 (77)	Enercon	Tinwari	800	Salodi	26.45925	72.83380556
KSOLTI-10 (64)	Enercon	Tinwari	800	Salodi	26.46103	72.84280556
KSOLTI-06 (76)	Enercon	Tinwari	800	Salodi	26.45799	72.83213056
KSOLTI-05 (74)	Enercon	Tinwari	800	Salodi	26.45684	72.82733056
KSOLTI-09 (65)	Enercon	Tinwari	800	Salodi	26.45925	72.84255278
KSOLTI-08 (66)	Enercon	Tinwari	800	Salodi	26.45641	72.843475
KSOLTI-04 (71)	Enercon	Tinwari	800	Salodi	26.45198	72.83128056
KSOLTI-03 (69)	Enercon	Tinwari	800	Salodi	26.45103	72.83588611
KSOLTI-02 (14)	Enercon	Tinwari	800	Beru	26.42775	72.86227222
KSOLTI-01 (13)	Enercon	Tinwari	800	Beru	26.4262	72.86237778
N-16	Suzlon	Dewas	1250	Nagada	22.89683	76.085361
N-13	Suzlon	Dewas	1250	Nagada	22.89525	76.077556
KSOLRT- 30 (90)	Enercon	Dewas	800	Karnavad	22.82214	76.226222
KSOLRT- 29 (65)	Enercon	Dewas	800	Karnavad	22.81111	76.212972
KSOLRT- 28 (64)	Enercon	Dewas	800	Karnavad	22.80936	76.2095
KSOLRT- 27 (63)	Enercon	Dewas	800	Karnavad	22.80747	76.208528
KSOLRT- 31 (91)	Enercon	Dewas	800	Karnavad	22.80972	76.235278
KSOLRT- 32 (92)	Enercon	Dewas	800	Karnavad	22.808	76.235611
KSOLRT- 24 (54)	Enercon	Dewas	800	Karnavad	22.79861	76.198778
KSOLRT- 33 (93)	Enercon	Dewas	800	Karnavad	22.80522	76.240028
KSOLRT- 25 (55)	Enercon	Dewas	800	Karnavad	22.79653	76.198278
KSOLRT- 34 (94)	Enercon	Dewas	800	Karnavad	22.80422	76.244917
KSOLRT- 26 (56)	Enercon	Dewas	800	Karnavad	22.79442	76.196889

KSOLRT-23 (53)	Enercon	Dewas	800	Karnavad	22.79489	76.21
KSOLRT-15 (45)	Enercon	Dewas	800	Karnavad	22.78511	76.215639
KSOLRT-16 (46)	Enercon	Dewas	800	Karnavad	22.78586	76.219861
KSOLRT-14 (44)	Enercon	Dewas	800	Karnavad	22.78294	76.215056
KSOLRT-13 (43)	Enercon	Dewas	800	Karnavad	22.78125	76.214556
KSOLRT-12 (42)	Enercon	Dewas	800	Karnavad	22.77925	76.213972
KSOLRT-11 (41)	Enercon	Dewas	800	Karnavad	22.77756	76.210972
KSOLRT-10 (40)	Enercon	Dewas	800	Karnavad	22.77378	76.200222
KSOLRT-09 (39)	Enercon	Dewas	800	Karnavad	22.77214	76.197
KSOLRT-08 (19)	Enercon	Dewas	800	Karnavad	22.74361	76.183694
KSOLRT-07 (18)	Enercon	Dewas	800	Karnavad	22.74178	76.1835
KSOLRT-06 (17)	Enercon	Dewas	800	Karnavad	22.73983	76.183139
KSOLRT-05 (16)	Enercon	Dewas	800	Karnavad	22.73847	76.18525
KSOLRT-03 (14)	Enercon	Dewas	800	Karnavad	22.73875	76.192167
KSOLRT-04 (15)	Enercon	Dewas	800	Karnavad	22.73669	76.188861
KSOLRT-02 (10)	Enercon	Dewas	800	Karnavad	22.72961	76.196917
KSOLRT-01 (9)	Enercon	Dewas	800	Karnavad	22.72908	76.201389

Proposed wind power project has evolved as a result of the policies of Government of India and Government of Rajasthan, which encourages energy development from renewable sources. These policies have given fresh impetus to wind power generation. Also, by virtue of being a wind power plant, the proposed plant can be instantly started, stopped and quickly adjusted for power generation corresponding to variations in power/energy releases.

