



# RENEWABLE WIND POWER PROJECT BYADANI



Document Prepared by EKI Energy Services Limited

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# 1 PROJECT DETAILS

## 1.1 Summary Description of the Implementation Status of the Project

The project activity generates clean form of electricity through renewable wind energy source. The project involves 150 MW wind project in State of Gujarat.

Over the 10 years of first crediting period, the project replaces anthropogenic emissions of greenhouse gases (GHG's) estimated to be approximately 301,584 tCO<sub>2</sub>e per year, thereon displacing 321,930 MWh/year amount of electricity from the generation-mix of power plants connected to the Indian grid, which is mainly dominated by thermal/fossil fuel based power plant.

The details of the project is mentioned in the table below.

Name of the SPVs <sup>1</sup>	Capacity (MW)	COD	Connection with the Grid	State	Usage
Wind Three Renergy Private Limited	50	29/06/2019	Indian Grid	Gujarat	Sale to grid
Wind One Renergy Private Limited	50	02/07/2019			
Adani Green Energy (MP) Limited	50	20/10/2019			

Total emission reductions achieved in this monitoring period:

During the Current Monitoring Period from 01-September-2021 to 30-September-2022 (First and last date included) the project activity has supplied 388,971.62 MWh of electricity, and thus contributing to the GHG reductions 364,385 tCO<sub>2</sub>e.

## 1.2 Sectoral Scope and Project Type

The project activity falls under the following Sectoral scope and Project Type.

Sectoral Scope: 01 - Energy industries (renewable / non-renewable sources)

Project Type: I - Renewable Energy Projects

Project Category: Grid-connected electricity generation from renewable sources ACM0002- Version 19.0<sup>2</sup>

## 1.3 Project Proponent

<sup>1</sup> SPVs are the Special Purpose Vehicles formed by PP to develop the project activities. For this project activity, Wind Three Renergy Private Limited, Wind One Renergy Private Limited & Adani Green Energy (MP) Limited are the SPVs and Adani Green Energy (MP) Limited is the parent company which is the PP of this project activity.

<sup>2</sup> <http://cdm.unfccc.int/methodologies/DB/VJI9AX539D9MLOPXN2AY9UR1N4IYGD>

<b>Organization name</b>	Adani Green Energy Limited
<b>Contact person</b>	Mr. Sandeep Saha
<b>Title</b>	Lead – Carbon Offset Market
<b>Address</b>	Adani Corporate House”, 4th Floor – South Wing, Shantigram, S. G. Highway, Ahmedabad 382 421, Gujarat, India.
<b>Telephone</b>	+91- 79 2656 5555
<b>Email</b>	sandip.saha@adani.com

#### 1.4 Other Entities Involved in the Project

<b>Organization name</b>	EKI Energy Services Limited
<b>Role in the Project</b>	Project Consultant
<b>Contact person</b>	Manish Dabkara
<b>Title</b>	CEO & MD
<b>Address</b>	EnKing Embassy, Office No 201, Plot 48, Scheme 78, Part 2, Vijay Nagar, Indore- 452010, Madhya Pradesh, India.
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#### 1.5 Project Start Date

Start date of the project activity is the earliest date of interconnection with the grid i.e. 29-06- 2019. This is the date of commissioning of 50 MW wind energy project activity by Wind Three Renergy Pvt. Ltd.

#### 1.6 Project Crediting Period

Crediting Period Start date: 29-June-2019

Crediting Period End date: 28-June-2029

The project activity adopts renewable crediting period of 10 years period which can be renewed for maximum 2 times.

## 1.7 Project Location

The details of the project locations are mentioned in the table below

Name of the SPVs	Capacity (MW)	Village	Taluka	District	State
Wind Three Renergy Private Limited	50	Meghpar, Lakhpat	Nakhatrana	Kutch	Gujarat
Wind One Renergy Private Limited	50				
Adani Green Energy (MP) Limited	50	Ratadiyaat			

The geo-coordinates of the project have been provided in the table below

Name of the SPVs	Capacity (MW)	Latitude	Longitude
Wind Three Renergy Private Limited	50	23° 12' 32.4108"N	70° 38' 7.6236"E
Wind One Renergy Private Limited	50	23° 12' 29.952"N	70° 37' 50.9772"E
Adani Green Energy (MP) Limited	50	23° 12' 30.42"N	70° 38' 26.0484"E

The project location has been highlighted in the map below



## 1.8 Title and Reference of Methodology

Title: Grid-connected electricity generation from renewable sources

Reference: The project activity meets the eligibility criteria of large scale project as it is more than 15 MW

Methodology: ACM0002: Grid-connected electricity generation from renewable sources - Version 19.0<sup>3</sup>

Type I: Energy industries (renewable / non-renewable sources)

Category: Approved Consolidated Methodology (ACM0002)

Tools referred with above methodology and applicable for project activity are:

- Tool to calculate the emission factor for an electricity system<sup>4</sup>- Version 07.0 (EB 100, Annex 04)
- Methodological Tool- Tool for the demonstration and assessment of additionality - Version 07.0.0 (EB 70, Annex 08).

