

TEMPLATE

MONITORING REPORT

PUBLICATION DATE **14.10.2020**

VERSION **v. 1.1**

RELATED SUPPORT - **TEMPLATE GUIDE Monitoring Report v. 1.1**

This document contains the following Sections

Key Project Information

A - Description of project

B - Implementation of project

C - Description of monitoring system applied by the project

D - Data and parameters

E - Calculation of SDG Impacts

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KEY PROJECT INFORMATION

Key Project Information

GS ID (s) of Project (s)	GS2483
Title of the project (s) covered by monitoring report	Enercon Wind Farm (Hindustan) Ltd in Rajasthan
Version number of the PDD/VPA-DD (s) applicable to this monitoring report	28/01/2014, Version 2
Version number of the monitoring report	1.3
Completion date of the monitoring report	08/12/2022
Date of project design certification	19/06/2014 (GS Registration Date)
Date of Last Annual Report	NA
Monitoring period number	4
Duration of this monitoring period	01/09/2017 to 14/03/2020 (Inclusive of both the dates)
Project Representative	M/s Wind World (India) Limited Numerco Limited Statkraft Markets GmbH ACT Financial Solutions B.V. First Climate Markets A.G.
Host Country	India
Activity Requirements applied	☐ Community Services Activities ☒ Renewable Energy Activities ☐ Land Use and Forestry Activities/Risks & Capacities ☐ N/A
Methodology (ies) applied and version number	Consolidated methodology for grid-connected electricity generation from renewable sources, ACM0002, Version 6
Product Requirements applied	☒ GHG Emissions Reduction & Sequestration ☐ Renewable Energy Label ☐ N/A

Table 1 - Sustainable Development Contributions Achieved

Sustainable Development Goals Targeted	SDG Impact	Amount Achieved	Units/ Products
SDG 3	Good health and well being	6	Number of initiatives, events and programmes, primary Health and Education
SDG 7	Affordable and Clean Energy	161608.67 MWh	MWh
SDG 8	Decent Work and Economic Growth	6 Training 7 employees	Numbers
SDG 13	Climate Action	141,225	tCO2e/GS CERs

Table 2 – Product Vintages

		Amount Achieved (tCO2e)
Start Dates	End Dates	CERs
01/09/2017	31/12/2017	10,280
01/01/2018	31/12/2018	58,613
01/01/2019	31/12/2019	62,397
01/01/2020	14/03/2020	9,935

SECTION A. DESCRIPTION OF PROJECT

A.1. General description of project

(a) >> Purpose of the project activity and the measures taken for GHG emission reductions or net anthropogenic GHG removals by sinks;

The purpose of the project activity is to utilize renewable wind energy for generation of electricity. The project activity replaces anthropogenic emissions of greenhouse gases (GHG's) into the atmosphere, which is estimated to be approximately 141,225 tCO_{2e} for this monitoring period, by displacing the equivalent amount of electricity generation through the operation of existing fuel mix in the grid comprising mainly fossil fuel based power plants and future capacity expansions connected to the grid. In the absence of the project activity the equivalent amount of electricity would have been generated from the connected/ new power plants in the Indian grid, which are/ will be predominantly based on fossil fuels. Whereas the electricity generation from operation of Wind Energy Convertors (WEC's) is emission free.

(b) Brief description of the installed technology and equipment;

The Project involves 75-wind energy converters (WECs) of 800 kW E-48 with internal electrical lines connecting the Project with local evacuation facility. The WECs generates 3-phase power at 400V, which is stepped up to 33 KV. The Project can operate in the frequency range of 47.5–51.5 Hz and in the voltage range of 400 V ± 12.5%. The other salient features of the state-of-art-technology are referred in Section B.1. The line diagram of wind farm including metering points and substations is attached as Annex 1.

(c) Relevant dates for the project activity (e.g. construction, commissioning, continued operation periods, etc.);

The first WEC under the project activity was commissioned on 26 November 2006 and the last WEC under the project activity was commissioned on 25 December 2006. The expected operational lifetime of the project is for 20 years. The length of the Crediting period of the project activity as per registered PDD is 10 years (Fixed). As per the Registered PDD, the Crediting period Start Date is estimated 01 November 2007. However, since the Project was registered on 15 March 2010, the length of crediting period is from 15 Mar 2010 to 14 Mar 2020 (Fixed).

The time frame for this monitoring period is from 01/09/2017 to 14/03/2020.

(d) Total GHG emission reductions or net anthropogenic GHG removals by sinks achieved in this monitoring period.

The total emission reductions achieved under this monitoring period (01/09/2017 to 14/03/2020) is 141,225 tCO₂.

