

21.8 MW WIND POWER PROJECT AT JANGI VANDHIYA, GUJARAT BY POWERICA LIMITED



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Document Prepared By EKI Energy Services Limited

Project Title	21.8 MW Wind Power Project at Jangi Vandhiya, Gujarat by Powerica Limited
Version	02
Report ID	PL1823
Date of Issue	12-December-2018
Project ID	PL1823
Monitoring Period	12 June 2014 to 30 September 2018 (Inclusive of First and last day)
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1 PROJECT DETAILS

1.1 Summary Description of the Implementation Status of the Project

The project activity involves installation and operation of 11 WTGs of 2.0 MW comprising a total capacity of 22.0 MW. The project activity utilizes V100 model of WTGs supplied of Vestas. All the WTGs involved in the project are commissioned at Bhachau Taluka of Kutch district of Gujarat. The project aims at providing electricity to the state of Gujarat by effective utilization of renewable resources. The electricity generated from the project activity is supplied to NEWNE regional grid of India. Powerica Limited has developed this project keeping in consideration of the funding available under the Clean Development Mechanism (CDM) of the United Nations Framework Convention on Climate Change (UNFCCC). This is because the project activity qualifies as a CDM project as it would be feeding clean power to the electricity grid (North-East-West-North East or NEWNE grid, India) thereby helping in significant reduction of GHG emissions.

The technical details of the WTGs involved in the project activity are as below.

Parameters	Value
Make	Vestas
Model	V-100
Rated Power	2000 KW
Rotor diameter	100 m
Swept area	7850 m ²
Cut in wind speed	3 m/s
Rated wind speed	12 m/s
Cut out wind speed	20 m/s
No. of Blades	3
Rotor Speed	14.4 rpm
Hub Height	80 m
Generator Type	4-pole (50 Hz) doubly fed generator, slip rings
Gear Box	Type two planetary stages and one helical stage
Tower Type	tubular steel tower

All the WTGs involved in the project activity are already commissioned and operational. The WTGs are under operation since the date of commissioning and no event has been identified which may impact GHG emission reduction. The commissioning dates of all the WTGs are provided as below.

SI. No	WTG	Capacity of WTG (MW)	Commissioning Date
1	VWT/2000/14-15/3444	2	12/06/2014
2	VWT/2000/14-15/3447	2	12/06/2014
3	VWT/2000/14-15/3448	2	12/06/2014
4	VWT/2000/14-15/3449	2	12/06/2014

5	VWT/2000/14-15/3450	2	12/06/2014
6	VWT/2000/14-15/3445	2	14/06/2014
7	VWT/2000/14-15/3452	2	14/06/2014
8	VWT/2000/14-15/3451	2	14/06/2014
9	VWT/2000/14-15/3442	2	25/06/2014
10	VWT/2000/14-15/3443	2	25/06/2014
11	VWT/2000/14-15/3446	2	08/07/2014

The total emission reductions achieved by this project activity in the monitoring period from 12 June 2014 to 30 September 2018 is 203,799 tCO₂e.

1.2 Sectoral Scope and Project Type

The project activity falls under

Sectoral Scope : 01 - Energy industries (renewable / nonrenewable sources)
Project Type : I - Renewable Energy Projects
Title : ACM0002 ver. 15 - Grid-connected electricity generation from renewable sources

This project is not a grouped project activity.

1.3 Project Proponent

Organization name	Powerica Limited
Contact person	Mr Pradeep Gupta
Title	Head of Wind Energy
Address	601, Dakshina Building, Sector -11, CBD Belapur, Navi Mumbai – 400 016, Maharashtra, India
Telephone	-
Email	-

1.4 Other Entities Involved in the Project

Organization name	EKI Energy Services Limited
Role in the project	Project Consultant
Contact person	Mr. Ramkrishna Patil
Title	GM – Operations
Address	Office No. 201, EnKing Embassy, Plot No. 48, Scheme No. 78, Part II, Vijay Nagar INDORE – 452010, India.
Telephone	+91 9096562065

Email	ramkrishna.patil@enkingint.org
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1.5 Project Start Date

The project start date for this project is said to be is 12 June 2014. This is because the first WTG was commissioned on 12 June 2014.