The Project Activity is a greenfield wind project and the electricity generated by the project is exported to the national grid of India. According to the power purchase agreements, the net generated electricity from the project activity is for selling it to Jaipur, Jodhpur, & Ajmer VIDYUTH VITRAN NIGAM LIMITED(JVVNL) for Rajasthan & MP Power Trading Co. Ltd for Madhya Pradesh by the project proponent. The power produced by the Project Activity is evacuated at Amarsagar 220KV/132KV, Govt Akal GSS 440 KV/220KV, Tinwari GSS 220 KV/132KV, located at Jaisalmer and Jodhpur. For Madhya Pradesh the power produced by the project activity is evacuated at Dewas GSS 132KV/33KV, Ashtha,Vicholi & Indore 220KV/33KV located at Dewas.

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 20 years for wind 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 component of this project activity is wind turbine which consists of components like main tower, blades, nacelle, hub, main shaft, gear box, bearing and housing, brake and generator. The generation of power from wind turbines 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 wind 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 4,7,8 and 13.

The crediting period of the project activity is 11 years in which total estimated electricity generation is 98,865 MWh annually and the total GHG emission reduction estimated is 978,758 tCO₂e. Also, the annual average estimated emission reductions from project activity are 88,978 tCO₂e with the average plant load factor of 19%. During the monitoring period 690,005 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 in the project activity “59.4 MW Bundled Wind Power Project in Rajasthan & Madhya Pradesh by Orchid Renewable Powertech Private Limited”, the information and data presented in the MR version 2 dated 30/09/2024 is in line with the Project Concept Note Version 2 dated 30/09/2024 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” 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	01/04/2015
End date of monitoring period	31/12/2023
Emission reductions achieved	690,005 tCO ₂ eq

Project Verification team, technical reviewer and approver

Project Verification team

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

	Expert in Trainee						
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Technical reviewer and approver of the Project Verification report

No.	Role	Type of resource	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

Date of off-site inspection:
05/09/2024

No.	Activity performed Off-Site	Site location	Date
1.	<ul style="list-style-type: none"> a) An assessment of the implementation and operation of the project activity as per the PCN and UCR requirements b) Verification of the project design, as documented is sound and reasonable, and meets the identified criteria of UCR Standard Requirements and associated guidance c) Assessment to conformance with the certification criteria as laid out in the UCR Standards; 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 	<ul style="list-style-type: none"> 1) 10.5 MW – Selat Village, Jaisalmer District, Rajasthan State, India 2) 1.25 MW – Moda Village, Jaisalmer District, Rajasthan State, India 3) 1.25 MW – Sirwa Village, Jaisalmer District, Rajasthan State, India 	05/09/2024

	<p>requirements of the UCR;</p> <p>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.</p> <p>f) Review of information flows for generating, aggregating and reporting of the parameters to be monitored</p> <p>g) To confirm that the operational and data collection procedures can be implemented in accordance with the Monitoring Plan</p> <p>h) Cross-check of information provided in the submitted documents and data from other sources available at site</p> <p>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</p> <p>j) Interviews of local Stakeholders</p>	<p>4) 7.5 MW – Deriya Village, Jaisalmer District, Rajasthan State, India</p> <p>5) 6.0 MW – Bastwa Village, Jodhpur District, Rajasthan State, India</p> <p>6) 6.4 MW – Salodi Village, Jodhpur District, Rajasthan State, India</p> <p>7) 1.6 MW – Beru Village, Jodhpur District, Rajasthan State, India</p> <p>8) 2.5 MW – Nagada Village, Dewas District, Madhya Pradesh State, India</p> <p>9) 22.4 MW – Karnavad Village, Dewas District, Madhya Pradesh State, India</p>	
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Interviews

No.	Interview			Date	subject
	Last name	First name	Affiliation		
1.	-	Mr. Deepak	Orchid Renewable Powertech Private Limited	05/09/2024	Project Implementation, Monitoring plan, Project Boundary, Eligibility criteria, Host country requirements, Emission reduction calculations Project implementation, monitoring, Local stakeholder consultation
2.	-	Mr. Tirumalai			
3.	Singh	Narayn	Site Engineer, Ratan Ka Bass, Jaisalmer, Rajasthan		
4.	Kumar	Hemant	Assistant Manager, MP site		
5.	Sahoo	Manas Ranjan	Senior Engineer, MP site		
6.	Mahanta	Sarashi	Viviid emissions reductions universal private Ltd.		
6.	Bhati	Mohan Singh (Ratan Ka Bass Village)	Local stakeholders		
7.	Bishnoi	Mahipal (Salodi Village)			
8.	Singh	Hukam (Beru Village)			
9.	Rathore	Dilip Singh (Moda Village)			
10.	Singh	Bhom (Sirwa Village)			
11.	Singh	Kishan (Selat Village)			