## 1.9 Participation under other GHG Programs

The project has neither been registered nor seeking registration under any other GHG programs. The project is registered only in VCS program.

### 1.10 Other Forms of Credit

Emission Trading Programs and Other Binding Limits:

Net GHG emission reductions or removals generated by the project are not being used for compliance with an Other Forms of Environmental Credit:

Not applicable, as the project is not registered in any other GHG mechanism other than VCS. Also, the project activity is not availing any REC benefits and the same can be confirmed from publicly available link of REC generators.

Web-link: [https://www.recregistryindia.nic.in/index.php/general/publics/registered\\_regens](https://www.recregistryindia.nic.in/index.php/general/publics/registered_regens)

### 1.11 Sustainable Development Contributions

Contribution to sustainable development:

Ministry of Environment, Forest and Climate Change, has stipulated economic, social, environment and technological well-being as the four indicators of sustainable development. The project contributes to sustainable development using the following ways.

**Social well-being:** The project helps in generating employment opportunities during the construction and operation phases. The project activity lead to development in infrastructure in the region like development of roads and also may promote business with improved power generation.

<sup>3</sup> <http://cdm.unfccc.int/methodologies/DB/VJI9AX539D9MLOPXN2AY9UR1N4IYGD>

<sup>4</sup> <http://cdm.unfccc.int/methodologies/PAMethodologies/tools/am-tool-07-v7.0.pdf>

**Economic well-being:** The project is a clean technology investment in the region, which would not have been taken place in the absence of the VCS benefits the project activity also helps to reduce the demand supply gap in the state.

**Technological well-being:** The successful operation of project activity lead to promotion of wind based power generation and encouraged other entrepreneurs to participate in similar projects.

**Environmental well-being:** Wind being a renewable source of energy, it reduces the dependence on fossil fuels and conserves natural resources which are on the verge of depletion. Due to its zero emission the Project activity also helps in avoiding significant amount of GHG emissions and specific pollutants like SO<sub>x</sub>, NO<sub>x</sub>, and SPM associated with the conventional thermal power generation facilities.

**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.
Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable

\*Required project proponents to demonstrate contributions to a minimum of three SDGs in all monitoring reports verified after the effective date. Effective immediately for all projects that request registration on or after 20 January 2023. Projects that request registration before 20 January 2023 shall demonstrate contributions to at least three SDGs by 20 January 2025. Hence, PP will demonstrate contribution to the SDGs by 2025.

## 2 SAFEGUARDS

### 2.1 No Net Harm

The project activity does not involve any major construction activity. It primarily requires the installation of the WTGs, interfacing the generators with the State Electricity Board by setting up HT transmission lines and installation of other accessories.

The report on “Developmental Impacts and Sustainable Governance Aspects of Renewable Energy Projects” prepared by MNRE dated September 2013. This report clearly mentioned that wind energy project activity operations do not result in direct air pollution, noise pollution. Please refer below web link for the same.

Thus, there are no any negative socio-economic and environmental impacts due to implementation of project activity on air, water, soil quality and ambience are envisaged due to the project activity.

### 2.2 Local Stakeholder Consultation

The local stakeholder meeting was carried out for the project activity and the details of the same can be referred from the registered VCS PD.

For SPVs Wind One Renergy Pvt. Ltd and Wind Three Renergy Pvt Ltd., the stakeholder meeting was conducted at village Dayapar, Kutch District of Gujarat state, and the local stakeholders were invited for the stakeholder meeting through public notice on 22-April-2019 and the meeting was conducted on 28-April-2019 . For SPV Adani Green Energy (MP) Limited, the stakeholder meeting was conducted at village Ratadiyat, Kutch District of Gujarat state, and the local stakeholders were invited for the stakeholder meeting through public notice on 19-April-2019 and the stakeholder meeting was conducted on 26-April-2019 .

During the stakeholder meeting, the stakeholders were briefed about the project activity. The stakeholders were also allowed for the feedback/clarification session, wherein, the stakeholders put forward their queries which were answered by the PP representative.

As a part of continuous and on-going feedback/communication from stakeholders, the PP has placed a grievance register onsite where-in, the stakeholders can put down their complaints/feedbacks and the same if found genuine are addressed immediately.