1.6 Project Crediting Period

The project is registered under Clean Development Mechanism (CDM) of UNFCCC with 10 years crediting period (Fixed) (Reference No: 10042) on 17 October 2014¹. The Crediting period of the project under CDM started on 17 October 2014 and ended on 16 October 2024.

The project has begun generating GHG emission reductions from commissioning. The crediting period for VCS began on 12 June 2014 and ended on 11 June 2024.

The project proponent will also not claim GHG emission reductions under two schemes for the same period.

1.7 Project Location

The project is located Taluka: Bhachu, District: Kutch, State: Gujarat, India

The detail information on the WTG locations along with their individual geographical co-ordinates is provided below.

S.I No	WTG No.	Village	Latitude	Longitude
1	JW04	Jangi	N23 12 41.3	E70 34 28.8
2	JW11	Jangi	N23 13 05.5	E70 32 15.6
3	JW33	Lakhapar	N23 12 46.6	E70 38 00.0
4	JW41	Vadhiya	N23 12 18.3	E70 35 59.7
5	JW50	Lakhdhargadh	N23 14 52.2	E70 35 41.2
6	JW52	Godpar	N23 13 06.3	E70 36 58.4
7	JW53	Lakhdhargadh	N23 14 49.6	E70 34 59.9
8	JW60	Lakhdhargadh	N23 14 26.6	E70 35 07.8
9	JW68	Lakhdhargadh	N23 15 10.3	E70 35 56.3
10	JW69	Vadhiya	N23 14 23.1	E70 36 26.9
11	JW72	Vadhiya	N23 14 24.5	E70 37 02.3

¹ <https://cdm.unfccc.int/Projects/DB/RWTUV1411994965.49/view>

1.8 Title and Reference of Methodology

ACM0002 ver. 15 - Consolidated baseline methodology for grid-connected electricity generation from renewable sources

The methodology also refers to the latest approved versions of:

- Tool for the demonstration and assessment of additionality, Version 07.0.0²
- Combined tool to identify the baseline scenario and demonstrate additionality, Version 05.0.0³
- Tool to calculate project or leakage CO₂ emissions from fossil fuel combustion, Version 02⁴
- Tool to calculate the emission factor for an electricity system, Version 04.0⁵

1.9 Other Programs

Include the following information, as applicable:

- Emission Trading Programs and Other Binding Limits: The PP has not applied this project in any Emission Trading Programs and other Binding Limits.
- Other Forms of Environmental Credit: The PP has not applied this project in any other form of environmental credits.
- Participation under Other GHG Programs: The PP has participated under CDM mechanism of UNFCCC. The UN reference id 10042⁶ of program with this project activity. The PP would not consider the credit from any other mechanism for the current monitoring period. The undertaking is provided to confirm that there is no any double accounting for current monitoring period.

1.10 Sustainable Development

Contribution to sustainable development:

Ministry of Environment and Forests, 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 would help in generating employment opportunities during the construction and operation phases. The project activity leads to development in infrastructure in the region like development of roads and also may promote business with improved power generation.

² <http://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-01-v7.0.0.pdf>

³ <http://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-02-v5.0.0.pdf>

⁴ <http://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-03-v2.pdf>

⁵ <http://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-03-v2.pdf>

⁶ <https://cdm.unfccc.int/Projects/DB/RWTUV1411994965.49/view>

- **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 help to reduce the demand supply gap in the state. Due to generation of employment opportunities, the economic condition of project activity region will be improved.
- **Technological well-being:** The successful operation of project activity would lead to promotion of wind based power generation and would encourage other entrepreneurs to participate in similar projects.
- **Environmental well-being:** The project activity 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.

2 IMPLEMENTATION STATUS

2.1 Implementation Status of the Project Activity

All the WTGs involved in the project activity are already commissioned and operational. The WTGs are under operation since the date of commissioning and no event has been identified which may impact GHG emission reduction. The commissioning dates of all the WTGs and technical specifications of WTGs are provided in section 1.1.

