Project Verification Report

2024

COVER PAGE Project Verification Report Form (VR)	
BASIC INFORMATION	
Name of approved UCR Project Verifier / Reference No.	Mr. Pankaj Kumar
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)
Completion date of this VR	20/03/2024
Title of the project activity	8.6 MW Windmill Power Project of Bellary Iron Ores Private Limited by Energy Advisory Services.
Project reference no. (as provided by UCR Program)	300
Name of Entity requesting verification service (can be Project Owners themselves or any Entity having authorization of Project Owners, example aggregator.)	UCR ID – 300 Energy Advisory Services Private Limited Name: Ramyabharathi Email ID – ramyabharathi@easpl.co.in
Contact details of the representative of the Entity, requesting verification service (Focal Point assigned for all communications)	UCR ID – 300 Energy Advisory Services Private Limited Name: Ramyabharathi Email ID – ramyabharathi@easpl.co.in
Country where project is located	India
Applied methodologies (approved methodologies by UCR Standard used)	Applied Baseline Methodology: AMS-I.D.: "Grid connected renewable electricity

	generation", version 18.0 & UCR Standard for Emission Factor Standardized Methodology: Not Applicable
GHG Sectoral scopes linked to the applied methodologies	01 Energy industries (Renewable/Non-Renewable Sources)
Project Verification Criteria: Mandatory requirements to be assessed	☒ UCR Standard ☒ Applicable Approved Methodology ☒ Applicable Legal requirements /rules of host country ☒ Eligibility of the Project Type ☒ Start date of the Project activity ☒ Meet applicability conditions in the applied methodology ☒ Credible Baseline ☒ Do No Harm Test ☒ Emission Reduction calculations ☒ Monitoring Report ☒ No GHG Double Counting ☐ Others (please mention below)
Project Verification Criteria: Optional requirements to be assessed	☒ Environmental Safeguards Standard and do-no-harm criteria ☒ Social Safeguards Standard do-no-harm criteria
Project Verifier's Confirmation: The *UCR Project Verifier* has verified the UCR project activity and therefore confirms the following:	The UCR Project Verifier [*Mr. Pankaj Kumar*], certifies the following with respect to the UCR Project Activity [*8.6 MW*

	Windmill Power Project of Bellary Iron Ores Private Limited by Energy Advisory Services.]. ☒ The Project Owner has correctly described the Project Activity in the Project Concept Note (dated *28/11/2023*) including the applicability of the approved methodology [*AMS-1. D – Grid Connected Renewable Electricity Generation V.18.0*] 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. ☒ The Project Activity is likely to generate GHG emission reductions amounting to the estimated [*53,949*] TCO_{2e}/Year, as indicated in the PCN, 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 rules[1]

1

	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: 300 Date of approval: 22/03/2024
Name of the authorised personnel of UCR Project Verifier and his/her signature with date	Mr. Pankaj Kumar

PROJECT VERIFICATION REPORT

Executive summary

>> The proposed project activity titled “8.6 MW Windmill Power Project By Bellary Iron Ores Private Limited” is a Wind based Power Project successfully commissioned by Karnataka Power Transmission Corporation Limited (KPTCL) in Chitradurga and Davangere district in Karnataka state in four villages at 6 different locations and operational since 31/03/2005 which is the earliest commissioning date. The Project is owned by “M/S Bellary Iron Ores Private Limited (BIOP)”.

The project activity has been essentially conceived to generate clean energy by utilizing the wind energy. It causes total minimum environmental impacts and in turn will lead to actual emission reduction of 110,869 tCO_2 over the entire monitoring period.

Total cumulative installed capacity of the project would be 8.6 MW with a total gross energy generation of 123,207 MWh during the entire monitoring period. The Small-Scale wind power projects developed by M/S Bellary Iron Ores Private Limited (BIOP), will deliver electricity to the buyer, through National transmission network.