However, during the current monitoring period, no comments or feedbacks were received.

### 2.3 AFOLU-Specific Safeguards

Not applicable to this as this is not an AFOLU project activity.

## 3 IMPLEMENTATION STATUS

### 3.1 Implementation Status of the Project Activity

The project activity is wind project. The total installed capacity of the project is 150 MW of Wind project located in Gujrat state of India.

The Project activity is a new facility (Greenfield) and the electricity generated by the project is exported to the Indian electricity grid. The project therefore displaces an equivalent amount of electricity which would have otherwise been generated by fossil fuel dominant electricity grid. The Project Proponent avails the VCS benefits for the project.

During the current monitoring period electricity generation for wind one and wind three was zero due to forced breakdown of WTGs for last two months. Values has been taken zero for the calculation of emission reductions for the current monitoring period of this project activity.

In the Pre- project scenario the entire 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.

The project results in replacing anthropogenic emissions of greenhouse gases (GHG's) estimated to be approximately 301,584 tCO<sub>2</sub>e per year, thereon displacing 321,930 MWh/year amount of electricity from the gird over the 10 years crediting period.

Technical details of INOX wind machine is provided below<sup>5</sup>

Parameter	Technical Data / Description
<b>General Parameters</b>	
Turbine	INOX, DF/2000/113 (HH120)
Rated Output	2000 kW
Wind Speed at rated output (m/s)	10.5 m/s
Cut in Wind Speed (m/s)	3 m/s
Cut out Wind Speed (m/s)	20 m/s
Survival Wind Speed (m/s)	52.5 m/s
Rotor Diameter (m)	113 m
Hub Height (m)	120 m (Hybrid)
Rotor Speed (rpm)	14.2 RPM
Power Regulation Independent Mechanical Pitch	Independent Mechanical Pitch
WEC design for which wind regime	Low Wind Speed
Class of Machine	III A
Life	25 years
<b>Generator</b>	
Rated Power Output (kW)	2000 kW
Type	Asynchronous Double Fed Induction Generator
Voltage	690 V AC, 3 Phase

<sup>5</sup> <http://www.inoxrenewables.com/image/tech-pdf.pdf>

Operation Speed Range, RPM	Variable, 620-1380 RPM
Current	Rated stator current-1506-1526 A, Rated rotor current-526-529 A
Rated Generator Speed, RPM	1200 RPM
No. of Poles	6
Insulation Class	Stator-F, Rotor-F
Protection Class	IP 54
Coupling	Flexible
Frequency	50 Hz
Drive Train	Patented integral drive train
Voltage Variation	±10 %
Power Factor	0.95 Inductive ~ 0.95 Capacitive (Grid Voltage 690 V AC with Tolerance ±10%)
Auxiliary Power Consumption	0.5 % of Generation
Type of Cooling	Forced water cooling
Yawing System	
Type	Direct Contact, Driven by 4 Gear Motors
Yaw Motors	3 Phase, 3 kW, 50 Hz
Yaw Brake	Holding Brake with Electric & Manual Brake Release
AC Motor	Type S1
Pitching System	
Type	3 Phase Servo Motors
Control	Through Pitch Converter
Backup	Capacitor Based
Braking System for Rotor Braking	
Maintenance Braking	Hydraulic Operated Rotor Lock
Manual Locking Arrangement	Hydraulic Operated Rotor Lock
Rotor Blade	
Blade Material	Glass Fibre
Special attachments in Blade	Rain Deflector
Length of Blade	55.2 m
Swept Area of Blade	10029 sq. m
Swept Area per kW Power (sq. m/kW)	5.01
Number of Blades	3
Power Regulation	Pitch Control
Nacelle	
Nacelle Cover & Material	Fibre Reinforcement Plastic
Type of Nacelle Bed	Casting
Facilities for Loading & Unloading	Lifting Eye Bolts
Lightning Protection	Sliding Carbon Brushes & Cables
Weight	74.88 MT
Transformer Mounting	Switchyard
Sensors	
Anemometer	Acoustic Resonance Type (Acu-Res Technology)
Rotor Speed Sensor	Encoder Type 512 Pulse A,B,O/ A/B/O Channel, Push Pull O/p
Blade Position Sensor	Micro Switching Technology
Yaw Pad Sensor	Not applicable
Yaw Motor Speed Sensor	Not required
Over Speed Sensor	Programmable Monitoring Speed Relay
Resolver	Integrated Encoder in Motor
Cable Twist Sensor	YCD (B-Command)
Acceleration Sensor	Double Acceleration Transducer

Current Sensor	CT
Temperature Sensor	PT100
Power Panel	
Voltage	690 V
Short Circuit Level	EN 954 Category-1
Rating of Main MCCB	2000 A
Provision for Earth Fault Protection	Yes
Local Control Panel	
List of Displays	NC (Nacelle Cabinet) & TBC (Tower Base Cabinet)
Control Systems	
Controller Type	PLC
Display	FR 1 (SCADA Based)
Tower	
Tower Height (m)	118 m

## 3.2 Deviations

### 2.1.1 Methodology Deviations

There is no methodology deviation.

