WIND POWER PROJECT AT RAJKOT, GUJARAT

Project title	Wind Power Project at Rajkot, Gujarat
Project ID	1045[1]
Monitoring period	01-July-2023 to 31-December-2023
Original date of issue	09-April-2024
Most recent date of issue	-
Version	1.1
VCS Standard Version	*4.7*
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[1] https://registry.verra.org/app/projectDetail/VCS/1045

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PROJECT DETAILS

1.1 Summary Description of the Implementation Status of the Project

ReNew Wind Energy (Rajkot) Private Limited (RNWERPL), the Project Proponent (PP), has installed wind power project of 25.2 MW capacity at Villages: Godladhar, Madhavipur, Kalasar, Devpara and Madava of Rajkot district of Gujarat. The project consists of installation of 12 Suzlon make wind turbines of 2.1 MW capacity each.

Purpose of the Project activity:
The purpose of the project activity is to generate electricity using wind as renewable energy source and helping in reducing usage of fossil fuels which are used for electricity generation. This would reduce the dependency on fossil fuels and reduce the Green House Gas (GHG) emissions.

The project consists of installation of 12 Suzlon make wind turbines of 2.1 MW capacity each. The technical specifications of the S-88 model wind turbine are mentioned below:

Description	Specifications
Wind speed at rated output	14 m/s
Cut in speed	4 m/s
Cut out speed	25 m/s
Hub height	79 meters
Power regulation	Pitch
Rotor diameter	88 meters
Swept area	6082 m^2
Generator type	Asynchronous slip ring type inductiongenerator
Generator rated power output	2100 kW
Voltage	690 V
Expected Operational Life	25 years

These turbines are supplied by Suzlon Ltd and are designed for particular wind conditions. The technology for the same is environmentally safe and sound and there is no technology transfer to the host party involved in the same. Lifetime of the WTGs is expected to be 25 years as per data shared by the technology supplier.

The relevant implementation dates

The project has been successfully implemented and declared commissioned by Gujarat Energy Development Agency (GEDA) on 29/03/2012.

The total GHG emission reductions or removals generated in this monitoring period.

The total emission reductions achieved in this monitoring period i.e. from 01-July-2023 to 31-December-2023 (First and last date included) is 18,548 tCO_2e.

1.2 Audit History

Audit type	Period	Program	Validation/verification body name	Number of years
Validation	09-November-2012	CDM	Lloyd's Register Quality Assurance Limited	Validation
Verification	29-March-2012 to 31-October-2012	Pre CDM- VCS	RINA Services S.p.A. (RINA)	0 Year, 7 months, 3 days
Verification	01-November-2012 to 14-November-2012	-	-	No credits issued under any standard
Verification	15-November-2012 to 30-November-2013	CDM	RINA Services S.p.A. (RINA)	1 year, 16 days
Verification	01-December-2013 to 30-June-2015	CDM	RINA Services S.p.A. (RINA)	1 year, 7 months
Verification	01-July-2015 to 31-May-2021	VCS	KBS Certification Services Pvt. Ltd.	5 years, 11 months
Verification	01-June-2021 to 31-December-2021	VCS	RINA Services S.p.A. (RINA)	0 year, 7 months
Joint Validation & Verification	01-January-2022 to 30-June-2022	VCS	TÜV SÜD South Asia Pvt Ltd	0 year, 6 months
Verification	01-July-2022 to 31-December-2022	VCS	Earthood Services Private Limited (ESPL)	0 year, 6 months
Verification	01-January-2023 to 30-June-2023	VCS	Earthood Services Private Limited (ESPL)	0 year, 6 months
Verification	01-July-2023 to 31-Dec-2023	VCS	Earthood Services Private Limited (ESPL)	0 year, 6 months

1.3 Sectoral Scope and Project Type

Sectoral scope[2]	01 - Energy industries (renewable / non-renewable sources)
Project activity type	Type I - Renewable Energy Projects

1.4 Project Proponent

Organization name	M/s ReNew Wind Energy (Rajkot) Private Limited
Contact person	Mr. Gaurav Kumar Singh
Title	PP Representative
Address	ReNew Hub, Commercial Block-1, Zone 6, Golf Course Road, DLF City, Phase-V, Gurugram- 122009, Haryana
Telephone	+91-9113763638
Email	gaurav.singh2@renew.com

1.5 Other Entities Involved in the Project

No any other entities involved in the project for current verification period

Organization name	NA
Role in the project	
Contact person	
Title	
Address	
Telephone	
Email	

1.6 Project Start Date

Project start date	29-March-2012

[2] *Projects, activities, or methodologies may be developed under any of the 16 VCS sectoral scopes: https://verra.org/programs/verified-carbon-standard/vcs-program-details/#sectoral-scopes*

Justification	The project is successfully implemented and declared commissioned by Gujarat Energy Development Agency (GEDA) on 29-March-2012. The project start date for this VCS project activity was considered as 29-March-2012 which was the earliest commissioning date among WTGs involved in the project activity.