The details of the wind turbines installed at 6 different locations is given in the table below:

Project	Project Proponent	Capacity	Location	Net Generation	Emission Reduction roundown	Commissioned Date
2.3 MW Wind Project in Basavpatna, Davangere - Phase I	M/S Bellary Iron Ores Private Limited	2.3 MW (3 x 600 KW) + (1 x 500 KW)	Davangere district, Karnataka, India	28192.71 MWh	25373 tCO2e/yr	3 x 600 KW = 31/03/2006 1 x 500 KW = 31/03/2005
1.2 MW Wind Project in Basavpatna, Davangere - Phase II	M/S Bellary Iron Ores Private Limited	1.2 MW (2 x 600 KW)	Davangere district, Karnataka, India	14287.27 MWh	12858 tCO2e/yr	31/03/2006
1.2 MW Wind Project in Basavpatna, Davangere - Phase III	M/S Bellary Iron Ores Private Limited	1.2 MW (2 x 600 KW)	Davangere district, Karnataka, India	14241.75 MWh	12817 tCO2e/yr	31/03/2006
2.0 MW Wind Project in Bettadanaganahalli, Chitradurga	M/S Bellary Iron Ores Private Limited	2.0 MW (4 x 500 KW)	Chitradurga district, Karnataka, India	39416.91 MWh	35475 tCO2e/yr	31/03/2005
0.95 MW Wind Project in Gonur, Chitradurga	M/S Bellary Iron Ores Private Limited	0.95 MW (1 x 950 KW)	Chitradurga district, Karnataka, India	14171.02 MWh	12753 tCO2e/yr	09/06/2005
0.95 MW Wind Project in Chikkapanahalli, Chitradurga	M/S Bellary Iron Ores Private Limited	0.95 MW (1 x 950 KW)	Chitradurga district, Karnataka, India	12897.68 MWh	11607 tCO2e/yr	31/03/2005

Proposed wind power project has evolved as a result of the policies of Government of India and Government of Karnataka, which encourages energy development form 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 electricity produced by the project is directly contributing to climate change mitigation by reducing the anthropogenic emissions of greenhouse gases into the atmosphere by displacing an equivalent amount of power at grid.

Since the project activity will generate electricity through wind energy, a clean renewable energy source, it will not cause any negative impact on the environment and thereby contributes to climate change mitigation efforts.

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

An on-site visit was conducted as per UCR guidelines. The verifier conducted remote audit and remote interviews were conducted with the project owners and stakeholders.

No.	Interview			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Vyas	Manoj	Energy Advisory Services Pvt. Ltd.	20/11/2023 to 22/11/2023	Project Implementation, Monitoring plan, Project Boundary, Eligibility criteria, Host country	Pankaj Kumar

No.	Interview			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Vyas	Manoj	Energy Advisory Services Pvt. Ltd.		requirements, Emission reduction calculations	
2.	D	Ramyabharathi	Energy Advisory Services Pvt. Ltd.		Local stakeholder consultation	
3.	Mulla	Rafiq	Local Stakeholder			
4.	Hiremath	Sangappa	Local Stakeholder			
5.	Matpathy	Irayya	Local Stakeholder			
6.	Mujawar	Hussain	Local Stakeholder			

Conclusion

Based on the work performed, the verifier concludes that in the project titled “8.6 MW Windmill Power Project By Bellary Iron Ores Private Limited” the information and data presented in the MR version 1.0 is in line with the Project Concept Note Version 2.0 and meets all relevant requirements of the UCR for UCR project activities. The UCR project activity correctly applies the methodology “AMS.I.D. – Grid connected renewable electricity generation” Version 18.0, 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	01/01/2013
End date of monitoring period	31/03/2022
Emission reductions achieved	110,869 tCO_2e

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	Kumar	Pankaj	Self	Yes	Yes	Yes

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	Kumar	Pankaj	Self

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 offsite inspection:
20/11/2023 to 22/11/2023