The project activity is a greenfield project for generation of electrical energy using wind which is a renewable source of energy. In wind energy generation, kinetic energy of the wind is converted into mechanical energy and subsequently into electrical energy. Wind turbines capture the wind's energy with three propeller-like blades, which are mounted on a rotor, to generate electricity. The turbines sit high atop towers, taking advantage of the stronger and less turbulent wind. As the wind blows through the blades of the windmill, a pocket of low-pressure air forms on the downwind side of the blade. The low-pressure air pocket then pulls the blade towards it, causing the rotor to spin. The rotor turns the shaft that further spins the connected generator. The spinning of this generator produces the required electricity. Since power is generated from wind energy, no emissions are attributed to the project emissions and due to that equivalent amount of fossil-fuel dominated grid can be displaced due to the project activity.

Emission reductions are claimed on the net electrical energy that is supplied to grid which is metered using meters located at the electrical yard of the respective WTGs. These electrical energy meters are electronic tri-vector meters of appropriate accuracy class. Since these meters are not designed to measure high voltages and currents as generated in the WTG, the WTG output is connected to these meters via transformers (CT/PT) for stepping down the generated voltage and current to ranges which the meters can record. As such, these meters have a multiplying factor which when multiplied to the meter reading provides the actual amount of electricity generated. The technology providers for the project have additionally installed an LCS meter at the WTG controller.

The electricity generated is monitored using electrical meters which provide a measure of the actual electrical energy that would have been sourced from a fossil-fuel based power plants in the

absence of the project activity. Hence, the fossil-fuel power based grid is the baseline for the project activity.

2.2 Deviations

2.2.1 Methodology Deviations

There is no request for deviation applied during this monitoring period.

2.2.2 Project Description Deviations

The below deviation has been requested for the project activity

Deviation 1 –

It should be noted that in the registered CDM-PDD two monitoring parameters are listed in Section B.7.1 i.e. $EG_{\text{facility},y}$ and $EG_{\text{LCS},y}$, however in the Monitoring Report only one parameter i.e. $EG_{\text{facility},y}$ has been mentioned as only this parameter is used for ER calculations. The meters used for the measurement at the substation monitor the export and import value separately and also display the net reading by subtracting the import reading from the export reading. Since the parameter mentioned in Invoice is the net value of the electricity supplied to the grid, and no separate parameters i.e. export and import of electricity are mentioned in Invoice, the net value mentioned therein has been included in the Monitoring Report and this value has been considered for Emission Reduction calculation. Thus the accuracy of the measurement is not affected.

The other parameter $EG_{\text{LCS},y}$ Summarised quantity of electricity generation recorded at LCS of each WTGs is not used in ER calculations. Thus this parameter is not mentioned in monitoring plan. The exclusion of this parameter does not have any impact on ER calculations.

2.3 Grouped Project

This project activity is not a grouped project activity.

2.4 Safeguards

The project does not involve any potential negative environmental and socio economic impacts and hence this criteria is not applicable to this project activity

2.4.1 No Net Harm

The project does not involve any potential negative environmental and socio economic impacts and hence this criterion is not applicable to this project activity.

2.4.2 Local Stakeholder Consultation

Local Stakeholder consultation had been carried out during CDM registration of this project activity. There were no comments that required follow up action from PP. The PP also placed a grievance register onsite in where the stakeholder can put down his/her complain and the same if found genuine will be addressed immediately.