A.2. Location of project

(a) >> Host Party(ies);
India

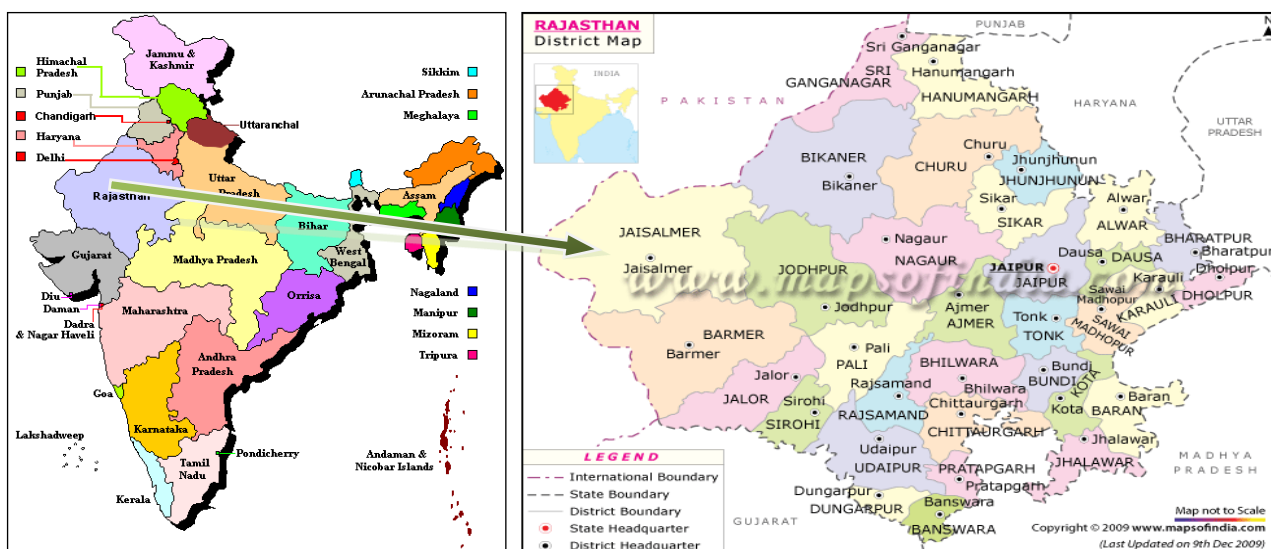
(b) Region/State/Province, etc.;
Northern Region/Rajasthan State

(c) City/Town/Community, etc.;

The Project is located at Kita and Pithodai Ki Dhani village, in Jaisalmer District of Rajasthan state in India.

(d) Physical/ Geographical location.

The project area extends between latitude 26° 40' 47.5" & 26° 45' 48.3" North and longitude 70° 58' 19.3" & 71° 3' 32.5" East. The Project is connected to 220kV AKAL-BHU/400kV GSS AKAL, Jaisalmer RRVN substation. The sites are located at a distance of 25 km from Jaisalmer by road. The nearest railway station is at Jaisalmer.



Individual WEG location numbers and coordinates are detailed out in below Table 1: -

S. No	EWHPL UNIQUE ID	Loc No	Latitude			Longitude		
			Deg.	Minute	Second	Deg.	Minute	Second
1	EWHPL 01	322	26	40	47.5	70	58	58.2
2	EWHPL 02	323	26	40	55.3	70	58	54.6
3	EWHPL 03	145	26	41	2.5	70	58	49.5
4	EWHPL 04	146	26	41	7.7	70	58	43.9
5	EWHPL 05	147	26	41	12.8	70	58	38.4
6	EWHPL 06	148	26	41	18	70	58	32.8
7	EWHPL 07	150	26	41	27	70	58	48.3
8	EWHPL 08	151	26	41	32.1	70	58	42.7
9	EWHPL 09	152	26	41	37.3	70	58	37.2
10	EWHPL 10	153	26	41	38.5	70	59	8.6
11	EWHPL 11	154	26	41	43.6	70	59	3.1
12	EWHPL 12	155	26	41	48	70	58	57.5
13	EWHPL 13	156	26	41	54.1	70	58	52.1
14	EWHPL 14	157	26	41	56.6	70	58	41.5
15	EWHPL 15	307	26	42	12	70	58	24.8
16	EWHPL16	306	26	42	17.2	70	58	19.3
17	EWHPL 17	300	26	42	47.4	70	58	24.4
18	EWHPL 18	301	26	42	43.9	70	58	30.7
19	EWHPL 19	304	26	42	26.8	70	58	46.6
20	EWHPL 20	305	26	42	21.7	70	58	52.2
21	EWHPL 21	161	26	42	16.5	70	58	57.7
22	EWHPL 22	160	26	42	9	70	59	2.2
23	EWHPL 23	159	26	42	1.3	70	59	6.7
24	EWHPL 24	324	26	42	5.7	70	59	23.9
25	EWHPL 25	167	26	42	38.3	70	59	0.2
26	EWHPL 26	168	26	42	42.9	70	58	56.3
27	EWHPL 27	169	26	42	49.6	70	58	54.4
28	EWHPL 28	170	26	42	56.5	70	58	52.7
29	EWHPL 29	326	26	43	22.4	70	58	50.2
30	EWHPL 30	177	26	42	54.5	70	59	29.3