1.7 Project Crediting Period

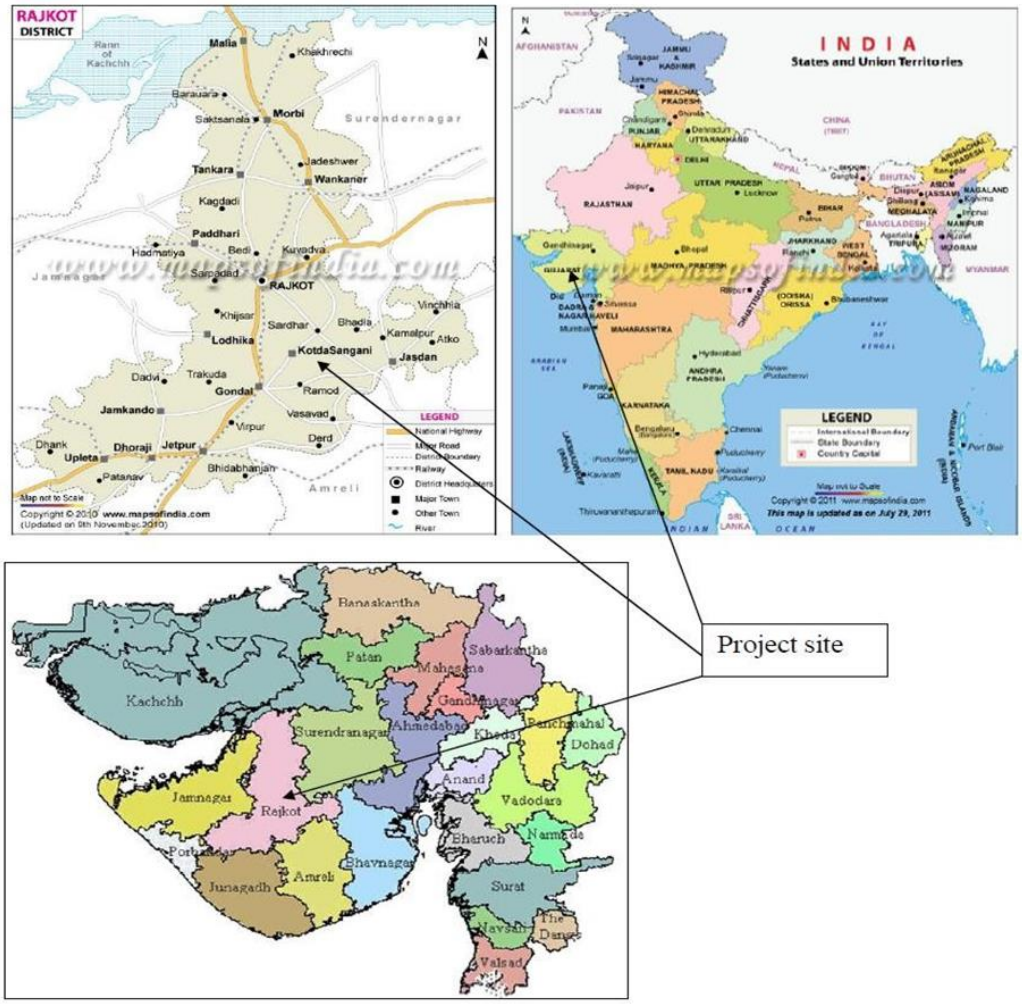
Crediting period	☐ Seven years, twice renewable ☐ Ten years, fixed ☒ Other (The project activity adopts renewable crediting period of 10 years period which can be renewed for maximum 2 times, as per relevant guidelines of VCS Standard: VCS Version3 (v 3.3) under which project was registered.)
Start and end date of first or fixed crediting period	29-March-2022 to 28-March-2032 (This is the second crediting period of this project activity i.e. 29-March-2022 to 28-March-2032 (inclusive of both days). The first crediting period of this project activity was 29-March-2012 to 28-March-2022 (inclusive of both days).

1.8 Project Location

The project is located in Godladhar, Madhavipur, Kalasar, Devpara & Madava villages of Rajkot district in the State of Gujarat, India.