### 2.1.2 Project Description Deviations

At the time of registration, the source of generation data for all the SPVs, the JMRs were considered as the source. However, REA statements are being issued for all the three SPVs. The REA statements being issued to PP as source of data for the generation is as per the requirement of State electricity authority and PP has no role to play in it. Hence, the generation data during the current monitoring period has been taken from the REA statements. Therefore, PP seeks the same as deviation from the source of data for generation from the registered PD.

It is to be noted that, due to this deviation, there is no any impact on the applicability of the methodology, additionality or the baseline scenario of the project activity.

## 3.3 Grouped Projects

The project is not a grouped project activity.

# 4 DATA AND PARAMETERS

## 4.1 Data and Parameters Available at Validation

<b>Data / Parameter</b>	$EF_{grid,OM,y}$
<b>Data unit</b>	tCO <sub>2</sub> /MWh
<b>Description</b>	Operating Margin CO <sub>2</sub> emission factor in year y

Source of data	Calculated from CEA database, Version 14, Dec 2018 <sup>6</sup>
Value applied	0.9610
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 3-year generation weighted average using data for the years 2015-16, 2016-17 & 2017-18. The data are obtained from “CO2 Baseline Database for Indian Power Sector” version 14, published by the Central Electricity Authority, Ministry of Power, Government of India.
Purpose of Data	For the calculation of the Baseline Emission
Comments	This parameter is fixed ex-ante for the entire crediting period.

Data / Parameter	$EF_{grid,BM,y}$
Data unit	tCO <sub>2</sub> /MWh
Description	Build Margin CO2 emission factor in year y
Source of data	Calculated from CEA database, Version 14, Dec 2018 <sup>7</sup>
Value applied	0.8644
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 2017-18. The data is obtained from “CO2 Baseline Database for Indian Power Sector” version 14, published by the Central Electricity Authority, Ministry of Power, and Government of India.
Purpose of Data	For the calculation of the Baseline Emission
Comments	This parameter is fixed ex-ante for the entire crediting period.

Data / Parameter	$EF_{grid,CM,y}$
Data unit	tCO <sub>2</sub> /MWh
Description	Combined Margin CO2 emission factor in year y
Source of data	Calculated from CEA database, Version 14, Dec 2018 <sup>8</sup>
Value applied	0.9368
Justification of choice of data or description of measurement methods and procedures applied	<p>The combined margin emissions factor is calculated as follows:</p> $EF_{grid,CM,y} = EF_{grid,OM,y} * W_{OM} + EF_{grid, BM,y} * W_{BM}$ <p>Where:</p> $EF_{grid,BM,y} = \text{Build margin CO}_2 \text{ emission factor in year y (tCO}_2\text{/MWh)}$

<sup>6</sup> [http://www.cea.nic.in/reports/others/thermal/tpece/cdm\\_co2/user\\_guide\\_ver14.pdf](http://www.cea.nic.in/reports/others/thermal/tpece/cdm_co2/user_guide_ver14.pdf)

<sup>7</sup> [http://www.cea.nic.in/reports/others/thermal/tpece/cdm\\_co2/user\\_guide\\_ver14.pdf](http://www.cea.nic.in/reports/others/thermal/tpece/cdm_co2/user_guide_ver14.pdf)

<sup>8</sup> [http://www.cea.nic.in/reports/others/thermal/tpece/cdm\\_co2/user\\_guide\\_ver14.pdf](http://www.cea.nic.in/reports/others/thermal/tpece/cdm_co2/user_guide_ver14.pdf)

	$EF_{grid,OM,y}$ = Operating margin CO2 emission factor in year y (tCO <sub>2</sub> /MWh) $W_{OM}$ = Weighting of operating margin emissions factor (%) = 75% $W_{BM}$ = Weighting of build margin emissions factor (%) = 25%
Purpose of Data	For the calculation of the Baseline Emission
Comments	This parameter is fixed ex-ante for the entire crediting period.