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	01	-	-
Application and selection of methodologies and standardized baselines	-	-	-

- Application of methodologies and standardized baselines	-	-	-
- Deviation from methodology and/or methodological tool	-	-	-
- Clarification on applicability of methodology, tool and/or standardized baseline	-	-	-
- Project boundary, sources and GHGs	-	-	-
- Baseline scenario	-	-	-
- Estimation of emission reductions or net anthropogenic removals	-	01	-
- Monitoring Report	02	04	-
Start date, crediting period and duration	-	02	-
Environmental impacts	-	-	-
Project Owner- Identification and communication	-	-	-
Others	-	-	-
Total	03	07	-

Project Verification findings

Identification and eligibility of project type

Means of Project Verification	<p>The project has an installation of a 59.4 MW wind power capacity and hence it qualifies as a large-scale project. This is confirmed based on the commissioning certificates and technical specifications.</p> <p>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.</p> <p>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.</p>
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. UCR project communication agreement 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. 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 a 59.4 MW of large-scale wind power project and its commissioning date and power evacuation at the substation were verified through the commissioning certificate of the project. The power purchase agreement confirms the companies/entities involved in the agreement for purchase of electricity from the 59.4 MW (10.5 MW + 1.25 MW + 1.25 MW + 7.5 MW + 6.0 MW + 6.4 MW + 1.6 MW in Rajasthan and 2.5 MW + 22.4 MW in Madhya Pradesh) project.

Assessment team conducted documentation review of the PCN against the UCR program verification standard version 2.0 and UCR CoU Standard (project eligibility criteria) version 7.0 and the UCR-PCN-FORM Version 1.0.

By checking the supporting documents, it is confirmed that the project is a greenfield wind power project, the project is spread across different villages in Rajasthan & Madhya Pradesh state of India. The approximate geo-coordinates of the project locations are mentioned below.

Capacity in kW	Latitude	Longitude
2100	27.19742	70.809694
2100	27.19558	70.814611
2100	27.19381	70.819528
2100	27.192	70.824472
2100	27.19019	70.829417
1250	26.707778	71.101806
1250	26.668361	71.101806
1500	26.59386	72.55930556
1500	26.59139	72.56197222
1500	26.57875	72.56013889
1500	26.57764	72.56430556
1500	26.56847	72.56038889
1500	26.53647	72.56517778
1500	26.51966	72.57119444
1500	26.50928	72.56259167
1500	26.51044	72.57031111
800	26.45925	72.83380556
800	26.46103	72.84280556
800	26.45799	72.83213056
800	26.45684	72.82733056
800	26.45925	72.84255278
800	26.45641	72.843475
800	26.45198	72.83128056
800	26.45103	72.83588611
800	26.42775	72.86227222
800	26.4262	72.86237778
1250	22.89683	76.085361
1250	22.89525	76.077556
800	22.82214	76.226222
800	22.81111	76.212972
800	22.80936	76.2095
800	22.80747	76.208528

		800	22.80972	76.235278	
		800	22.808	76.235611	
		800	22.79861	76.198778	
		800	22.80522	76.240028	
		800	22.79653	76.198278	
		800	22.80422	76.244917	
		800	22.79442	76.196889	
		800	22.79489	76.21	
		800	22.78511	76.215639	
		800	22.78586	76.219861	
		800	22.78294	76.215056	
		800	22.78125	76.214556	
		800	22.77925	76.213972	
		800	22.77756	76.210972	
		800	22.77378	76.200222	
		800	22.77214	76.197	
		800	22.74361	76.183694	
		800	22.74178	76.1835	
		800	22.73983	76.183139	
		800	22.73847	76.18525	
		800	22.73875	76.192167	
		800	22.73669	76.188861	
		800	22.72961	76.196917	
		800	22.72908	76.201389	
		<p>Assessment team performed an offsite inspection of project and confirmed that the location described in the PCN are accurate.</p> <p>The Project is a wind power project, to utilize wind energy to generate zero carbon emission electricity which is mainly dominated by fossil fuel power output. The project includes integrated power transmission mechanism, high performance rotor blades, dual speed asynchronous generator, 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. Microprocessor controlled high efficiency soft start. Active Yaw gear drives incorporating hydraulic yaw brakes.</p>			
Findings		CL 01 was 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, MR, Commissioning Certificate and power purchase agreement.			