Wind turbine wise detailed geo-coordinates are given below:

Location No.	Village/Taluka/District/State	Geographical Coordinates
G 034	Godladhar/Jasdan/Rajkot/Gujarat	22^0 02' 39.2" N, 71^0 18' 58.5" E
G 036	Godladhar/Jasdan/Rajkot/Gujarat	22^0 03' 01.8" N, 71^0 18' 08.2" E
G 037	Madhavipur/Jasdan/Rajkot/Gujarat	22^0 03' 33.6" N, 71^0 18' 01.5" E
G 038	Godladhar/Jasdan/Rajkot/Gujarat	22^0 02' 52.1" N, 71^0 18' 58.9" E
G 039	Godladhar/Jasdan/Rajkot/Gujarat	22^0 03' 14.8" N, 71^0 18' 45.6" E
G 041	Madhavipur/Jasdan/Rajkot/Gujarat	22^0 03' 47.3" N, 71^0 17' 49.0" E
G 042	Madhavipur/Jasdan/Rajkot/Gujarat	22^0 03' 45.5" N, 71^0 18' 10.6" E
G 046	Kalasar /Jasdan/Rajkot/Gujarat	22^0 05' 06.0" N, 71^0 16' 42.6" E
G 055	Devpara /Jasdan/Rajkot/Gujarat	22^0 06' 04.6" N, 71^0 14' 19.7" E
G 056	Devpara /Jasdan/Rajkot/Gujarat	22^0 06' 18.1" N, 71^0 14' 15.1" E
G 068	Madava /Jasdan/Rajkot/Gujarat	22^0 08' 36.6" N, 71^0 14' 06.0" E
G 112	Kalasar/Jasdan/Rajkot/Gujarat	22^0 04' 54.0" N, 71^0 16' 18.0" E



1.9 Title and Reference of Methodology

Type (methodology, tool or module).	Reference ID, if applicable	Title	Version
Methodology	ACM0002	Grid-connected electricity generation from renewable sources[3]	20.0
Tool	Tool 07	Tool to calculate the emission factor for an electricity system	07.0
Tool	Tool 01	Tool for the demonstration and assessment of additionality	7.0

[3] https://cdm.unfccc.int/UserManagement/FileStorage/AG07ZJQ3EXD42LT5YV9HR16M8KINPO

1.10 Double Counting and Participation under Other GHG Programs

1.10.1 No Double Issuance

Is the project receiving or seeking credit for reductions and removals from a project activity under another GHG program?

☐ Yes ☒ No

1.10.2 Registration in Other GHG Programs

Is the project registered or seeking registration under any other GHG programs?

☐ Yes ☒ No

1.11 Double Claiming, Other Forms of Credit, and Scope 3 Emissions

1.11.1 No Double Claiming with Emissions Trading Programs or Binding Emission Limits

Are project reductions and removals or project activities also included in an emissions trading program or binding emission limit? See the *VCS Program Definitions* for definitions of emissions trading program and binding emission limit.

☐ Yes ☒ No

1.11.2 No Double Claiming with Other Forms of Environmental Credit

Has the project activity sought, received, or is planning to receive credit from another GHG-related environmental credit system? See the *VCS Program Definitions* for definition of GHG-related environmental credit system.

☐ Yes ☒ No

1.11.3 Supply Chain (Scope 3) Emissions

Do the project activities affect the emissions footprint of any product(s) (goods or services) that are part of a supply chain?

☐ Yes ☒ No

1.12 Sustainable Development Contributions

Contribution to sustainable development:

National CDM Authority (Indian DNA), Ministry of Environment, Forests & Climate Change (MoEFCC), Government of India has stipulated the following indicators for sustainable development in the interim approval guidelines for CDM projects:

Social well-being:

Since, the project activity is in a rural area of Gujarat, it will help in the overall development of the region. The project activity will result in generation of direct and indirect employment opportunities for the local people residing nearby villages in Rajkot, both during construction and operation phases of the project activity.

Economic well-being:
The project will create a business opportunity for local stakeholders such as suppliers, manufacturers, contractors etc in Rajkot region of Gujarat.

Environmental well-being:
Since, the project uses wind as renewable source for power generation; it does not lead to any greenhouse gas emission. It will avoid the fossil fuel consumption in the Indian grid and in turn it will result in SOx, NOx particulate matter emission reduction.

Technological well-being:
The technology that is being used in the project activity is environmentally safe and sound. The project demonstrates harnessing wind power potential in Gujarat and encourages setting up such projects in near future.