No.	Activity performed Off-Site	Site location	Date
1.	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 requirements of the UCR; 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	Basavapatna phase I, II & III in Davangere District, Karnataka, & Bettadanaganahalli, Gonur & Chikkapanahalli in Chitradurga District, Karnataka	20/11/2023 to 22/11/2023

	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.	Interview			Date	Subject
	Last name	First name	Affiliation		
1.	Vyas	Manoj	Energy Advisory Services Pvt. Ltd.	20/11/2023 to 22/11/2023	Project Implementation, Monitoring plan, Project Boundary, Eligibility criteria, Host country requirements, , Emission reduction calculations
2.	D	Ramyabharathi	Energy Advisory Services Pvt. Ltd.		
3.	Mulla	Rafiq	Local Stakeholder		Project implementation, monitoring, Local stakeholder consultation
4.	Hiremath	Sangappa	Local Stakeholder		
5.	Matpathy	Irayya	Local Stakeholder		
6.	Mujawar	Hussain	Local Stakeholder		

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	-	-	-
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	-	-	-
- Monitoring Report	-	-	-
Start date, crediting period and duration	-	-	-
Environmental impacts	-	-	-
Project Owner- Identification and communication	-	-	-
Others (please specify)	-	-	-
Total	-	-	-

Project Verification findings

Identification and eligibility of project type

Means of Project Verification	The project has an 8.6 MW total installed capacity and hence qualifies as a small scale project. This is confirmed based on the commissioning certificates and technical specifications. Since the project is a small-scale project it has applied approved CDM small scale methodology AMS I.D, version 18.0 – Grid connected renewable energy generation. 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 owner 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. 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 8.6 MW of small-scale wind power project and its commissioning date was verified through the commissioning certificate of the project. The power evacuation at the substation is confirmed by the power purchase agreement. 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. By checking the supporting documents, it is confirmed that the project is a newly built wind power project, located in India in the state of Karnataka, at Davangere (Basavapatna Phase I 2.3 MW, Phase II 1.2 MW & Phase III 1.2 MW), Chitradurga (Bettadanaganahalli 2.0 MW, Gonur 0.95 MW & Chikkapanahalli 0.95 MW). The approximate coordinates of the project locations are

Site Name	Loc Name	Latitude	Longitude
Bettadanagenahalli	Loc 04	14°10'11,53" N	76°16'23,40" E
Bettadanagenahalli	Loc 05	14°10'15,56" N	76°16'20,20" E
Bettadanagenahalli	Loc 06	14°10'19,08" N	76°16'16,95" E
Bettadanagenahalli	Loc 07	14°10'21,13" N	76°16'15,52" E
Chikkapanahalli	BIOP 1	14°19'8.72" N	76°22'38.04" E
Gonur	BIOP 2	14°16'31.86" N	76°25'46.24" E
Kundur (Basavapatna)	Loc 01	14°15'56,52" N	75°46'07,89" E
Kundur	Loc 02	14°15'50,07" N	75°46'11,07" E
Kundur	Loc 03	14°15'43,92" N	75°46'11,95" E
Kundur	Loc 04	14°15'38,42" N	75°46'13,39" E
Kundur	Loc 09	14°15'15,68" N	75°46'27,59" E
Kundur	Loc 10	14°15'09,89" N	75°46'30,11" E
Kundur	Loc 26	14°13'52,20" N	75°47'18,33" E
Kundur	Loc 28	14°15'45,60" N	75°47'11,63" E

Assessment team performed a remote inspection of project and confirmed that the location described in the PCN is accurate.

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.
Findings	No findings raised
Conclusion	The description of the project activity is verified to be true based on the review of PCN, MR, Commissioning Certificate, Purchase Order Copies and power purchase agreements.