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. CDM website is referred to check the latest version of the methodology. For the applicability mentioned in the PCN and MR, technical Specification, and commissioning certificate.
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, UCR Program standard, and UCR Verification Standard.
Findings	No findings raised.
Conclusion	The verification team confirms that all the applicability criteria set by the applied CDM methodology and its eligible tools are met. The relevant information against those criteria is also included in the PCN and MR Ver.2. 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, "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 and MR 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 and MR. 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 the baseline scenario is as following: The baseline scenario is electricity delivered to the grid by the project
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	<p>activity that would have otherwise been generated by the operation of grid-connected power plants.</p> <p>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.</p>
Findings	No findings raised.
Conclusion	<p>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.</p> <p>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.</p>

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

Means of Project Verification	<p>The project verification team checked whether the equations and parameters used to calculate GHG emission reductions or net anthropogenic GHG removals for PCN and MR are in accordance with applied methodology. Project verification team checked section B.5 and C.5.1 of the PCN & MR respectively to confirm whether all formulae to calculate baseline emissions, project emission and leakage have been applied in line with the underlying methodology.</p> <p>The emission reduction calculation has been carried out as per the CDM methodology ACM0002, Version 21.0.</p> $BE_y = EGPJ_y \times EF_{Grid,y}$ <p>Where,</p> <p>BE_y = Baseline emissions in year y (t CO₂)</p> <p>$EGPJ_y$ = Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the CDM project activity in year y (MWh)</p> <p>$EF_{Grid,y}$ = Grid emission factor in year y (t CO₂/MWh)</p> <p>A "grid emission factor" refers to a CO₂ 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 tCO₂/MWh for the 2013-2023 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.²</p>
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² https://a23e347601d72166dcd6-16da518ed3035d35cf0439f1cdf449c9.ssl.cf2.rackcdn.com//Documents/UCRStandardAug2024updatedVer7_020824191534797526.pdf

Project emissions: As per paragraph 35 of the applied methodology, For most renewable energy project activities,
 $PE_y = 0$.
 Since wind 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.
 $LE_y=0$.

Emission reductions: As per Paragraph 62, equation 17 of the applied methodology, emission reductions are calculated as follows

$$ER_y = BE_y - PE_y$$

Where: ER_y = Emission reductions in year y (tCO₂)

BE_y = Baseline Emissions in year y (t CO₂)

PE_y = Project emissions in year y (t CO₂)

LE_y = Leakage emissions in year y (t CO₂)

$$ER_y = BE_y - PE_y$$

$$ER_y = (EG_{\text{facility, y}} * EF_{\text{grid, CM, y}}) - PE_y$$

$$ER_y = (98865.36 * 0.9) - 0$$

$$ER_y = 88,978 \text{ (tCO}_2\text{e/year)}$$

Therefore, $ER_y = BE_y$

The start date of the Project is from 31/03/2006 which is the earliest Commissioning date. For the ease of the calculation, duration of the crediting period is started from 01/01/2013 to 31/12/2029.

Year	Net estimated generation/export (EGy)	Baseline Emissions	Project Emissions	Leakage	Emission Reductions
	[MWh]	(tCO ₂ e)	(tCO ₂ e)	(tCO ₂ e)	(tCO ₂ e)
Year 1	98,865.36	88,978	0	0	88,978
Year 2	98,865.36	88,978	0	0	88,978
Year 3	98,865.36	88,978	0	0	88,978
Year 4	98,865.36	88,978	0	0	88,978
Year 5	98,865.36	88,978	0	0	88,978
Year 6	98,865.36	88,978	0	0	88,978
Year 7	98,865.36	88,978	0	0	88,978
Year 8	98,865.36	88,978	0	0	88,978
Year 9	98,865.36	88,978	0	0	88,978

Year 10	98,865.36	88,978	0	0	88,978
Year 11	98,865.36	88,978	0	0	88,978
Total Emission reduction	10,87,518.96	9,78,758	0	0	9,78,758
Annual Average ER	98,865.36	88,978	0	0	88,978