Table 1: Sustainable Development Contributions

Row number	SDG target	SDG indicator	Net impact on SDG indicator	Current project contributions	Contributions over project lifetime
Sequential row number	*SDG Target number*	*Number and text of SDG indicator or, if no official SDG indicator is applicable, user-defined indicator*	*Indicate the project's contribution to the SDG Indicator (implemented activities to increase or decrease)*	*Brief description of the quantifiable impact of the project's activities related to the SDG indicator, during the monitoring period.*	*Brief description of the cumulative quantifiable impact of the project's activities related to the SDG indicator, over the project lifetime.*
1)					
2)					
3)					
4)					

This is not applicable up to 2025.

1.13 Commercially Sensitive Information

Not applicable. No commercially sensitive information has been excluded from the public version of the project description. There is no commercially sensitive information.

2 SAFEGUARDS AND STAKEHOLDER ENGAGEMENT

2.1 Stakeholder Engagement and Consultation

2.1.1 Stakeholder Identification

Since none of the stakeholders have been changed since validation and all the identified stakeholders were involved and no new group of stakeholders are to be included for this ongoing verification. Therefore, this section is not applicable.

Stakeholder Identification	Not Applicable
Legal or customary tenure/access rights	Not Applicable
Stakeholder diversity and changes over time	Not Applicable
Expected changes in well-being	Not Applicable
Location of stakeholders	Not Applicable
Location of resources	Not Applicable

2.1.2 Stakeholder Consultation and Ongoing Communication

Ongoing consultation	The process of local stakeholder consultation is continuous. During the current monitoring period, the project proponent has kept grievance register in plant site office and sought comments/grievances/suggestions from local stakeholders including local community, government agencies and NGOs.

Date(s) of stakeholder consultation	23-November-2011 at Jasdan, Rajkot
Communication of monitored results	The monitoring results are communicated from the concerned individuals (stakeholders) to PP, through the grievance register. The site officials acknowledge and address the comments, suggestions, or grievances submitted by stakeholders, resolving issues as needed.
Consultation records	Registers is used to records the grievances and feedback. Grievance register is placed at the site office and is accessible to everyone.
Stakeholder input	There was no negative feedback from any of the stakeholders who attended the meeting. They in fact supported the initiative taken by the project proponent for carrying out such an activity in the region. Hence, there is no need to take due account of the comments.

2.1.3 Free, Prior, and Informed Consent

Consent	The project secured consent through inclusive community consultations, involving Indigenous Peoples (IPs), Local Communities (LCs), and NGOs. Extensive engagement, transparent information sharing, and acknowledgment of customary rights were key. Continuous monitoring and evaluation demonstrate the commitment to transparency and positive community outcomes. The absence of ongoing conflicts reflects the project's success in aligning with stakeholder interests and maintaining a harmonious relationship with the community.
Outcome of FPIC	The Free, Prior, and Informed Consent (FPIC) process for the project resulted in a positive outcome. Transparent agreements were reached with Indigenous Peoples (IPs), Local Communities (LCs), and NGOs. Information disclosed included project details, potential impacts, and benefits, ensuring stakeholders' understanding. Assurance is provided that the project adheres to ethical standards - no encroachment on existing land occurred, and no forced physical or

	economic displacement took place. The project utilized unused, greenfield land, and the absence of relocation signifies the commitment to responsible and sustainable development practices.

2.1.4 Grievance Redress Procedure

The stakeholders are also requested to share their experiences and grievances on continuous basis. Registers is used to records the grievances and feedback. Grievance register is placed a site office and is accessible to everyone. During the current monitoring period, positive feedbacks had been received regarding site operation. No any grievances received during the current monitoring period, therefore, no any mitigation measures were required. In case of grievances, the nature of probable resolution is discussed with the plant head office and implemented by the site in-charge.

Grievances received	Resolution and outcome
NA	NA

2.1.5 Public Comments

There was no negative feedback from any of the stakeholders who attended the meeting. They in fact supported the initiative taken by the project proponent for carrying out such an activity in the region. Hence, there is no need to take due account of the comments.

Summary of comments received	Actions taken
NA	NA

2.2 Risks to Stakeholders and the Environment

	Risk identified	Mitigation or preventative measure taken
Risks to stakeholder participation	No risk to stakeholder participation is anticipated	There are no exclusions, lack of communication or barriers in the project activity, that might prevent stakeholders from engaging or participating.
Working conditions	No risk identified	There are no risks related to working conditions of the employees in the project activity,

		due to comprehensive safety training programs for the workers/employees.
Safety of women and girls	No risk identified	The project activity has no negative impact over the safety of women and girls. Also, the safety concerns of the women and girls are addressed through the interactions with the stakeholders and resolved as per requirement. Moreover, the project strictly adheres to the laws for the women and girls, demonstrating the commitment to address any threat related to the safety of the women/girls of the project location.
Safety of minority and marginalized groups, including children	No risk identified	No threats to the safety of minority and marginalized groups, including children have been identified. The PP duly diligently follows the legal and human rights of the children, minorities and marginalized groups, and hence, the project poses no negative effects on them.
Pollutants (air, noise, discharges to water, generation of waste, release of hazardous materials)	No risk identified	There is no risk due to generation of pollutants (noise, discharges to water, generation of waste, and release of hazardous materials), due to project activity. The project rather improves air quality by preventing fossil fuel burns and mitigates climate change by producing electricity from a clean source of energy, i.e. wind energy.