3 DATA AND PARAMETERS

3.1 Data and Parameters Available at Validation

Data / Parameter	$EF_{Grid,CM,y}$
Data unit	tCO2/MWh
Description	Combined Margin Grid emission factor
Source of data	Central Electricity Authority:CO2 Emission Database CEA CO2 Baseline database Version 09
Value applied	0.9750
Justification of choice of data or description of measurement methods and procedures applied	<p>The combined margin emissions factor is calculated as follows:</p> $EF_{grid,CM,y} = EF_{grid,OM,y} * wOM + EF_{grid,BM,y} * wBM$ <p>The following default values should be used for wOM and wBM:</p> <p>For Wind power generation project activities: wOM = 0.75 and wBM = 0.25 for the selected crediting period</p> <p>Data compiled in CEA CO₂ CDM database is in line with the requirements Version 04.0.0 of "Tool to calculate the emission factor for an electricity system".</p>
Purpose of the data	This data is used for the calculation of the Baseline Emissions
Comments	The Combined Margin is calculated ex ante and fixed for the crediting period.

Data / Parameter	$EF_{Grid,OM,y}$
Data unit	tCO2/MWh
Description	Operating margin CO2 emission factor of NEWNE grid
Source of data	Central Electricity Authority:CO2 Emission Database CEA CO2 Baseline database Version 09
Value applied	0.9776
Justification of choice of data or description of measurement methods and procedures applied	<p>The operating margin emission factor is a 3-year generation-weighted average data, based on the most recent data available on CEA database at the time of submission of the CDM-PDD to the DOE for validation. Data compiled in CEA CO₂ CDM database is in line with the requirements Version 04.0.0 of "Tool to calculate the emission factor for an electricity system".</p>
Purpose of the data	This data is used for the calculation of the Baseline

	Emissions
Comments	The Operating Margin is calculated ex ante and fixed for the crediting period.

Data / Parameter	EF_{Grid, BM, y}
Data unit	tCO ₂ /MWh
Description	CO2 Build Margin emission factor of the grid
Source of data	Central Electricity Authority:CO2 Emission Database CEA CO2 Baseline database Version 09
Value applied	0.9673
Justification of choice of data or description of measurement methods and procedures applied	The build margin emission factor is the most recent data available from CEA CO2 Baseline database. Data compiled in CEA CO2 CDM database is in line with the requirements Version 04.0.0 of "Tool to calculate the emission factor for an electricity system".
Purpose of the data	This data is used for the calculation of the Baseline Emissions
Comments	The Build Margin is calculated ex ante and fixed for the crediting period.

3.2 Data and Parameters Monitored

Data / Parameter	EG_{facility, y}
Data unit	MWh
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	Measured & Calculated
Frequency of monitoring/recording	Monthly
Value monitored	209,025.00
Monitoring equipment	Monitoring Equipment: Monitored through the main meter and check meter readings. Both the energy meters are bi-directional tri-vector meters. Monitoring: a) At WTG yard: Electrical Energy Meters which are electronic tri-vector meters of accuracy class 0.5s or

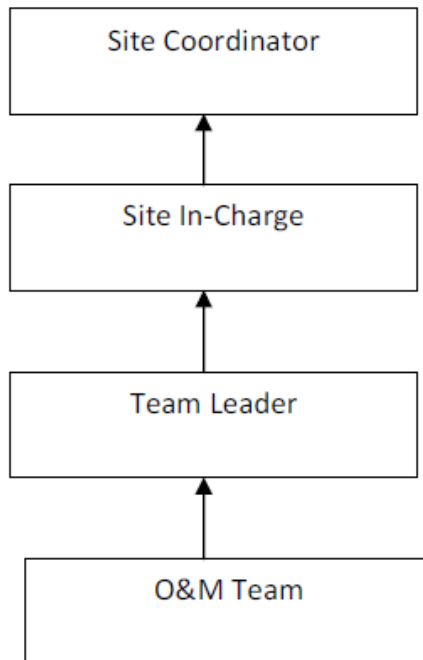
	<p>above</p> <p>b) At substation: Electrical Energy Meters which are bidirectional electronic tri-vector ABT meter of accuracy class 0.5s or above.</p> <p>The meters are calibrated once in three year. For meter details and calibration, please refer Appendix 1 of MR.</p>
QA/QC procedures to be applied	The Quantity of net electricity generation from the certificates for share of electricity are cross-checked with the invoices for the sale of power by Powerica. The Energy Meters are calibrated once in 3 year.
Purpose of the data	This data is used for the calculation of the Baseline Emissions
Calculation method	-
Comments	Data archived: Crediting period + 2 yrs

3.3 Monitoring Plan

The project activity is in accordance with approved large scale methodology ACM 0002, Version 15.0, and therefore, can use the monitoring methodology for the same.