The actual emission reduction achieved during the first CoU's period (01/04/2015 to 31/12/2023) as per the Project Activity:

Year	Net Quantity of net electricity generation supplied by the project activity to the grid in year y	Emission Factor	Baseline Emissions	Project emissions or actual net GHG removals by sink	Leakage	Emission reductions or net anthropogenic GHG removals by sinks
	[MWh]	(tCO2e/MWh)	(tCO2e)	(tCO2e)	(tCO2e)	(tCO2e)
		[EFy]	[Bey]= [EGfacility, y]* [EFy]	[PEy]	[LEy]	[ERy]=[Bey]- [PEy]-[LEy]
Year 1	0	0.9	0	0	0	0
Year 2	0	0.9	0	0	0	0
Year 3	70139	0.9	63125	0	0	63125
Year 4	86132	0.9	77519	0	0	77519
Year 5	85479	0.9	76931	0	0	76931
Year 6	92061	0.9	82855	0	0	82855
Year 7	87388	0.9	78649	0	0	78649
Year 8	85399	0.9	76860	0	0	76860
Year 9	87730	0.9	78957	0	0	78957
Year 10	91175	0.9	82058	0	0	82058
Year 11	81168	0.9	73051	0	0	73051
Total	766672		690005			690005

Findings	CAR 01 was raised and closed successfully. More information presented appendix below.
Conclusion	In summary, the calculation of emission reductions was correctly demonstrated by the PP according to the methodology ACM0002: Grid-connected electricity generation from renewable

sources version 21.0

It is confirmed by the assessment team that:

(a) All assumptions made for estimating GHG are listed in the PCN; (b) All documentation used by the project participants as the basis for assumptions and source of data is correctly quoted and interpreted in the PCN (c) All values used in the PCN including GWPs are considered reasonable in the context of the proposed UCR project activity; (d) The methodologies and, where applicable, the standardized baselines and the other methodological regulatory documents have been applied correctly to calculate baseline, project and leakage GHG emissions, as well as GHG emission reductions; (e) All estimates of the baseline GHG emissions can be replicated using the data and parameter values provided in the PCN;

(.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 CO₂ 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 tCO₂/MWh for the 2013-2023 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, the following parameters will be monitored:

Parameter	Description
$EG_{P,J,y}$	Quantity of net electricity generation supplied by the projectplant/unit to the grid in year y

The values of the parameters monitored were checked against submitted Joint Meter Readings and invoices and were found correct.

Meters details of Madhya Pradesh site:

MP site	Old			New			Calibration Details
Location No	Main Meter	Check meter	Replacement Date	Main Meter	Check meter	Calibration Validity	Calibration Delay
39-41	XF452866	XF452867	28.06.2022	Q0594040	Q0594041	27.06.2027	01.01.2013 to 27.06.2022
42-44	XF452866	XF452867	28.06.2022	Q0594040	Q0594041	27.06.2027	01.01.2013 to 27.06.2022
90	XF101502	XF101498	05.03.2021	Q0380985	Q0380986	04.03.2026	01.01.2013 to 04.03.2021
63-65	XF186471	XF101520	30.03.2021	Q0380993	Q0380994	29.03.2026	01.01.2013 to 29.03.2021

54-56	XF101511	XF100845	23.03.2021	Q0380995	Q0380996	22.03.2026	01.01.2013 to 22-03-2021
53	XF19838	XF101519	23.03.2022	Q0380987	Q0380988	22.03.2027	01.01.2013 to 22.03.2022
45-46	XF101505	XF101504	23.03.2023	Q0426399	Q0426400	22.03.2028	01.01.2013 to 22.03.2023
91-94	XF137903	XE137904	09.03.2021	Q0380964	Q0380965	08.03.2026	01.01.2013 to 08.03.2021
9	XF101513	XF101501	09.03.2022	Q0380991	Q0380992	08.03.2027	01.01.2013 to 08.03.2022
10	XF101514	XF101519	09.03.2023	Q0380989	Q0380990	08.03.2028	01.01.2013 to 08.03.2023
14-19	XF186467	XF101473	09.07.2021	Q0381000	Q0380999	08.07.2026	01.01.2013 to 08.07.2021
N13	XF452862	XF423453	03.06.2022	Q0594036	Q0594037	02.06.2027	01.01.2013 to 02.06.2022
N16	XF452864	XF423454	03.06.2023	Q0594038	Q0594039	02.06.2028	01.01.2013 to 02.06.2023