31	EWHPL 31	178	26	42	49.4	70	59	34.9
32	EWHPL 32	179	26	42	44.2	70	59	40.5
33	EWHPL 33	181	26	42	32.2	70	59	50.9
34	EWHPL 34	183	26	42	59	70	59	50.6
35	EWHPL 35	184	26	43	5.8	70	59	45.8
36	EWHPL 36	186	26	43	17.8	70	59	35.4
37	EWHPL 37	190	26	43	25.1	70	59	50.1
38	EWHPL 38	191	26	43	18.3	70	59	54.9
39	EWHPL 39	192	26	43	13.2	71	0	0.5
40	EWHPL 40	193	26	43	8	71	0	6.1
41	EWHPL 41	194	26	43	2.9	71	0	11.6
42	EWHPL 43	218	26	45	31.3	71	0	32
43	EWHPL 42	219	26	45	17.2	71	0	23.1
44	EWHPL 44	220	26	44	52.6	71	0	38.2
45	EWHPL 45	221	26	44	52.5	71	0	47.2
46	EWHPL 46	222	26	44	45.9	71	0	55.9
47	EWHPL 47	223	26	44	56.1	71	1	5.4
48	EWHPL 48	224	26	45	1.9	71	1	16.3
49	EWHPL 49	225	26	44	43.9	71	1	23
50	EWHPL 50	226	26	44	38.8	71	1	35.9
51	EWHPL 51	230	26	44	24.9	71	1	55.5
52	EWHPL 52	232	26	44	19.9	71	2	1.7
53	EWHPL 53	233	26	44	14.1	71	2	7.3
54	EWHPL 54	329	26	44	30.1	71	2	16
55	EWHPL 55	234	26	44	20.5	71	2	27.9
56	EWHPL 56	236	26	43	57.4	71	2	22.2
57	EWHPL 57	237	26	43	55.8	71	2	30.9
58	EWHPL 58	238	26	43	56.9	71	2	39.7
59	EWHPL 59	328	26	44	8.9	71	2	56.5
60	EWHPL 60	241	26	43	58.7	71	2	59.9
61	EWHPL 61	242	26	43	51.8	71	3	5.1
62	EWHPL 62	245	26	44	30.5	71	3	32.5
63	EWHPL 63	246	26	44	32.5	71	3	22.5
64	EWHPL 64	249	26	45	9.4	71	3	14.1
65	EWHP 65	302	26	44	51.4	71	2	56.1
66	EWHPL 66	250	26	44	58.1	71	2	52.3
67	EWHPL 67	251	26	45	0.4	71	2	44.6

68	EWHPPL 68	252	26	45	0.8	71	2	32.4
69	EWHPPL 69	253	26	45	4.3	71	2	25.6
70	EWHPPL 70	254	26	45	14.2	71	2	15.9
71	EWHPPL 71	256	26	45	23.8	71	2	25.8
72	EWHPPL 72	257	26	45	39.3	71	2	47.5
73	EWHPPL 73	258	26	45	42.8	71	2	37.2
74	EWHPPL 74	259	26	45	46.6	71	2	26.5
75	EWHPPL 75	260	26	45	48.3	71	2	18.7

A.3. Reference of applied methodology

>> Consolidated methodology for grid-connected electricity generation from renewable sources, **ACM0002, Version 06**

1. Tool for the demonstration and assessment of additionality, version 3.0
2. Tool to calculate project or leakage CO2 emissions from fossil fuel combustion

Further information with regards to the methodology / tools can be obtained at

<http://cdm.unfccc.int/methodologies/DB/UB3431UT9I5KN2MUL2FGZXZ6CV71LT>

A.4. Crediting period of project

>> The length of the Crediting period of the project activity as per registered PDD is 10 years (Fixed). The crediting period start date is 15/03/2010 and length of crediting period is 10 years (from 15/03/2010 to 14/03/2020).