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 A.M.S I.D. CDM website is referred to check the latest version of the methodology. For the applicability mentioned in the PCN and MR, turbine 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 A.M.S I. D "Grid connected renewable electricity generation" version 18, UCR Program standard, and UCR Verification Standard
Findings	No findings raised
Conclusion	The emission factor considered for the calculation of the emission reductions is verified with the UCR Program Standard. The total installed electrical energy generation capacity of the project equipment does not exceed 15 MW thus meeting the requirement of small-scale projects. It was confirmed that application of methodology and tools is correctly described in the MR submitted

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

Means of Project Verification	Project owner has considered project boundary As per applicable methodology AMS-I.D. Version 18, "The spatial extent of the project boundary includes the project power plant and all power plants connected physically to the electricity system that the 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 AMS.I.D. - Grid connected renewable electricity generation Version 18.0 the baseline scenario is as following: The baseline scenario is that the electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources into the grid. 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	No findings raised
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. Relevant national and/or sectoral policies and circumstances are considered and listed in the PCN.

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

Means of Project Verification	The verification team has assessed the calculations of baseline emissions and emission reductions. Corresponding calculations have been carried out based on calculation spread sheet. The parameters and equations presented in the PCN, as well as other applicable documents, have been compared with the information and requirements presented in the methodology and respective tools. An equation comparison has been made to ensure consistency between all the formulae presented in the calculation files and in the PCN, methodology, and tools. The assumptions and data used to determine the emission reductions are listed in the PCN and all the sources have been checked. Based on the information reviewed it is confirmed that the sources used are correctly quoted and interpreted in the PCN. The values presented in the PCN are considered reasonable based on the documentation and references reviewed and the results of the interviews. The baseline methodology has been applied correctly according to requirements. The estimate of the baseline emissions are considered correct as the calculations have been reproduced by the verification team with the attainment of the same results. The algorithms for the determination of the baseline, project, and leakage are discussed in the following sections. A "grid emission factor" refers to a CO_2 emission factor (tCO_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 tCO_2/MWh for the 2014-2020 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. **Net GHG Emission Reductions and Removals** $ER_y = BE_y – PE_y – LE_y$ Where: ER_y = Emission reductions in year y (tCO_2/y) BE_y = Baseline Emissions in year y ($t CO_2/y$) PE_y = Project emissions in year y (tCO_2/y) LE_y = Leakage emissions in year y (tCO_2/y)

Baseline Emissions

Baseline emissions include only CO_2 emissions from electricity generation in power plants that are displaced due to the project activity. The methodology assumes that all project electricity generation above baseline levels would have been generated by existing grid-connected power plants and the addition of new grid-connected power plants.

The baseline emissions are to be calculated as follows:

$BE_y = EG_{PJ,y} \times EF_{grid,y}$

Where:

BE_y = Baseline emissions in year y (t CO2)
$EG_{PJ,y}$ = Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of this project activity in year y (MWh)
$EF_{grid,y}$ = UCR recommended emission factor of 0.9 tCO_2/MWh has been considered, this is conservative as compared to the combined margin grid emission factor which can be derived from Database of Central Electricity Authority (CEA), India. (Reference: General Project Eligibility Criteria and Guidance, UCR Standard, page 4)

Project Emissions

As per paragraph 39 of AMS-I.D. (Version 18.0, dated 28/11/2014), , only emission associated with the fossil fuel combustion, emission from operation of geo-thermal power plants due to release of non-condensable gases, emission from water reservoir of Hydro should be accounted for the project emission. Since the project activity is a wind power project, project emission for renewable energy plant is nil.

Hence, $PE_y = 0$

Leakage

As per paragraph 42 of AMS-I.D. version-18, 'If the energy generating equipment is transferred from another activity (biomass), leakage is to be considered.' In the project activity, there is no transfer of energy generating equipment and therefore the leakage from the project activity is considered zero

Hence, $LE_y = 0$

The actual emission reduction achieved during the first CoU period shall be submitted as a part of first monitoring and verification. However, for the purpose of an ex-ante estimation, following calculation has been submitted:

2.3 MW Wind Power Project in Basavpatna, Davangere, Phase – I

Estimated annual baseline emission reductions (BE_y)
= 28192.71 MWh/year × 0.9 tCO_2/MWh
= 25373.44 tCO_2/year (i.e., 25373.44 CoUs/year)
= 25373 tCO_2/year (i.e., 25373 CoUs/year)