## 4.2 Data and Parameters Monitored

Data / Parameter	$EG_{PJ,y}$
Data unit	MWh
Description	Quantity of net electricity generation supplied by the project plant/unit to the grid in year y in MWh
Source of data	Regional Energy Account statement issued by WRPC
Description of measurement methods and procedures to be applied	Data Type: Measured Monitoring equipment: Energy Meters are used for monitoring Recording Frequency: Continuous monitoring and Monthly recording from Energy Meters Archiving Policy: Paper & Electronic Class of meter: 0.2s. Calibration frequency: Once in five years The REA statement issued by WRPC contains the information of the Scheduled Power. The scheduled power being feed into the grid is crosschecked from the monthly Invoices raised by the PP. For ER calculations, the values of Scheduled Power is considered.
Frequency of monitoring/recording	Continuous measurement & monthly recording
Value monitored	388,971.62
Monitoring equipment	The energy meters of L&T and Secure make of 0.2s accuracy class used to measure electricity exported / supplied by the plant to pooling substation and further to substation. This meter also measures electricity imported by the plant from the grid.  Please refer to Appendix 1 for meter details.
QA/QC procedures to be applied	Energy meters will be calibrated once in a five year and faulty meters will be duly replaced immediately. This data may be cross checked with the Monthly Generation Reports
Purpose of the data	Calculation of baseline emissions

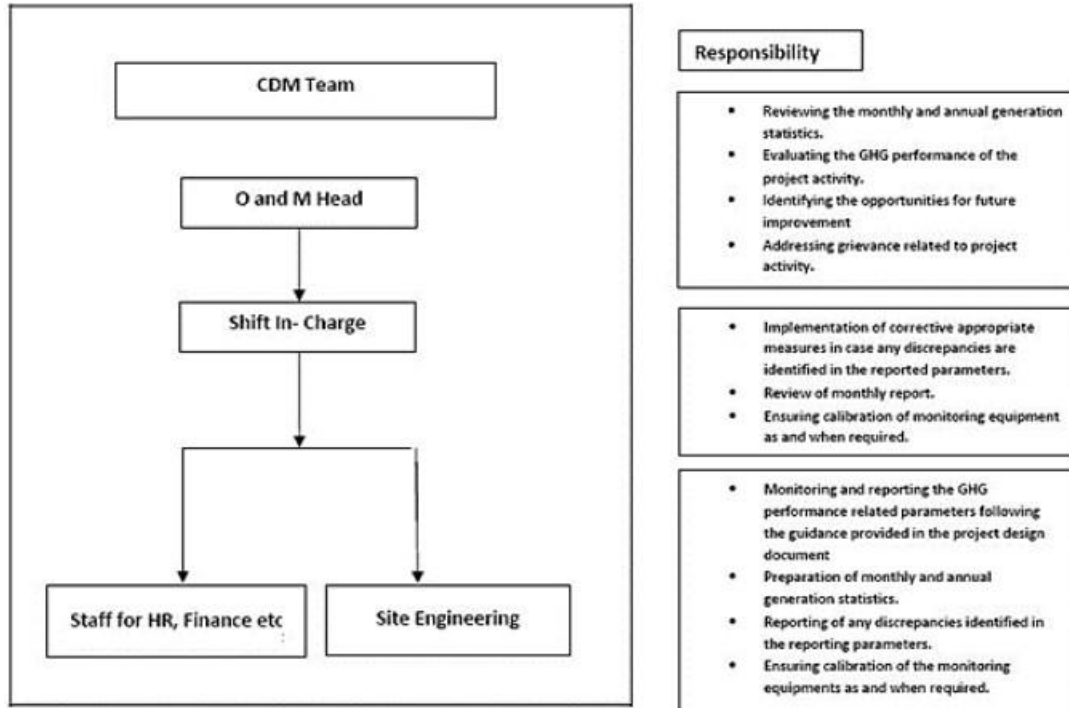
<b>Calculation method</b>	The REA statement issued by WRPC contains the information of the Scheduled Power. For ER calculations, the values of Scheduled Power is considered
<b>Comments</b>	Data will be archived in paper & electronic form for two years after the end of crediting period or of the last issuance of VCUs for this project activity, whichever occurs later.

### 4.3 Monitoring Plan

The monitoring plan is developed in accordance with the modalities and procedures for CDM project activities and is proposed for grid-connected wind power project being implemented. The monitoring plan, which is implemented by the project participant describes about the monitoring organisation, parameters to be monitored, monitoring practices, quality assurance, quality control procedures, data storage and archiving.

As per internal audit conducted by the audit team of PP, There has been no non conformities identified in the monitoring plan in the entire project activity.