CDM Crediting Period: 15/03/2010 – 14/03/2020 (Fixed)

GS Registration Date: 19/06/2014

GS Crediting Period: 15/03/2010 – 14/03/2020

SECTION B. IMPLEMENTATION OF PROJECT

B.1. Description of implemented project

>> The Project involves 75-wind energy converters (WECs) of 800 kW E-48 with internal electrical lines connecting the Project with local evacuation facility. The WECs generates 3-phase power at 400V, which is stepped up to 33 KV. The Project can operate in the frequency range of 47.5–51.5 Hz and in the voltage range of 400 V $\pm$ 12.5%. The other salient features of the state-of-art-technology are referred in Annex 3.



For project activities that consist of more than one site, the report shall clearly describe the status of implementation and starting date of operation for each site. For CDM project activities with phased implementation, the report shall indicate the progress of the proposed CDM project activity achieved in each phase.

The starting date of operation of the project activity

The first WEC under the project activity was commissioned on 26th November 2006 and last WEC under the project activity was commissioned on 25th December 2006. The commissioning date for all the WECs included in the project activity is given in the table below.

Table 2: Commissioning details

S.N o	EWHPL UNIQUE ID	Loc No	Commissioning date
1	EWHPL 01	322	20-Dec-06

2	EWHPL 02	323	20-Dec-06
3	EWHPL 03	145	20-Dec-06
4	EWHPL 04	146	20-Dec-06
5	EWHPL 05	147	20-Dec-06
6	EWHPL 06	148	20-Dec-06
7	EWHPL 07	150	20-Dec-06
8	EWHPL 08	151	20-Dec-06
9	EWHPL 09	152	20-Dec-06
10	EWHPL 10	153	20-Dec-06
11	EWHPL 11	154	20-Dec-06
12	EWHPL 12	155	20-Dec-06
13	EWHPL 13	156	20-Dec-06
14	EWHPL 14	157	20-Dec-06
15	EWHPL 15	307	21-Dec-06
16	EWHPL16	306	21-Dec-06
17	EWHPL 17	300	20-Dec-06
18	EWHPL 18	301	20-Dec-06
19	EWHPL 19	304	21-Dec-06
20	EWHPL 20	305	21-Dec-06
21	EWHPL 21	161	20-Dec-06
22	EWHPL 22	160	20-Dec-06
23	EWHPL 23	159	20-Dec-06
24	EWHPL 24	324	21-Dec-06
25	EWHPL 25	167	20-Dec-06
26	EWHPL 26	168	26-Nov-06
27	EWHPL 27	169	26-Nov-06
28	EWHPL 28	170	26-Nov-06
29	EWHPL 29	326	21-Dec-06
30	EWHPL 30	177	25-Dec-06
31	EWHPL 31	178	25-Dec-06
32	EWHPL 32	179	25-Dec-06
33	EWHPL 33	181	25-Dec-06
34	EWHPL 34	183	25-Dec-06
35	EWHPL 35	184	25-Dec-06

36	EWHPL 36	186	25-Dec-06
37	EWHPL 37	190	25-Dec-06
38	EWHPL 38	191	25-Dec-06
39	EWHPL 39	192	25-Dec-06
40	EWHPL 40	193	25-Dec-06
41	EWHPL 41	194	25-Dec-06
42	EWHPL 43	218	21-Dec-06
43	EWHPL 42	219	21-Dec-06
44	EWHPL 44	220	25-Dec-06
45	EWHPL 45	221	25-Dec-06
46	EWHPL 46	222	25-Dec-06
47	EWHPL 47	223	21-Dec-06
48	EWHPL 48	224	21-Dec-06
49	EWHPL 49	225	21-Dec-06
50	EWHPL 50	226	21-Dec-06
51	EWHPL 51	230	21-Dec-06
52	EWHPL 52	232	21-Dec-06
53	EWHPL 53	233	21-Dec-06
54	EWHPL 54	329	21-Dec-06
55	EWHPL 55	234	21-Dec-06
56	EWHPL 56	236	21-Dec-06
57	EWHPL 57	237	21-Dec-06
58	EWHPL 58	238	20-Dec-06
59	EWHPL 59	328	20-Dec-06
60	EWHPL 60	241	20-Dec-06
61	EWHPL 61	242	20-Dec-06
62	EWHPL 62	245	20-Dec-06
63	EWHPL 63	246	26-Nov-06
64	EWHPL 64	249	26-Nov-06
65	EWHP 65	302	21-Dec-06
66	EWHPL 66	250	26-Nov-06
67	EWHPL 67	251	21-Dec-06
68	EWHPL 68	252	21-Dec-06
69	EWHPL 69	253	21-Dec-06

70	EWHPPL 70	254	26-Nov-06
71	EWHPPL 71	256	26-Nov-06
72	EWHPPL 72	257	26-Nov-06
73	EWHPPL 73	258	26-Nov-06
74	EWHPPL 74	259	21-Dec-06
75	EWHPPL 75	260	21-Dec-06

The information regarding the actual operation of the project

The project activity consists of 75 WECs (800 kW) of make E-48 totaling to a capacity of 60 MW. During the monitoring period, the WECs were operating normally. Hence no major breakdown was found during this period.