1.2 MW Wind Power Project in Basavpatna, Davangere, Phase - II

Estimated annual baseline emission reductions (BE_y)
= 14287.27 MWh/year x 0.9 tCO_2/MWh

= 12858.54 tCO_2/year (i.e., 12858.54 CoUs/year)
= 12858 tCO_2/year (i.e., 12858 CoUs/year)

1.2 MW Wind Power Project in Basavpatna, Davangere, Phase - III

Estimated annual baseline emission reductions (BE_y)
= 14241.75 MWh/year × 0.9 tCO2/MWh
= 12817.58 tCO2/year (i.e., 12817.58 CoUs/year)
= 12817 tCO2/year (i.e., 12817 CoUs/year)

2.0 MW Wind Power Project in Bettadanaganahalli, Chitradurga

Estimated annual baseline emission reductions (BE_y)
= 39416.91 MWh/year × 0.9 tCO2/MWh
= 35475.22 tCO2/year (i.e.,35475.22 CoUs/year)
= 35475 tCO2/year (i.e.,35475 CoUs/year)

0.95 MW Wind Power Project in Gonur, Chitradurga

Estimated annual baseline emission reductions (BE_y)
= 14171.02 MWh/year × 0.9 tCO2/MWh
= 12753.92 tCO2/year (i.e.,12753.92 CoUs/year)
= 12753 tCO2/year (i.e.,12753 CoUs/year)

0.95 MW Wind Power Project in Chikkapanahalli, Chitradurga

Estimated annual baseline emission reductions (BE_y)
= 12897.68 MWh/year × 0.9 tCO2/MWh
= 11607.92 tCO2/year (i.e.,11607.92 CoUs/year)
= 11607 tCO2/year (i.e.,11607 CoUs/year)

Project	Net Generation (MWh/year)	Emission Factor (tCO2/MWh)	Emission Reduction (tCO2/year) rounddown
2.3 MW Wind Power Project in Basavpatna, Davangere, Phase - I	28192.71	0.9	25373
1.2 MW Wind Power Project in Basavpatna, Davangere, Phase - II	14287.27	0.9	12858
1.2 MW Wind Power Project in Basavpatna, Davangere, Phase - III	14241.75	0.9	12817
2.0 MW Wind Power Project in Bettadanaganahalli, Chitradurga	39416.91	0.9	35475
0.95 MW Wind Power Project in Gonur, Chitradurga	14171.02	0.9	12753
0.95 MW Wind Power Project in Chikkapanahalli, Chitradurga	12897.68	0.9	11607
Total	**123207.34 Rounded to 123207**		

Yearly emission reductions calculation for the monitoring period is given in the table below.

S.NO	Monitoring Period	Net Energy Export (KWh)	Emission Factor (tCO2e/MWh)	Emission reductions (tCO2e) rounddown
1	01-01-2013 to 31-12-2013	15577581.00	0.9	14019
2	01-01-2014 to 31-12-2014	13680040.00	0.9	12312
3	01-01-2015 to 31-12-2015	12649130.75	0.9	11384
4	01-01-2016 to 31-12-2016	14338572.25	0.9	12904
5	01-01-2017 to 31-12-2017	14552160.65	0.9	13096
6	01-01-2018 to 31-12-2018	13167430.75	0.9	11850
7	01-01-2019 to 31-12-2019	14376298.50	0.9	12938
8	01-01-2020 to 31-12-2020	12049080.25	0.9	10844
9	01-01-2021 to 31-12-2021	11188655.05	0.9	10069
10	01-01-2022 to 31-03-2022	1615167.35	0.9	1453
			Total	**110869**

Findings	No findings raised
Conclusion	In summary, the calculation of emission reductions was correctly demonstrated by the PP according to the methodology AMS.I.D. - Grid connected renewable electricity generation Version 18.0 and its tool "Tool to calculate the emission factor for an electricity system" Version 07.0. It is confirmed by 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 thePCN; (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; (f) The sampling efforts were undertaken in accordance with the “Standard: Sampling and surveys for UCR project activities and programme of activities”, where the applied methodologies require that the data and parameters be determined in accordance with this standard.