Meters details of Rajasthan site:

Rajasthan site	As per JMR (Sub- station)		Calibration Details		
Location No	Main Meter	Check meter	Calibration Date	Calibration Delay	Considered Delay Period*
MK205	RJB81784 & RJB90206	RJB81785 & RJB90207	NA	NA	NA
MK204					
MK203					
MK202					
MK201					
AK29	RJB90208	RJB90209	NA	NA	NA
AK18					

J723	RJB90253	RJB90254	07-11-2020 30-01-2022 15-04-2023	01-01-2015 to 06-11-2020	01-01-2015 to 31-12-2019 01-01-2019 to 06-11-2020
J724					
J725					
J726					
J727					
RKBNL09	RJB90216	RJB90217	15-04-2023	01-01-2015 to 31-03-2023	01-01-2015 to 31-03-2023
RKB87					
RKB84					
RKB85					
KSOLTI-07 (77)	RJB00354	RJB00356	NA	NA	NA
KSOLTI-10 (64)					
KSOLTI-06 (76)					
KSOLTI-05 (74)					
KSOLTI-09 (65)					
KSOLTI-08 (66)					
KSOLTI-04 (71)					
KSOLTI-03 (69)					
KSOLTI-02 (14)					
KSOLTI-01 (13)					

There is calibration delay for the monitoring period mentioned above. The error factor has been applied in net export values for delay period as meters were not calibrated as per the calibration frequency which is once in five years. As per the Appendix calibration of the VVS Standard v3.0,³ Para 366(a) error factor of "±0.2%" should be applicable for both export & import i.e. the measured values. However, net electricity generation is considered as per the registered monitoring plan, the separate export and import values are not available. Hence being conservative and to account for the error for both export & import, a cumulative error of "-0.4%" on net electricity generation has been applied for delay period.

³ https://cdm.unfccc.int/sunsetcms/storage/contents/stored-file-20210921115831128/reg_stan06_v03.0.pdf

	<p>Management system and quality assurance</p> <p>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.</p> <p>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.</p> <p>The monitoring plan outlines in the PCN includes:</p> <ul style="list-style-type: none"> - Monitoring Organization - Monitoring apparatus and installation - Calibration - Data collection - Data Management system <p>The submitted calibration certificates were checked and it was confirmed that the calibrations are conducted periodically as specified in the PCN i.e. at least once in 5 years. Error factor has been taken into account for the delayed calibration during the current monitoring period.</p>
Findings	CL 02, CL 03, CAR 04, CAR 05, CAR 06 and CAR 07 were raised and closed successfully. More information presented in the appendix below.
Conclusion	<p>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. 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.</p> <p>The monitoring parameter reported in MR 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, emission reduction calculations are correctly calculated and reported. The monitoring report meets the requirements of UCR project verification requirements.</p>

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, PCN, MR and other documents provided.
Findings	CAR 02 and CAR 03 were raised and closed successfully. More information presented in the appendix below.
Conclusion	The project has chosen crediting period start date as 01/01/2013. The crediting period is chosen as 01/01/2013 to 31/12/2029 and the crediting period for the current monitoring period is 01/04/2015 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, communication agreement, MR, commissioning certificate, power purchase agreement.
Findings	No findings raised
Conclusion	The project owner was identified through a communication agreement signed between project owner and project aggregator. Commissioning certificates and Power Purchase Agreement 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: Orchid Renewable Powertech Private 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 4, 7, 8 & 13. SDG 4 is quality education and is verified on the basis of supporting documents. SDG 7 is affordable and clean energy and it is verified during remote audit as the project is wind 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 4, 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 against the UCR program verification standard version 2.0 and UCR project eligibility criteria version 7.0 and the UCR-PCN-FORM Version 1.0.

It is confirmed that the project activity is a 59.4 MW greenfield wind power plant, that is spread across different villages in the state of Rajasthan & Madhya Pradesh, India. The geo co-ordinates of the 59.4 MW plant (10.5 MW + 1.25 MW + 1.25 MW + 7.5 MW + 6 MW + 6.4 MW + 1.6 MW + 2.5 MW + 22.4 MW) have been mentioned in sections above. 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.

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 690,005 tCO₂eq during the monitoring period i.e. from 01/04/2015 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.

Appendix 1. Abbreviations

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
CH ₄	Methane
N ₂ O	Nitrous Oxide

Appendix 2. 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, qualified 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).