A brief description of: (i) events or situations that occurred during the monitoring period (ii) how the issues resulting from these events or situations are being addressed.

Wind World Wind Farms (Hindustan) Pvt. Ltd. has appointed Wind World (India) Limited as their operation & maintenance contractor. Hence Wind World (India) Limited is responsible for operation and maintenance activities for Wind World Wind Farms (Hindustan) Pvt. Ltd. Wind World (India) Limited operation and maintenance activities are ISO 9001:2008 certified and all the events are recorded in the log book available at the project site. Referring to the data available it can be inferred that there have not been any major special events for any of the WECs that are included in the project activity. As a part of regular maintenance, the WECs are stopped for mechanical and electrical maintenance for 16 to 18 hours annually and for visual inspection for 6 to 7 hours quarterly.

B.1.1 Forward Action Requests

>> Not Applicable

B.2. Post-Design Certification changes

>>

B.2.1. Temporary deviations from the approved Monitoring & Reporting Plan, methodology or standardized baseline

>> Not Applicable

B.2.2. Corrections

>> Not Applicable

B.2.3. Changes to start date of crediting period

>> Not Applicable

B.2.4. Permanent changes from the Design Certified monitoring plan, applied methodology or applied standardized baseline

>> During this monitoring period no permanent changes or permanent deviation occurred from the registered monitoring plan¹, applied methodologies or applied standardized baseline. However, there was a permanent change to the registered monitoring plan (PRC-1168-002) approved on 21/03/2014. The revision has been requested via Revised PDD version 12.0; dated 14/11/2013, which was approved by UNFCCC on 21/03/2014. (Link: <http://cdm.unfccc.int/PRCContainer/DB/prcp430495431/view>)

B.2.5. Changes to project design of approved project

>> During this monitoring period, no permanent changes occurred to project design of registered project activity.

¹ <http://cdm.unfccc.int/PRCContainer/DB/prcp430495431/view>

SECTION C. DESCRIPTION OF MONITORING SYSTEM APPLIED BY THE PROJECT

>> Approved monitoring methodology ACM0002 / Version 06 Sectoral Scope: 1, "Consolidated monitoring methodology for grid-connected electricity generation from renewable sources.", by CDM - Meth Panel has been used to monitor the emission reductions.

This approved monitoring methodology requires monitoring of the following:

- Electricity generation from the project activity; and
- Operating margin emission factor and build margin emission factor of the grid, where *ex post* determination of grid emission factor has been chosen

Since the baseline methodology is based on *ex ante* determination of the baseline, the monitoring of operating margin emission factor and build margin emission factor is not required.

Wind World (India) Limited is managing the project operation.

EG_y for the project activity is being derived as follows:-

The electricity generated from the project activity is transmitting to Bhu substation through 4 feeders. The WECs of the project activity and WECs of other power producers are connected to Bhu Substation which is further connected to Akal substation. In addition to the project activity, the WECs located at Kita, Jodha, Pithoda Ki Dhani are connected to Bhu substation which are further connected to the Akal substation.

An Energy meter at 220 kV (accuracy Class-0.2) at Bhu Substation is termed secondary 'Back up meter' and Energy meters at 220 kV/400kV (accuracy Class-0.2) at Akal substation has one 'Main Meter' & one back up meter. Net Electricity supplied by the WECs is being metered at a common metering/delivery point. The common metering/delivery point comprises of one main meter that is installed at 220 kV/400kV metering point at the GSS Akal substation and one backup meter which is also installed at 220kV/400kV at Akal substation. Consequently, the main meter reading reflects the aggregate electricity supplied by all these WECs, including the project activity. The net electricity supplied by individual WEC is being determined by following a process of allocating the total electricity recorded at the main meter to the individual WEC in

proportion of the electricity generation recorded by the LCS meters at the individual WEC. The apportioning for electricity export and import is done by Wind World (India) Limited based on which invoices are raised for individual customers. These invoices can be cross-verified by cheque copies by the DOE.

The procedure for allocation is detailed below:

$E_{JMR,Export}$ = Gross Electricity exported, as recorded by the main meter at the substation. This data represents the total gross electricity exported by all the WECs (project and non project) at substation point.

$E_{JMR,Import}$ = Gross Electricity imported, as recorded by the main meter at the substation. This data represents the total gross electricity imported by all the WECs (project and non project) at substation point.