(.a.vi) Monitoring Report

<table>
<tr>
<td>Means of Project Verification</td>
<td>
Parameters determined ex-ante

The following parameters are determined ex-ante and verified by the verification team:

The baseline emission factor of the project is reported to be determined ex-ante and would remain fixed for the crediting period, which is calculated as a combined margin (CM), consisting of the combination of OM and BM emission coefficient. 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 AMS.I.D. - Grid connected renewable electricity generation Version 18.0, the following parameters will be monitored:
<table>
<tr><th>Parameter</th><th>Description</th></tr>
<tr><td>EGPJ,facility,y</td><td>Quantity of net electricity generation supplied by the projectplant/unit to the grid in year y</td></tr>
<tr><td>EGPJ,output,y</td><td>Electricity supplied by the proposed CDM project to the grid in year y</td></tr>
<tr><td>EGPJ,input,y</td><td>The electricity used by the proposed CDM project and input from the grid in year y</td></tr>
</table>

The values of the parameters monitored were checked against submittedJoint Meter Readings 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 electricity exported and imported by the project will be continuously measured by the meters and it would be monthly reported.
</td>
</tr>
</table>

	Calibrations of the meters will be carried out by a qualified third party periodically. Cross-check measurements include the comparison with the record document confirmed by EDL. The submitted calibration certificates were checked and it was confirmedthat the calibrations are conducted periodically as specified in the PCN 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	No findings raised
Conclusion	The verification team is convinced of compliance of the monitoring plan with the requirements of the monitoring methodology AMS.I.D. - Grid connected renewable electricity generation Version 18.0. During the on-site 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 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 emission factor for electricity is as per UCR standards. In the monitoring report, 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, purchase orders for the turbines, PCN , MR and detailed project report.
Findings	No findings raised
Conclusion	The project has chosen crediting period start date as 01/01/2013. The crediting period is chosen as 01/01/2013 to 31/03/2022.

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	The project activity involves 6 different locations owned and operated by the same owner.

Project	Project Proponent	Capacity	Location
2.3 MW Wind Project in Basavpatna, Davangere - Phase I	M/S Bellary Iron Ores Private Limited	2.3 MW (3 x 600 KW) + (1 x 500 KW)	Davangere district, Karnataka, India
1.2 MW Wind Project in Basavpatna, Davangere - Phase II	M/S Bellary Iron Ores Private Limited	1.2 MW (2 x 600 KW)	Davangere district, Karnataka, India
1.2 MW Wind Project in Basavpatna, Davangere	M/S Bellary Iron Ores	1.2 MW (2 x 600	Davangere district,

	- Phase III	Private Limited	KW)	Karnataka, India
	2.0 MW Wind Project in Bettadanaganahalli, Chitradurga	M/S Bellary Iron Ores Private Limited	2.0 MW (4 x 500 KW)	Chitradurga district, Karnataka, India
	0.95 MW Wind Project in Gonur, Chitradurga	M/S Bellary Iron Ores Private Limited	0.95 MW (1 x 950 KW)	Chitradurga district, Karnataka, India
	0.95 MW Wind Project in Chikkapanahalli, Chitradurga	M/S Bellary Iron Ores Private Limited	0.95 MW (1 x 950 KW)	Chitradurga district, Karnataka, India

Energy Advisory Services Pvt. Ltd. is acting as an aggregator for these projects. The submitted commissioning certificates, agreements, joint meter readings confirm the ownership of the projects by the project owner.

Findings	No findings raised
Conclusion	The project owner was identified through a communication agreement signed between project owner and project aggregator. Equipment purchase orders and commissioning certificates were verified. Also, a legal document like Power Purchase Agreement/ Wheeling Agreement clearly establishes the project ownership. The identification and communication correctly meet the requirement of project verification and UCR project standard.