The monitoring methodology specified in the methodology requires that the project-monitoring plan to consist of metering the electricity supplied to the grid by the renewable technology. In order to monitor the mitigation of GHG due to the project activity, the total energy exported needs to be measured. The net energy supplied to grid by the project activity multiplied by emission factor for regional grid, would form the baseline for the project activity.

Since the baseline emission factor is based on an ex-ante determination, monitoring of this parameter is not required. The sole parameter for monitoring is the electricity exported to the grid. The Project is operated and managed by Vestas Wind Technology India Private Limited (Vestas). Vestas has a designated Site-In-Charge (O&M) on site who is responsible for monitoring the electricity exported from the project activity. The organizational structure of the O&M team by Vestas is as follows:



The roles and responsibilities of the O&M team may be elaborated as follows:

O&M Team: The team comprises of site engineers who are directly responsible for carrying out the O & M activity of WTG. They execute the preventive maintenance and attend to break downs as per O&M Manual & Procedures. They respond to breakdown calls and resolve customer complaints. They record all the readings and prepare documentations for Reports, Logs and Daily Generation Reports.

Team Leader: He leads the O&M team and is responsible for attending to the unscheduled breakdown of WTGs and for ensuring that WTG should be restored at earliest. He ensures the proper reading, recording and monitoring of the Generation.

Site-Incharge: He is responsible for the entire site. He has to take timely corrective measures/action to ensure that overall performance of site is met and delivered. He is responsible for the individual site. He executes the preventive maintenance and attends to break downs as per O&M Manual & Procedures. He also checks the daily Generation reports for all the WTGs.

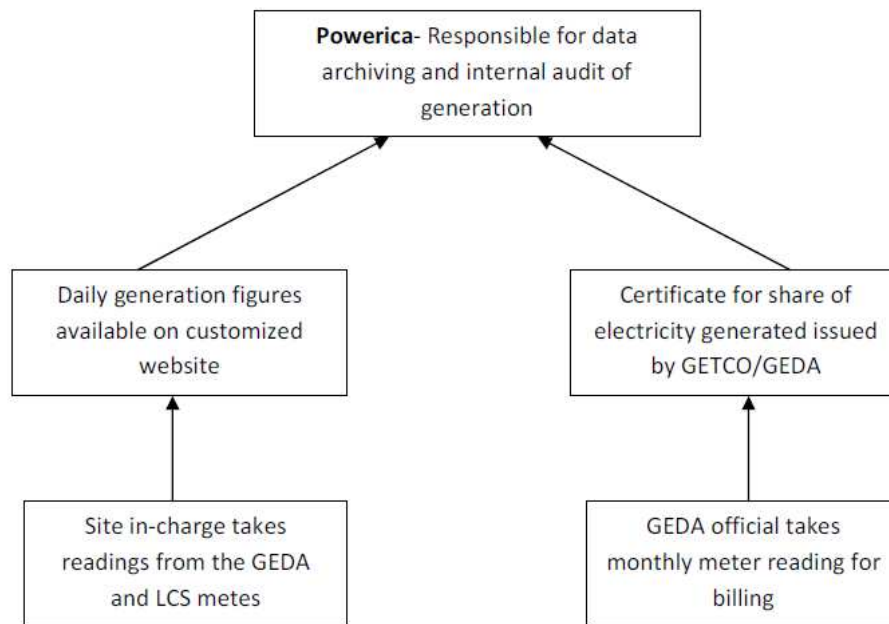
Site Co-ordinator: He is in-charge of overall O&M activities of site. The responsibilities include ensuring complete documentation of the Generation of the site, on-time service delivery, timely response to breakdowns and efficient manpower management for the site.