$E_{Controller,Export,i}$ = Gross Electricity exported (at WEC point at the site) by a WEC (project or non project), as measured at the LCS meter. Each WEC has exclusive LCS meter that records gross electricity export from the WEC (project or non project). This gross electricity exported by the WEC (at WEC point at the site)

$E_{Controller,Export,j}$ and $E_{Controller,Export,k}$ are subsets of $E_{Controller,Export,i}$

where i is any value between 1 to j+k

j represents WECs of the project activity (1 to 75) connected to main meter & backup meter at Akal substation and secondary backup meter at Bhu substation.

k represents WECs of the non project (76 to 290) connected to main meter & backup meter at Akal substation and secondary backup meter at Bhu substation.

$\sum E_{Controller,Export,i}$ = Summation of gross electricity exported (at WEC point at the site) by all the WECs (project and non project) connected to the main meter at the substation, measured at the LCS meter of each WEC. This is summation of gross electricity exported by the WECs (at WEC point at the site) including WECs of the project and non project.

$E_{WEC,Export,j}$ = Gross Electricity exported (at substation point) by an individual WEC of the project to the grid that is connected to main meter & backup meter. Thus this data can be used to compute electricity export (at substation point) for individual WEC.

$E_{WEC,Import,j}$ = Gross Electricity imported (at substation point) by an individual WEC of the project from the grid that is connected to main meter & backup meter. Thus this data can be used to compute electricity import (at substation point) for individual WEC.

$\sum_{Project} E_{WEC,Export,j}$ = Summation of gross electricity exported (at substation point) by all the WECs of the project activity.

$\sum_{Project} E_{WEC,Import,j}$ = Summation of gross electricity imported (at substation point) by all the WECs of the project activity.

Gross Electricity exported by each WEC is apportioned on the basis of gross electricity export recorded at the LCS meter of each WEC and the gross electricity export recorded at the main meter mentioned in the JMR. The export multiplication factor is calculated as follows-

$$\text{Export Multiplication factor} = \frac{E_{JMR,Export}}{\sum E_{Controller,Export,i}} \dots\dots\dots(1)$$

Thus the energy exported by an individual WEC of the project activity to the grid is given by the equation-

$$E_{WEC,Export,j} = \text{Export Multiplication factor} \times E_{Controller,Export,j} \dots\dots\dots(2)$$

As the LCS meter doesn't record import, the apportioning of energy import by each WEC is also done on the basis of electricity export recorded at the LCS meter of each WEC and the electricity import recorded at the main meter and mentioned in the JMR. The import multiplication factor is calculated as follows-

$$\text{Import Multiplication factor} = \frac{E_{JMR,import}}{\sum E_{Controller,Export,i}} \dots\dots\dots(3)$$

Thus, the energy imported by an individual WEC of the project activity to the grid is given by the equation-

$$E_{WEC,Import,j} = \text{Import Multiplication factor} \times E_{Controller,Export,j} \dots\dots\dots(4)$$

The net electricity supplied by the WECs of the project is given by the equation-

$$EG_y = \sum_{\text{Project}} E_{\text{WEC,Export},j} - \sum_{\text{Project}} E_{\text{WEC,import},j} \dots\dots\dots(5)$$

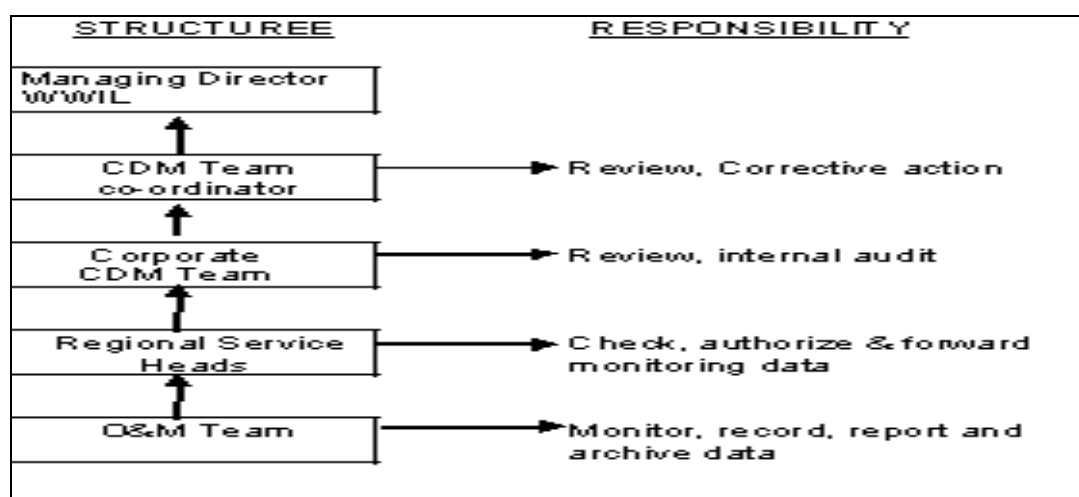
The summation is done on the WECs belonging to the project activity.