2.3 Respect for Human Rights and Equity

2.3.1 Labor and Work

Discrimination and sexual harassment	PP shall oblige to create a workplace free of sexual harassment and no discrimination as per local law and same will be demonstrated during validation assessment process.
Management experience	The project showcases management expertise in renewable energy initiatives and effective community engagement. With a proven track record, the team emphasizes transparent communication, relationship-building, and culturally sensitive approaches. Strategic partnerships are forged to fill expertise gaps, and a dynamic recruitment strategy is in place for skill diversification.
Gender equity in labor and work	No discrimination in workers with respect to gender in providing jobs and also there is no discrimination in respect to wages between genders. This will be demonstrated by the project proponent during validation assessment process.
Human trafficking, forced labor, and child labor	Project activity does not and will not use victims of human trafficking, forced labor, and child labor. This will be demonstrated by the project proponent during validation assessment process.

2.3.2 Human Rights

The following demonstrations show how the project is committed to safeguard the rights of IPs, LCs, and customary right holders, while following the international human rights law[4], the UNDRIP[5] and ILO Convention 169-

- **Free, Prior, and Informed Consent (FPIC)**: The project activity has obtained the FPIC from the local stakeholders including the IPs, LCs and customary right holders, ensuring their unforced consent before the project operation, respecting their right to make decisions.
- **Non-discriminatory Participation in the Project Activity**- The project distributed devices without cultural or social biases, safeguarding the rights of IPs, LCs, and customary rights holders to be free from discrimination.
- **Employment due to the Project Activity**- The project activity also leads to the employment from the IPs, LCs and customary right holders, enabling them to exercise their right to fair treatment in employment and salary.

[4] https://www.ohchr.org/sites/default/files/Documents/Publications/fs9Rev.2.pdf

[5] https://www.un.org/development/desa/indigenouspeoples/wp-content/uploads/sites/19/2018/11/UNDRIP_E_web.pdf

2.3.3 Indigenous Peoples and Cultural Heritage

The project activity does not impact the tangible or intangible cultural heritage or the indigenous people nearby.

2.3.4 Property Rights

Disputes over rights to territories and resources	N/A
Respect for property rights	The land / property for the project activity belongs to the project proponent. Additionally, the project activity has obtained the free, prior and informed consent of the stakeholders (including the IPs, LCs, and customary rights holders). This ensures that their lands are property rights are protected and respected.

2.3.5 Benefit Sharing

Summary of the benefit sharing plan	Since the above section 2.3.4 is not applicable, hence this section is also not applicable.
Benefit sharing during the monitoring period	N/A

2.4 Ecosystem Health

	Risk identified	Mitigation or preventative measure taken during the monitoring period
Impacts on biodiversity and ecosystems	No risk identified	This project activity doesn't result in adverse effects; instead, it positively impacts on the biodiversity and ecosystem by decreasing air pollution and mitigating climate change.
Soil degradation and soil erosion	No risk identified	This project activity keeps check of the soil degradation and soil erosion by periodic monitoring.
Water consumption and stress	No risk identified	This project activity is a wind power project and does not have any negative impacts on water

		consumption or does not lead to water stress in any way.
Usage of fertilizers	No risk identified	Since, this is a wind project activity, hence it does not account for any adverse impacts associated with the use of fertilizers.

2.4.1 Rare, Threatened, and Endangered species

Species or habitat	The project activity has not adversely impacted habitats for rare, threatened, or endangered species during the monitoring period.

2.4.2 Introduction of species

Species introduced	Classification	Justification for use	Adverse effects and mitigation
Not applicable (NA)	NA	NA	NA

Existing invasive species	Mitigation measures to prevent spread or continued existence of invasive species
NA	NA

2.4.3 Ecosystem conversion

Since, the project activity is neither ARR, ALM, WRC nor ACoGS, hence this information is not applicable.