Further, all new technicians on site are trained by Vestas. Also, the O&M personnel are trained regularly in order to improve their technical skills.

Personal Training:

The training for operating and maintaining the plant are provided to the O&M team whenever there would be necessity or any technological up gradation

The overall flow of information has been depicted using the following hierarchical structure:



Monitoring Process at Gujarat

Metering of wind power is done as under:

- Joint meter reading is taken at substation meter by representative of GETCO (Gujarat Electricity Transmission Company) and O&M service provider (on behalf of individual wind farm owners). Let the total generation recorded for particular month is 'X' units in sub-station meter.
- Joint meter reading is taken at Local Meter-(transformer yard meter of each WTG) by representative of GETCO (Gujarat Electricity Transmission Company) and O&M service provider (on behalf of individual wind farm owners). Let us assume total generation of Powerica recorded for particular month is 'Y1' units.
- Similarly joint meter reading for other wind farm owners is also taken. Let the generation of individual owner recorded for particular month are 'Y2, Y3,.....Yn' units.
- GETCO distributes 'X' to individual wind farm owners using following formula and issues monthly certificates.
- For Powerica, net units calculated for billing = $X * Y1 / \sum Yn$
- It must be noted here that the meter readings as mentioned above are calculated as the product of meter multiplication factor and the difference of the current and previous meter readings

Based on the above procedure, the Monthly Wind Energy Certificates are provided to the project proponent. This is to be noted that the detail procedure of monitoring is illustrated here for the sake of understanding; for the preparation of monitoring report during periodic verifications, only the net electricity generation value mentioned in monthly wind energy certificates shall be directly used for emission reduction calculation. No other parameters as explained above shall be used and presented in the monitoring report.

Emergency preparedness:

In case Main meter or Check meter is found to be outside the acceptable limits of accuracy or faulty or not functioning properly, it will be repaired, recalibrated or replaced as soon as possible. In the event that the Main meter is not in service as a result of maintenance, repairs or testing, the Check meter will be used for readings. No such event occurred during current monitoring period.

4 QUANTIFICATION OF GHG EMISSION REDUCTIONS AND REMOVALS

4.1 Baseline Emissions

The emission factor value has been fixed Ex-ante and the same shall be used for the monitoring period. Net Electricity Generated is obtained by deducting total import (from grid) from total export (to grid). These values are taken from the "Certificate for Share of Electricity Generated by Wind Farm" issued by Gujarat Energy Transmission Corporation Limited (GETCO). This statement is issued on a monthly basis

Baseline emissions are calculated by multiplying the Net electricity exported to the grid with net baseline emission factor, as given in the CDM PDD.

$BE_y = \text{Baseline Emission Factor (EF}_{\text{Grid,CM,y}}) \times (EG_{\text{facility,y}})$ Where,

$$\begin{aligned} BE_y &= \text{Baseline Emissions (tons/year)} \\ EG_{\text{facility,y}} &= \text{Net Electricity exported to grid (MWh)} \\ BE_y &= (EF_{\text{Grid,CM,y}}) \times (EG_{\text{BL,y}}) \\ &= 0.9750 \text{ tCO}_2 / \text{MWh} \times 209,025 \text{ MWh} \\ &= 203,799 \text{ tCO}_2 \text{ (Rounded Down)} \end{aligned}$$

The emission reductions are calculated as per the equation:

$$ER = BE_y - PE_y$$

ER – Emission Reduction (tCO₂/year)
 BE_y – Baseline Emissions (tCO₂/year)
 PE_y – Project Emissions (tCO₂/year)

4.2 Project Emissions

The project activity involves in harnessing wind power. So the emissions from the project are zero. Hence. $PE_y = 0 \text{ tCO}_2/\text{year}$

4.3 Leakage

4.4 As per registered PDD leakage is neglected. Net GHG Emission Reductions and Removals

Year	Baseline emissions or removals (tCO ₂ e)	Project emissions or removals (tCO ₂ e)	Net GHG emission reductions or removals (tCO ₂ e)
2014	20,949	0	20,949
2015	48,222	0	48,222
2016	45,338	0	45,338
2017	48,341	0	48,341
2018	40,949	0	40,949
Total	203,799	0	203,799

The actual VER is -6% lower than the estimated VER. This variation is majorly due to the variations in wind flow pattern, grid availability and other parameters which are not in the control of PP. This is also affected due the application of error factor. The above variation is conservative.