The apportioning for electricity export and import is done by Wind World (India) Limited based on which invoices are raised for individual customers. These invoices can be cross verified by the cheque copies by the DOE.

Joint Meter Reading is generated on 1st day of every month. Representatives of RRVPN/Ajmer & Jaipur DISCOM and Wind World (India) Limited jointly take the main & backup reading and sign the meter reading on the first day of every month. Simultaneously, the joint meter reading at the 220 kV level of the secondary backup metering system at Akal substation is also being taken by representatives of RRVPN/Ajmer & Jaipur DISCOM and Wind World (India) Limited.

The line diagram of wind farm including metering points and substations is provided in Annex 1.

The operational and management structure implemented and roles and responsibility by Wind World (India) Limited is as follows:



Metering system details:

The details of meters installed at the site for measuring export and import by project activity are provided below in the table:

Meter Type	Meter Sr. No.	Sub-station	Accuracy class	Make	Calibration Details
Main Meter	15624843	Akal	0.2	L & T	09-03-2017 14-05-2018
	15624842				25-09-2019 20-01-2020 15-03-2021
Backup Meter	15624844	Akal	0.2	L & T	09-03-2017 14-05-2018 20-01-2020 15-03-2021
Secondary Backup Meter	15197055	Bhu	0.2	L & T	25-05-2017 10-05-2018 20-01-2020 15-03-2021

The Main meter (15624843) & check meter (15624844) has got calibrated on 9th March 2017 & due date of calibration was 9th March 2018, but the same was done on 14th May 2018. Similarly, the calibration was due on 14th May 2019, but on 25th Sep 2019 Main meter has got replaced by new calibrated ABT meters (Main meter – 15624842).

However, delay in calibration has been observed and therefore, as per guideline provided under paragraph 366(a) of VVS PAs version 03, the PP has applied maximum permissible error for all measured values of “EG_{Export,y}” & “EG_{Import,y}” taken during the period between the scheduled date of calibration and the actual date of calibration conservatively.

As detailed in the above table, delay in meter calibration has been observed from the month of March-2018 as the scheduled date of meter calibration was 9th March 2018 and meters have been calibrated on 14 May 2018. Similarly, there was delay in calibration in the month of May 2019, as the scheduled date of meter calibration was 14th May 2019 but on 25th Sep 2019 Main meter has got replaced by new calibrated ABT meters (Main meter – 15624842) and back up meters were calibrated on 20th January 2020. Meter calibration activity is carried out by state utility and beyond the control of PP. So, following the conservative approach PP has considered delay for the month of March 2018 to May 2018 and May 2019 to January 2020 to apply the maximum permissible error of “0.2%” to all measured values of “EG_{Export,y}” & “EG_{Import,y}” Please

refer Sheet "ER calculation sheet" for detailed calculation. Moreover, PP has submitted latest calibration certificates for year 2017, 2018, 2019, 2020 and 2021 to DOE.

SECTION D. DATA AND PARAMETERS

D.1. Data and parameters fixed ex ante or at renewal of crediting period

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Relevant SDG Indicator	13.2.1 Number of countries that have communicated the establishment or operationalization of an integrated policy/strategy/plan which increases their ability to adapt to the adverse impacts of climate change, and foster climate resilience and low greenhouse gas emissions development in a manner that does not threaten food production (including a national adaptation plan, nationally determined contribution, national communication, biennial update report or other)		
Data/Parameter	$EF_{OM,y}$		
Unit	tCO _{2e} /MWh		
Description	Operating Margin Emission Factor of Northern Regional Electricity Grid		
Source of data	"CO ₂ Baseline Database for Indian Power Sector" published by the Central Electricity Authority, Ministry of Power, Government of India. The "CO ₂ Baseline Database for Indian Power Sector" is available at www.cea.nic.in		
Value(s) applied	2002 – 03	0.9993	
	2003 – 04	0.9869	
	2004 – 05	0.9756	
	Average Operating Margin of last three years	0.9873	
Choice of data or measurement methods and procedures	Operating Margin Emission Factor has been calculated by the Central Electricity Authority using the simple OM approach in accordance with ACM0002.		
Purpose of data/parameter	Baseline Emission Calculations		
Additional comments	None		