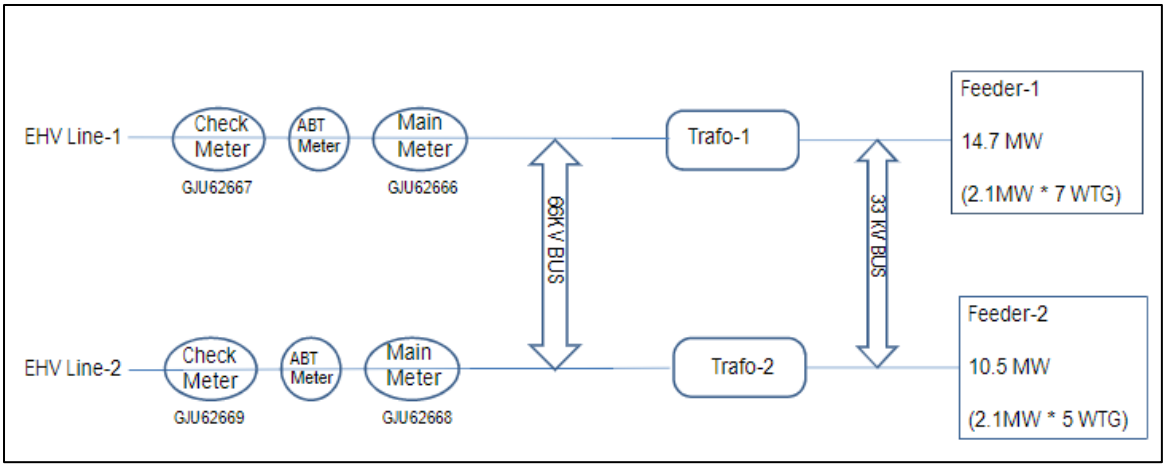
3 IMPLEMENTATION STATUS

3.1 Implementation Status of the Project Activity

The project is successfully implemented and declared commissioned by Gujarat Energy Development Agency (GEDA) on 29-March-2012.

Wind Power plant are running satisfactorily during the reported monitoring period. There are no special events occur during the reported monitoring period. Hence, no impact occurs on the GHG emission reduction from the project activity. No major equipment has been replaced or exchanged during this period. There was no such event occurred that may impact the GHG emission reductions or removals and monitoring.

The project boundary includes the Wind Project activity, sub-station, grid and all power plants connected to grid. The proposed project activity will evacuate power to the Indian grid.



3.2 Deviations

3.2.1 Methodology Deviations

There is no request for methodology deviation applied during current monitoring period.

3.2.2 Project Description Deviations

In the registered PD, the project has considered 7WTGs selling power under preferential tariff and 5 WTGs selling power under open access. However, it has been found that 11 WTGs are selling power under preferential tariff and one WTG is selling power under open access.

The open access tariff and preferential tariff considered for equity IRR estimation in the project PD is higher compared to the actual tariffs as per the signed PPA.

Particulars	**Tariff considered in Registered PD**	**Actual tariff as per PPA**
Open access tariff for 23.1 MW capacity)	INR 3.9 per kWh	INR 2.64 per kWh (PPA dated 29-Mar 2012)
Preferential tariff (for 2.1 MW capacity)	INR 3.56 per kWh	INR 3.25 per kWh (PPA dated 1-Feb 2020)

Since the actual tariff at which energy is sold is lower compared to the tariff considered in Registered PD for equity IRR estimation, hence the project design change has no adverse impact on project baseline and applicability of methodology.

3.3 Grouped Projects

Not Applicable, as this is not a grouped project activity.

3.4 Baseline Reassessment

Did the project undergo baseline reassessment during the monitoring period?

☐ Yes ☒ No

4 DATA AND PARAMETERS

4.1 Data and Parameters Available at Validation

Data / Parameter	$EF_{grid,OM,y}$
Data unit	tCO_2/MWh
Description	Simple operating margin for Indian grid
Source of data	CO_2 baseline database (Version 17) published by CEA in October 2021[6]
Value applied	0.9522
Justification of choice of data or description of measurement methods and procedures applied	This value is calculated by taking weighted average of 3 years values for Simple Operating Margin of Indian grid viz. 2018-19, 2019-20 and 2020-21
Purpose of Data	Calculation of baseline emissions
Comments	Fixed ex-ante for entire crediting period

Data / Parameter	$EF_{grid,BM,y}$
Data unit	tCO2e/MWh
Description	Build margin for Indian grid
Source of data	CO_2 baseline database (Version 17) published by CEA in October 2021[7]
Value applied	0.8653
Justification of choice of data or description of measurement methods and procedures applied	Calculated as per "Tool to calculate the emission factor for an electricity system, version 07".as per the latest data available for the most recent year 2020-21. The data is obtained from "CO2 Baseline Database for Indian Power Sector" version 17, published by the Central Electricity Authority, Ministry of Power, and Government of India.
Purpose of Data	Calculation of baseline emissions
Comments	Fixed ex-ante for entire crediting period