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 & clean energy, SDG 8 is decent work & economic growth and SDG 13 is climate action. These claims were checked on the basis of JMR & invoice, employment of the local people on the project site and emission reduction calculations respectively.
Findings	No findings raised
Conclusion	All the requirements for claiming the SDG goals were checked thoroughly through the JMR & invoice provided by the pp. Site inspection was done to confirm the employment of the local people and emission reduction sheet was thoroughly checked to claim the SDG 8.

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 6.0 and the UCR-PCN-FORM Version 1.0.

It is confirmed that the project is a newly built wind power project, located in India in the state of Karnataka, at Davangere (Basavapatna Phase I 2.3 MW, Phase II 1.2 MW & Phase III 1.2 MW), Chitradurga (Bettadanaganahalli 2.0 MW, Gonur 0.95 MW & Chikkapanahalli 0.95 MW). The approximate coordinates of the project locations are

Site Name	Loc Name	Latitude	Longitude
Bettadanagenahalli	Loc 04	14°10'11,53" N	76°16'23,40" E
Bettadanagenahalli	Loc 05	14°10'15,56" N	76°16'20,20" E
Bettadanagenahalli	Loc 06	14°10'19,08" N	76°16'16,95" E
Bettadanagenahalli	Loc 07	14°10'21,13" N	76°16'15,52" E
Chikkapanahalli	BIOP 1	14°19'8.72" N	76°22'38.04" E
Gonur	BIOP 2	14°16'31.86" N	76°25'46.24" E
Kundur (Basavapatna)	Loc 01	14°15'56,52" N	75°46'07,89" E
Kundur	Loc 02	14°15'50,07" N	75°46'11,07" E
Kundur	Loc 03	14°15'43,92" N	75°46'11,95" E
Kundur	Loc 04	14°15'38,42" N	75°46'13,39" E
Kundur	Loc 09	14°15'15,68" N	75°46'27,59" E
Kundur	Loc 10	14°15'09,89" N	75°46'30,11" E
Kundur	Loc 26	14°13'52,20" N	75°47'18,33" E
Kundur	Loc 28	14°15'45,60" N	75°47'11,63" E

Assessment team performed a remote 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 AMS-I.D. - Grid connected renewable electricity generation, Version 18.0.

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 that the project participants are able to implement the monitoring plan. Given that the project is implemented and

maintained as designed, the project is likely to achieve the estimated emission reductions of 110,869 tCO2eq during the nine years, three months of its first renewable crediting period.

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

Abbreviations	Full texts
ACM	Approved Consolidated Methodologies
UCR	Universal Carbon Registry
PCN	Project Concept Note
MR	Monitoring Report
t	Tonne
ISO	International Organization for Standardization
DNA	Designated National Authority
CER	Certified Emission Reductions
NGO	Non-Governmental Organization
FSR	Feasibility Study Report
IEE	Initial Environmental Examination
CAR	Corrective Action Request
GHG	Greenhouse Gas
Gwh	Gigawatt Hours
Mwh	Megawatt Hours
CO2	Carbon Dioxide
CH4	Methane
N2O	Nitrous Oxide

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 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 & 13.1 by UNFCCC DoE (Designated Operational Entity), APPLUS, Spain. 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 & researchand PGDEL from National Law School of India University, Bangalore (India).

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 wind power plants		Aggregator
7	NA	Power purchase agreement/wheeling agreement		Aggregator
8	NA	Joint Meter Readings/invoices for the complete monitoring period		Aggregator
9	NA	Calibration certificates for energy meters		Aggregator
10	NA	Purchase order for turbine/generator		Aggregator
11	NA	CEA database version 17		Central Electricity Authority, Government of India
12		UCR Program manual version 5 UCR COU standard version 6 UCR Verification standard version 2 UCR terms and conditions		Universal Carbon Registry
13	NA	CDM approved methodology – AMS I. D version 18.0		UNFCCC