The authority and responsibility for registration, monitoring, measurement, reporting and reviewing of the data rests with the project participant. PP proposed the following structure for data monitoring, collection, data archiving and calibration of equipment's for this project activity. The team comprises of the following members:



### Data Measurement

The export and import energy is measured continuously using the Main and Check meters located at the substations. Readings of meters are taken on monthly basis by authorized officer of SEB in the presence of PP or representative of PP. Based on the Meter Reading Statement to PP, invoices are raised. These invoices can be used for cross checking the meter readings taken for the respective project activity.

### Data collection and archiving

Readings from meters are collected in the presence of the plant in-charge. Export and Import data are recorded and stored in logs as well as in electronic form on a daily basis. The records are checked periodically by the Plant Manager and discussed thoroughly with the plant supervisor. The period of storage of the monitored data is 2 years after the end of crediting period or till the last issuance of VERs for the project activity whichever occurs later.

### Emergency preparedness

The project activity does not result in any unidentified activity that can result in substantial emissions from the project activity. No need for emergency preparedness in data monitoring is visualized. In the event that the main meter, which is used to record the net electricity exported by the project, is found to be faulty it will be repaired or replaced and the data from the check meter will be used in its place. In the unlikely event that the check meter fails it will also be repaired or replaced.

### Personnel training

In order to ensure a proper functioning of the project activity and a properly monitoring of emission reductions, the staff are trained. The plant helpers will be trained in equipment operation, data recording, reports writing, operation and maintenance and emergency procedures in compliance with the monitoring plan.

### QA/QC procedures

The energy meters at the feeders are maintained and owned by state electricity board. Neither the project proponent nor the site personnel have any control over it. The records are crosschecked with the records of sold electricity to state electricity board. The meters are calibrated by state electricity board at-least once in five years.

### Apportioning

In case the dates of a particular monitoring period do not match with the dates of the billing cycle, the net electricity exported to the grid would be calculated from:

- Apportioning the net electricity exported to grid, as recorded in the consolidated Share Certificate / JMR Report / Credit Notes certified by the respective state discom, based on the number of days in the monitoring period and the number of days for which Share Certificate / JMR Report / Credit Notes was prepared.

# 5 QUANTIFICATION OF GHG EMISSION REDUCTIONS AND REMOVALS

## 5.1 Baseline Emissions

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

Where:

$BE_y$ : Baseline emissions in year y (tCO<sub>2e</sub>/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 VCS project activity in year y (MWh/yr)

$EF_{grid,CM,y}$ : Combined margin CO<sub>2</sub> 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<sub>2e</sub>/MWh)

Total Baseline emission for the Monitoring period:

Parameter	Unit	Value
$EG_{PJ,y}$	MWh	388,971.62
$EF_{grid,CM,y}$	tCO <sub>2e</sub> /MWh	0.9368
$BE_y$	tCO <sub>2e</sub>	364,385

## 5.2 Project Emissions

Not Applicable, since project emissions from the solar project activity is zero as per ACM0002 methodology. Hence,  $PE_y = 0$ .

## 5.3 Leakage

Not Applicable, since leakage emissions from the solar project activity is zero as per ACM0002 methodology. Hence,  $LE_y = 0$ .

## 5.4 Net GHG Emission Reductions and Removals

Year	Baseline emissions or removals (tCO <sub>2e</sub> )	Project emissions or removals (tCO <sub>2e</sub> )	Leakage emissions (tCO <sub>2e</sub> )	Net GHG emission reductions or removals (tCO <sub>2e</sub> )
2021	67,207	0	0	67,207
2022	297,178	0	0	297,178

<b>Total</b>	364,385	0	0	364,385
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$$BE_y = EG_{PJ,y} * EF_{grid,CM,y}$$

Year wise emission reduction which is BE<sub>y</sub> is as follows.

Year	EG <sub>PJ, y</sub>	EF <sub>grid,CM,y</sub>	BE <sub>y</sub>
2021	71,742.000	0.9368	67,207
2022	317,229.616	0.9368	297,178
<b>Total</b>	<b>388,971.62</b>		<b>364,385.000</b>

It is to be noted here that, the estimated emission reduction to be achieved from the project activity for the current monitoring period is 326,372.0 tCO<sub>2</sub>e, whereas actual emission reductions achieved are 364,385 tCO<sub>2</sub>e, which is approximately 11.65 % higher 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. Hence, it is acceptable.

The actual PLF obtained during the current verification period is 19.88%,22.65% and 39.53%. As per the registered PDD PLF was considered 24.50%, which is higher than the estimated PLF.