[6] https://cea.nic.in/wp-content/uploads/tpe___cc/2022/02/User_Guide__ver_17_2021.pdf

[7] https://cea.nic.in/wp-content/uploads/tpe___cc/2022/02/User_Guide__ver_17_2021.pdf

Data / Parameter	W_{OM}
Data unit	%
Description	Weightage of operating margin emissions factor
Source of data	Latest version of the "Tool to calculate the emission factor for an electricity system" (Version 07.0, EB 100, Annex 4)8
Value applied	0.75
Justification of choice of data or description of measurement methods and procedures applied	Default values used as per the "Tool to calculate the emission factor for an electricity system" Version 07.0
Purpose of Data	Calculation of baseline emissions
Comments	-

Data / Parameter	W_{BM}
Data unit	%
Description	Weightage of build margin emissions factor
Source of data	Latest version of the "Tool to calculate the emission factor for an electricity system" (Version 07.0, EB 100, Annex)9
Value applied	0.25
Justification of choice of data or description of measurement methods and procedures applied	Default values used as per the "Tool to calculate the emission factor for an electricity system" Version 07.0
Purpose of Data	Calculation of baseline emissions
Comments	-

Data / Parameter	$\mathbf{EF_{grid,CM,y}}$
Data unit	tCO_2e/MWh
Description	Emission factor for Indian grid
Source of data	Calculated from CEA database, Version 17, OCT 2021[10]
Value applied	0.9305

[8] https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-07-v7.0.pdf
[9] https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-07-v7.0.pdf
[10] https://cea.nic.in/wp-content/uploads/tpe___cc/2022/02/User_Guide__ver_17_2021.pdf

Justification of choice of data or description of measurement methods and procedures applied	This value is calculated using EFgrid,OM,y and EFgrid,BM,y values as per Version 07.0 of methodological tool to calculate the emission factor for an electricity system
Purpose of Data	Calculation of baseline emissions
Comments	-

4.2 Data and Parameters Monitored

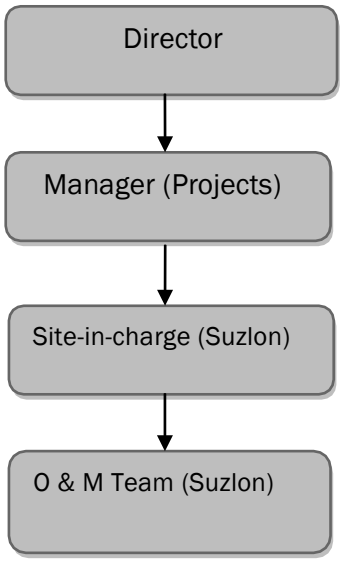
Data / Parameter	$EG_{facility,y}$
Data unit	MWh/ year
Description	Quantity of net electricity generation supplied by the project plant/unit to the grid in year y
Source of data	Certificate for share of electricity generated by Wind farm provided by GETCO
Description of measurement methods and procedures to be applied	The electricity generated and fed into the grid shall be monitored using special energy meters which are ABT meters. Monitoring: Continuous measurement and at least monthly recording. Archiving: Electronic and Paper Data type: Measured & Calculated Recording Frequency: Continuous monitoring and monthly recording Responsibility: The O&M site-in-charge shall be responsible for the regular recording of data. Calibration Frequency: once in 3 years Accuracy Class: 0.2S (Active) and 0.5S (Reactive)
Frequency of monitoring/recording	Continuous measurement and at least monthly recording
Value monitored	19,934.24 MWh
Monitoring equipment	ABT meter with accuracy class 0.2S (Active) and 0.5S (Reactive)
QA/QC procedures to be applied	The Quantity of net electricity generation from the certificate for share of electricity will be cross-checked with the invoices for the sale of power by the project proponent. The meter(s) shall be calibrated and maintained by the state utility as per their own schedule and this frequency of meter calibration is not within the control of the Project Proponent.
Purpose of the data	Calculation of baseline emissions

Calculation method	-
Comments	The data are kept for two years after the end of the crediting period or the last issuance of CERs for this project activity, whichever occurs later.

4.3 Monitoring Plan

In Monitoring & Verification protocol, the objective is to have clear, credible and accurate monitoring, evaluation and verification procedures. This involves recording, data collection of all wind turbines, metering of electricity generated at substation, on daily basis as well as on monthly basis. The general conditions for metering, recording, meter readings, meter inspections, Test & Checking and communication are as per the Power Purchase Agreement with the state utility.