- ❖ Mr. Vipul Jain 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.
- ❖ Ms. Swati Mahajan is graduate in Environmental Engineering from Shivaji University, India and previously worked as an Environment Engineer at Eco Designs India Pvt. Ltd., Pune. She is adept in designing of landfill sites for solid waste management. She also has hands on experience in cost benefit analysis and preparation of DPRs for SWM projects. Currently working as GHG assessor for projects under various GHG mechanisms like GCC, ICR, UCR and VERRA.
- ❖ 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 Section 1.2, 3.1, 14.1.

Appendix 3. Document reviewed or referenced

No.	Author	Title	References to the document	Provider
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 complete monitoring period		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	https://a23e347601d72166dcd6-16da518ed3035d35cf0439f1cdf449c9.ssl.cf2.rackcdn.com//Documents/UCRStandardAug2024updatedVer7_020824191534797526.pdf	General project eligibility criteria and guidance UCR standard version 7.0
12	UCR	UCR Program manual version 6.1 UCR COU standard version 7 UCR Verification standard version 2 UCR terms and conditions		Universal Carbon Registry
3	CDM	CDM approved methodology- ACM0002: Grid Connected electricity generation from renewable sources version 21.0		UNFCCC

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

Table 1. CLs from this Project Verification

Classification	<input type="checkbox"/> CAR	<input checked="" type="checkbox"/> CL/CR	<input type="checkbox"/> FAR	Number:	01
Raised by:	Mr. Pankaj Kumar			Document Reference	MR
Finding Description				Date:	17/09/2024
PP shall submit the legal ownership document of the project activity as PP has acquired the running project.					
Client/Responsible Party/Project Proponent Response				Date:	25-09-2024
PP has already shared Declaration of Ownership as PP has acquired the running project					
Validation/Verification Team Assessment				Date:	30/09/2024
PP has submitted the declaration of ownership of the existing project activity and the same has been verified. Hence, this part of CL is closed.					

Classification	<input type="checkbox"/> CAR <input checked="" type="checkbox"/> CL/CR <input type="checkbox"/> FAR	Number:	02
Raised by:	Mr. Pankaj Kumar	Document Reference	MR
Finding Description		Date:	17/09/2024
PP shall submit the meter photographs of Rajasthan site. Submitted photographs are inconsistent with the calibration report.			
Client/Responsible Party/Project Proponent Response		Date:	25-09-2024
PP has submitted the meter photographs and Calibration Certificates for Rajasthan site.			
Validation/Verification Team Assessment		Date:	30/09/2024
PP has submitted the meter photographs and the calibration certificate of only one location. Calibration certificates of remaining sites are to be submitted. Hence, this part of CL is open.			
Client/Responsible Party/Project Proponent Response		Date:	03/10/2024
PP has submitted the relevant meter photographs and a declaration stating the information and details provided are true and correct to the best of Companies knowledge and belief.			
Validation/Verification Team Assessment		Date:	03/10/2024
PP has submitted the meter photographs and the calibration certificate of only one location. Calibration certificates of remaining sites are unavailable so PP has submitted the declaration stating the information is true. Assessment team considers the declaration to be true to the companies' knowledge. Hence, this part of CL is closed.			

Classification	<input type="checkbox"/> CAR <input checked="" type="checkbox"/> CL/CR <input type="checkbox"/> FAR	Number:	03
Raised by:	Mr. Pankaj Kumar	Document Reference	MR
Finding Description		Date:	17/09/2024
PP shall submit the supporting documents of the salient features of wind turbines.			
Client/Responsible Party/Project Proponent Response		Date:	25-09-2024
PP has submitted the supporting documents of the salient features of wind turbines.			
Validation/Verification Team Assessment		Date:	30/09/2024
PP has submitted the supporting documents of the salient features of wind turbines and the same has been assessed by the verification team. Hence, this part of CL is closed.			

Table 2. CARs from this Project Verification

Classification	<input checked="" type="checkbox"/> CAR <input type="checkbox"/> CL/CR <input type="checkbox"/> FAR	Number:	01
Raised by:	Mr. Pankaj Kumar	Document Reference	MR
Finding Description		Date:	17/09/2024

Few JMR are inconsistent with the provided supporting documents. Correction sought.		
Client/Responsible Party/Project Proponent Response	Date:	25-09-2024
PP has corrected the value.		
Validation/Verification Team Assessment	Date:	30/09/2024
As suggested PP has corrected the excel sheet and on assessment it is concluded that the values are consistent with the JMR readings. Hence, this part of CAR is closed.		