	PLF At the time of Registration	PLF of current monitoring period	Equity IRR with respect to current MP	Benchmark	Result
Wind three	24.50%	19.88%	3.92%	14.07%	Not breaching
wind one	24.50%	22.65%	6.20%	14.07%	Not breaching
AGEMPL	24.50%	39.53%	13.33%	14.07%	Not breaching

Even after increase in PLF during this monitoring period, the equity IRR is not breaching and remains below the benchmark value of 14.07%.

Hence, it can be concluded that, due to increase in the PLF, there is no impact on the additionality of the project activity.

# APPENDIX 1: CALIBRATION DETAILS AND BREAKDOWN DETAILS

The details of the energy meters and their calibration details are provided in the table below.

Name of the SPVs	Feeder Details	Meter Serial No.	Accuracy Class	Make	Date of Calibration	Due date of calibration <sup>9</sup>
Wind Three Renergy Private Limited	Feeder- 2	LT-0702-A (Main Meter)	0.2 s	L & T	13/06/2019	12/06/2024
		LT-0716-A (Check Meter)			13/06/2019	12/06/2024
	Feeder- 4	LT-0746-A (Main Meter)			13/06/2019	12/06/2024
		LT-0750-A (Check Meter)			13/06/2019	12/06/2024
Wind One Renergy Private Limited	Feeder- 5	LT-0754-A (Main meter)	0.2 s	L & T	13/06/2019	12/06/2024
		LT-0756-A (Check Meter)			13/06/2019	12/06/2024
	Feeder- 9	LT-0782-A (Main Meter)			13/06/2019	12/06/2024
		LT-0783-A (Check Meter)			13/06/2019	12/06/2024
Adani Green Energy (MP) Limited	Feeder- 304	RE-0026-A (Main Meter)	0.2 s	L & T	07/06/2019	06/06/2024
		RE-0037-A (Check Meter)			27/05/2019	26/05/2024
	Feeder- 305	GJU77231 (Standby Meter)	0.2 s	Secure	11/06/2019	10/06/2024
		RE-0043-A (Main Meter)	0.2 s	L & T	27/05/2019	26/05/2024
		RE-0027-A (Check Meter)			07/06/2019	06/06/2024
		GJU77230 (Standby Meter)	0.2 s	Secure	11/06/2019	10/06/2024

## Breakdown Details

The break down details are provided in the table below.

Gen. Date	Customer Name	State	MW	Breakdown Remark	Formula Parameter	Breakdown Hrs.
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<sup>9</sup> At the time of commissioning, newly calibrated meters were installed. The calibration frequency is once in five years, and the calibrations are valid during the current monitoring period. Hence, no delay in error factor is applicable during the current monitoring period.

10-Aug-19	Wind Three Renergy Private Limited	Gujarat	50	Monthly Lubrication	S	1.00
11-Oct-19	Wind Three Renergy Private Limited	Gujarat	50	Grid Down from EB	GF	0.40
12-Nov-19	Wind Three Renergy Private Limited	Gujarat	50	Modification	S	1.70
13-Dec-19	Wind Three Renergy Private Limited	Gujarat	50	Monthly Lubrication	S	1.00
14-Jan-20	Wind Three Renergy Private Limited	Gujarat	50	Grid Down from EB	GF	0.10
15-Mar-20	Wind Three Renergy Private Limited	Gujarat	50	Grid Down from EB	GF	0.10
02-Apr-20	Wind Three Renergy Private Limited	Gujarat	50	Elec VoltageAsymmetry	U	0.20
03-May-20	Wind Three Renergy Private Limited	Gujarat	50	Grid Down from EB	GF	1.80
04-Sep-20	Wind Three Renergy Private Limited	Gujarat	50	Grid Down from EB	GF	1.80
05-Nov-20	Wind Three Renergy Private Limited	Gujarat	50	Elec Voltage Asymmetry	U	0.10
06-Dec-20	Wind Three Renergy Private Limited	Gujarat	50	Elec Yaw Sensor Err Stop	U	0.40
10-Jan-21	Wind Three Renergy Private Limited	Gujarat	50	Grid Down from EB	GF	1.00
11-Feb-21	Wind Three RenergyPrivate Limited	Gujarat	50	Grid Down from EB	GF	1.70
13-Mar-21	Wind Three Renergy Private Limited	Gujarat	50	Monthly Lubrication	S	0.10
15-Apr-21	Wind Three Renergy Private Limited	Gujarat	50	Grid Down from EB	GF	0.20
16-May-21	Wind Three Renergy Private Limited	Gujarat	50	Grid Down from EB	GF	0.10