The project proponent proposes following arrangements in order to carry out metering and O & M activities for all wind turbines:



At 33 kV/66 kV Parveda substation (Currently managed by Suzlon), there are two feeders; Feeder 1 to which 7 wind turbines and Feeder 2 to which 5 wind turbines are connected. Main meter, check meter and ABT meters are located at the substation.

The meter readings are reported to the site-in-charge and the compiled reports are sent to the Manager (Projects) and Director. The Manager is monitoring overall activity of the project and report to the Director. As per O & M schedule, the operation and maintenance activities are carried out by trained and qualified technical staff of Suzlon.

Each party are maintaining complete and accurate records and all other data required by each of them for the purposes of proper administration and the operation of the project.

5 QUANTIFICATION OF GHG EMISSION REDUCTIONS AND REMOVALS

5.1 Baseline Emissions

Baseline Emissions (BE_y)

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

Where:

BE_y	:	Baseline emissions in year y (tCO_2e/yr)
$EG_{PJ,y}$	:	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/yr)
$EF_{grid,CM,y}$	:	Combined margin CO_2 emission factor for grid connected power generation in year y calculated using the latest version of the "Tool to calculate the emission factor for an electricity system" (tCO_2e/MWh)

Hence,

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

BE_y = 19,934.24 (MWh) * 0.9305 (tCO_2/MWh)

BE_y = 18,548 tCO_2 (Rounded down to nearest integer value)

5.2 Project Emissions

As per the guidance provided in the methodology ACM0002 (Version 20.0), "For most renewable power generation project activities, PE y = 0.

5.3 Leakage Emissions

The methodology ACM0002 (Version 20.0) does not consider any leakage emissions.

Hence, LE_y= 0

5.4 GHG Emission Reductions and Carbon Dioxide Removals

Emission reductions are calculated as follows:

$$ER_y = BE_y - PE_y$$

Where:

ER_y	=	Emission reductions in year y (t CO_2e/yr)
BE_y	=	Baseline emissions in year y (t CO_2/yr)
PE_y	=	Project emissions in year y (t CO_2e/yr)

Vintage period	Baseline emissions (tCO_2e)	Project emissions (tCO_2e)	Leakage emissions (tCO_2e)	Reduction VCUs (tCO_2e)	Removal VCUs (tCO_2e)	Total VCUs (tCO_2e)
01-July-2023 to 31-December-2023	18,548	0	0	18,548	0	18,548
Total	**18,548**	**0**	**0**	**18,548**	**0**	**18,548**

It is to be noted here that as per the estimated emission reduction to be achieved from the project activity for the current monitoring period is 23,816 tCO_2e, whereas actual emission reductions achieved are 18,548 tCO_2e, which is approximately 22.12 % lower than the estimated emission reductions. The generation of electricity depends upon many other climatic conditions, which are not within the control of the project participant. The lower generation during the current verification period is due to certain natural conditions and it doesn't breach the additionality of the project. Hence, it is acceptable.

Vintage period	Ex-ante estimated reductions/ removals	Achieved reductions/ removals	Percent difference	Explanation for the difference
01-July-2023 to 31-December-2023	23,816	18,548	-22.12 %	The generation of electricity depends upon many other climatic conditions, which are not within the control of the project participant. The lower generation during the current verification period is due to certain natural conditions and it doesn't breach the additionality of the project. Hence, it is acceptable.
Total	23,816	18,548	-22.12 %	

APPENDIX 1: COMMERCIALLY SENSITIVE INFORMATION

Section	Information	Justification
NA	NA	NA

APPENDIX X: < METER CALIBRATION DETAILS>

Meter	66 KV PAREWADA-KAMALAPUR S/S TVM METER LINE 1 (Main)	66 KV PAREWADA-KAMALAPUR S/S TVM METER LINE 1 (Check)	66 KV PAREWADA-KAMALAPUR S/S TVM METER LINE 2 (Main)	66 KV PAREWADA-KAMALAPUR S/S TVM METER LINE 2 (Check)	66 KV PAREWADA-KAMALAPUR S/S ABT METER LINE 1	66 KV PAREWADA-KAMALAPUR S/S ABT METER LINE 2
Make	Secure (E3M021)	Secure (E3M021)	Secure (E3M021)	Secure (E3M021)	Larsen & Toubro	Larsen & Toubro
Serial number	GJU62666	GJU62667	GJU62668	GJU62669	GJ-1045-A	GJ-1046-A
Calibration Date	31-March-2021	31-March-2021	31-March-2021	31-March-2021	05-January-2022	05-January-2022
Calibration due date	30-March-2024	30-March-2024	30-March-2024	30-March-2024	04-January-2025	04-January-2025