APPENDIX 1: CALIBRATION DETAILS

The project activity Yard meter calibration details are as below

WTG Name	Meter Serial Number	Date of Commissioning	Year 2016	Due date of calibration
JW04	GJU65932	25/06/2014	01/04/2016	01/04/2019
JW11	GJU65931	25/06/2014	01/04/2016	01/04/2019
VW33	GJU65934	12/06/2014	01/04/2016	01/04/2019
VW41	GJU65678	14/06/2014	01/04/2016	01/04/2019
VW50	GJU65933	08/07/2014	01/04/2016	01/04/2019
VW52	GJU65935	14/06/2014	01/04/2016	01/04/2019
VW53	GJU65930	12/06/2014	01/04/2016	01/04/2019
VW60	GJU65936	12/06/2014	01/04/2016	01/04/2019
VW68	GJU65937	12/06/2014	01/04/2016	01/04/2019
VW69	GJU65684	12/06/2014	01/04/2016	01/04/2019
VW72	GJU65685	14/06/2014	01/04/2016	01/04/2019

Error factor have been applied from 12/06/2014 to 31/03/2016 due to unavailability of the meter test reports. However all the meters having latest calibration on 01/04/2016 and having calibration validity upto 3 years. All meters are of Secure Make and 0.2s accuracy class.

APPENDIX 2: BREAK DOWN DETAILS

The project activity major break down detail are as below

Turbine	Duration	Event	Event text	Comment	Date from	Date to
VW33 [204389]	55:17	309	Pause over RCS 0	Copper cap & strip fixing work.	24/4/2016	26/4/2016
VW69 [204390]	78:15	309	Pause over RCS 0	Copper cap & strip fixing work.	9/5/2016	12/5/2016
VW68 [204391]	60:53	309	Pause over RCS 0	Copper cap & strip fixing work.	4/5/2016	6/5/2016
VW53 [204392]	76:15	309	Pause over RCS 0	Copper cap & strip fixing work.	29/4/2016	2/5/2016
VW60 [204393]	54:25	309	Pause over RCS 0	Copper cap & strip fixing work.	9/5/2016	11/5/2016
VW41 [204394]	55:30	309	Pause over RCS 0	Copper cap & strip fixing work.	14/3/2016	16/3/2016
VW52 [204395]	54:54	309	Pause over RCS 0	Copper cap & strip fixing work.	13/5/2016	15/5/2016
VW72 [204396]	49:25	315	ExEx low voltage L2: 1V	trip due to e/f & o/c relay oprated.	31/10/2014	2/11/2014
VW72 [204396]	58:39	309	Pause over RCS 0	copper cap & strip installation work	7/4/2017	9/4/2017
JW11 [204397]	56:56	315	ExEx low voltage L_: ___V	Pole fallen down due to heavy rain & high wind speed.	30/7/2015	1/8/2015
JW11 [204397]	73:08	309	Pause over RCS 0	Blade Copper Cap & Strip Fixing Work	28/3/2017	31/3/2017
JW11 [204397]	56:54	315	ExEx low voltage L_: ___V	220/33 KV SS FE_11 Trip Due To O/C and E/F and trip relay Operated ,Line Side R- Phase LA Failure &Government tower line Falling down on 33 KV Ht line..	14/6/2018	16/6/2018
VW50 [204398]	65:02	352	Q7 breaker open	(352) Q7 Breaker Open fault attending work	13/7/2014	16/7/2014
VW50 [204398]	58:08	309	Pause over RCS 0	Copper cap & strip installation work.	11/4/2017	13/4/2017
JW04 [204399]	58:10	309	Pause over RCS 0	Copper cap & strip installation work.	1/4/2017	3/4/2017