05-Jun-21	Wind Three Renergy Private Limited	Gujarat	50	Elec VoltageAsymmetry	U	0.40
10-Jul-21	Wind Three Renergy Private Limited	Gujarat	50	FSS Fault	U	5.00
26-Aug-21	Wind Three Renergy Private Limited	Gujarat	50	Grid Down from EB	GF	0.70

Gen. Date	Customer Name	State	MW	Breakdown Remark	Formula Parameter	Breakdown Hrs.
11-Oct-19	Wind One Renergy Private Limited	Gujarat	50	Grid Down from EB	GF	0.40
12-Nov-19	Wind One Renergy Private Limited	Gujarat	50	Modification	S	1.70
13-Dec-19	Wind One Renergy Private Limited	Gujarat	50	Monthly Lubrication	S	1.00
14-Jan-20	Wind One Renergy Private Limited	Gujarat	50	Grid Down from EB	GF	0.10
15-Mar-20	Wind One Renergy Private Limited	Gujarat	50	Grid Down from EB	GF	0.10
02-Apr-20	Wind One RenergyPrivate Limited	Gujarat	50	Elec VoltageAsymmetry	U	0.20
03-May-20	Wind One Renergy Private Limited	Gujarat	50	Grid Down from EB	GF	1.80
04-Sep-20	Wind One Renergy Private Limited	Gujarat	50	Grid Down from EB	GF	1.80
05-Nov-20	Wind One RenergyPrivate Limited	Gujarat	50	Elec VoltageAsymmetry	U	0.10
06-Dec-20	Wind One Renergy Private Limited	Gujarat	50	Elec YawSensor ErrStop	U	0.40
10-Jan-21	Wind One Renergy Private Limited	Gujarat	50	Grid Down from EB	GF	1.00

11-Feb-21	Wind One Renergy Private Limited	Gujarat	50	Grid Down from EB	GF	1.70
13-Mar-21	Wind One RenergyPrivate Limited	Gujarat	50	Monthly Lubrication	S	0.10
15-Apr-21	Wind One Renergy Private Limited	Gujarat	50	Grid Down from EB	GF	0.20
16-May-21	Wind One Renergy Private Limited	Gujarat	50	Grid Down from EB	GF	0.10
05-Jun-21	Wind One Renergy Private Limited	Gujarat	50	Elec VoltageAsymmetry	U	0.40
10-Jul-21	Wind One Renergy Private Limited	Gujarat	50	FSS Fault	U	5.00
26-Aug-21	Wind One Renergy Private Limited	Gujarat	50	Grid Down from EB	GF	0.70

Gen. Date	Customer Name	State	MW	Breakdown Remark	Formula Parameter	Breakdown Hrs.
12-Nov-19	Adani Green Energy (MP) Limited	Gujarat	50	Modification	S	1.70
13-Dec-19	Adani Green Energy (MP) Limited	Gujarat	50	Monthly Lubrication	S	1.00
14-Jan-20	Adani Green Energy (MP) Limited	Gujarat	50	Grid Down from EB	GF	0.10
15-Mar-20	Adani Green Energy (MP) Limited	Gujarat	50	Grid Down from EB	GF	0.10
02-Apr-20	Adani Green Energy(MP) Limited	Gujarat	50	Elec VoltageAsymmetry	U	0.20
03-May-20	Adani Green Energy (MP) Limited	Gujarat	50	Grid Down from EB	GF	1.80
04-Sep-20	Adani Green Energy (MP) Limited	Gujarat	50	Grid Down from EB	GF	1.80
05-Nov-20	Adani Green Energy(MP) Limited	Gujarat	50	Elec VoltageAsymmetry	U	0.10

06-Dec-20	Adani Green Energy (MP) Limited	Gujarat	50	Elec YawSensor ErrStop	U	0.40
10-Jan-21	Adani Green Energy (MP) Limited	Gujarat	50	Grid Down from EB	GF	1.00
11-Feb-21	Adani Green Energy (MP) Limited	Gujarat	50	Grid Down from EB	GF	1.70
13-Mar-21	Adani Green Energy (MP) Limited	Gujarat	50	Monthly Lubrication	S	0.10
15-Apr-21	Adani Green Energy (MP) Limited	Gujarat	50	Grid Down from EB	GF	0.20
16-May-21	Adani Green Energy (MP) Limited	Gujarat	50	Grid Down from EB	GF	0.10
05-Jun-21	Adani Green Energy (MP) Limited	Gujarat	50	Elec VoltageAsymmetry	U	0.40
10-Jul-21	Adani Green Energy (MP) Limited	Gujarat	50	FSS Fault	U	5.00
26-Aug-21	Adani Green Energy (MP) Limited	Gujarat	50	Grid Down from EB	GF	0.70