Classification	<input checked="" type="checkbox"/> CAR <input type="checkbox"/> CL/CR <input type="checkbox"/> FAR	Number:	02
Raised by:	Mr. Pankaj Kumar	Document Reference	MR
Finding Description		Date:	17/09/2024
Date of monitoring period is inconsistent throughout the MR. Correction sought.			
Client/Responsible Party/Project Proponent Response	Date:	25-09-2024	
PP has changed the Monitoring period as 01/04/2015 to 31/12/2023 As PP is not claiming CoUs from 2013 to 2014.			
Validation/Verification Team Assessment	Date:	30/09/2024	
As suggested PP has corrected and changed the monitoring period of the project activity and found consistent in MR and PCN version 2. Hence, this part of CAR is closed.			

Classification	<input checked="" type="checkbox"/> CAR <input type="checkbox"/> CL/CR <input type="checkbox"/> FAR	Number:	03
Raised by:	Mr. Pankaj Kumar	Document Reference	MR
Finding Description		Date:	17/09/2024
Earliest commissioning date is inconsistent in the MR. Correction sought.			
Client/Responsible Party/Project Proponent Response	Date:	25-09-2024	
PP has added the row for N13 & N16 Loc which is sum up 59.4 MW and Corrected the earliest commissioning date accordingly.			
Validation/Verification Team Assessment	Date:	30/09/2024	
PP has corrected the earliest commissioning date and the same has been verified in PCN & MR version 2. Hence, this part of CAR is closed.			

Classification	<input checked="" type="checkbox"/> CAR <input type="checkbox"/> CL/CR <input type="checkbox"/> FAR	Number:	04
Raised by:	Mr. Pankaj Kumar	Document Reference	MR
Finding Description		Date:	17/09/2024
Few commissioning dates and capacity are inconsistent with the provided commissioning certificate. Correction sought.			

Client/Responsible Party/Project Proponent Response	Date:	25-09-2024
PP has corrected the dates & capacity as mentioned in Commissioning Certificate.		
Validation/Verification Team Assessment	Date:	30/09/2024
PP has corrected the commissioning dates and the capacity and the same has been verified in PCN & MR version 2. Hence, this part of CAR is closed.		

Classification	<input checked="" type="checkbox"/> CAR <input type="checkbox"/> CL/CR <input type="checkbox"/> FAR	Number:	05
Raised by:	Mr. Pankaj Kumar	Document Reference	MR
Finding Description		Date:	17/09/2024
Net generated electricity is sold to Rajasthan and Madhya Pradesh electricity board. The name of the electricity board mentioned in the MR is inconsistent with the provided PPA. Correction sought.			
Client/Responsible Party/Project Proponent Response	Date:	25-09-2024	
PP has corrected the DISCOM as mentioned in the PPA.			
Validation/Verification Team Assessment	Date:	30/09/2024	
PP has made the corrections in the name of the electricity board and the same has been verified in PCN & MR version 2. Hence, this part of CAR is closed.			

Classification	<input checked="" type="checkbox"/> CAR <input type="checkbox"/> CL/CR <input type="checkbox"/> FAR	Number:	06
Raised by:	Mr. Pankaj Kumar	Document Reference	MR
Finding Description		Date:	17/09/2024
PP shall add the geo coordinates of all the locations in MR.			
Client/Responsible Party/Project Proponent Response	Date:	25-09-2024	
PP has added the Geo-coordinates of all the location in MR.			
Validation/Verification Team Assessment	Date:	30/09/2024	
PP has added the geo coordinates of all the location in MR and the same has been verified in MR version 2. Hence, this part of CAR is closed.			

Classification	<input checked="" type="checkbox"/> CAR <input type="checkbox"/> CL/CR <input type="checkbox"/> FAR	Number:	07
Raised by:	Mr. Pankaj Kumar	Document Reference	MR
Finding Description		Date:	30/09/2024
Number of years of first crediting period of CoU's is inconsistent in MR & PCN. Correction Sought.			
Client/Responsible Party/Project Proponent Response	Date:	30/09/2024	

PP has corrected the First Issuance period of CoUs as 08 years 09 Months in both PCN & MR.		
Validation/Verification Team Assessment	Date:	03/10/2024
PP has corrected the First Issuance Period of CoU's and on verification is found consistent in PCN & MR version 2. 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