Relevant SDG Indicator	13.2.1 Number of countries that have communicated the establishment or operationalization of an integrated policy/strategy/plan which increases their ability to adapt to the adverse impacts of climate change, and foster climate resilience and low greenhouse gas emissions development in a manner that does not threaten food production (including a national adaptation plan, nationally determined contribution, national communication, biennial update report or other)
Data/Parameter	$EF_{BM,y}$
Unit	tCO _{2e} /MWh
Description	Build Margin Emission Factor of Northern Regional Electricity Grid
Source of data	"CO ₂ Baseline Database for Indian Power Sector" published by the Central Electricity Authority, Ministry of Power, Government of India. The "CO ₂ Baseline Database for Indian Power Sector" is available at www.cea.nic.in
Value(s) applied	2004-05 - 0.5335
Choice of data or measurement methods and procedures	Build Margin Emission Factor has been calculated by the Central Electricity Authority in accordance with ACM0002.
Purpose of data/parameter	Baseline Emission Calculations
Additional comments	None

Relevant SDG Indicator	13.2.1 Number of countries that have communicated the establishment or operationalization of an integrated policy/strategy/plan which increases their ability to adapt to the adverse impacts of climate change, and foster climate resilience and low greenhouse gas emissions development in a manner that does not threaten food production (including a national adaptation plan, nationally determined contribution, national communication, biennial update report or other)
Data/Parameter	$EF_{CM,y}$
Unit	tCO _{2e} /MWh
Description	Combined Margin Emission Factor of Northern Regional Electricity Grid

Source of data	"CO₂ Baseline Database for Indian Power Sector" published by the Central Electricity Authority, Ministry of Power, Government of India. The "CO₂ Baseline Database for Indian Power Sector" is available at www.cea.nic.in
Value(s) applied	0.87387
Choice of data or measurement methods and procedures	Combined Margin Emission Factor has been calculated by the Central Electricity Authority in accordance with ACM0002.
Purpose of data/parameter	Baseline Emission Calculations
Additional comments	None

D.2 Data and parameters monitored

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Relevant SDG Indicator	7.2.1 Renewable energy share in the total final energy consumption
Data/Parameter	EGy
Unit	MWh (Mega-Watt hour)
Description	Net electricity supplied to the grid by the Project
Measured/calculated/default	Calculated by applying apportioning procedure better described in section C.
Source of data	Electricity supplied to the grid as per monthly breakup sheet prepared by Wind World (India) Limited and the same will cross verified by the tariff invoices raised on RRVPNL/Ajmer & Jaipur DISCOM (State Utility).
Value(s) of monitored parameter	Annual electricity supplied to the grid by the Project 161608.67 MWh (This is a calculated value. Please refer ER sheet)
Monitoring equipment	Calculated as per formulae better described under section C.
Measuring/reading/recording frequency	Monthly: The apportioning is done as per the procedure described in section C.

Calculation method (if applicable)	The WECs of the project activity and WECs of other power producers are connected to Bhu Substation which is further connected to Akal substation. In addition to the project activity, the WECs located at Kita, Jodha, Pithoda ki Dhani are also connected to Bhu substation which are further connected to the Akal substation. Net Electricity supplied by all these WECs is metered at a common metering/delivery point. The common metering/delivery point comprises one main meter and one backup meter that are installed at 220 kV/400 kV metering/delivery point at the Akal substation. Consequently, the main meter reading reflects the aggregate electricity supplied by all these WECs, including the project activity. The net electricity supplied by individual WEC is determined by a process of allocating the total electricity recorded at the main meter to the individual WEC in proportion to the electricity generation recorded by the LCS meters at the individual WEC. Allocation plan for calculating net electricity supplied to the grid is explained in section C above.
QA/QC procedures	This is a calculated procedure. However, the values can be cross checked from the invoices.
Purpose of data/parameter	Baseline Emissions calculations
Additional comments	Not Applicable

Relevant SDG Indicator	7.2.1 Renewable energy share in the total final energy consumption
Data/Parameter	E_{JMR.Export}
Unit	MWh (Mega-Watt hour)
Description	Gross Electricity exported (at substation point), as recorded by the main meter & backup meter at the Akal substation. This data represents the total gross electricity exported by all the WECs (project and non-project) at substation point.
Measured/calculated/default	Measured: The Export reading is jointly noted from the main meter installed at the Akal substation.
Source of data	Export value from Joint meter reading taken at Akal Substation in the presence of representatives of Wind World (India) Limited and state utility.
Value(s) of monitored parameter	Please refer ER sheet for month wise details.
Monitoring equipment	Please refer section C.
Measuring/reading/recording frequency	The monitoring of the data is on continuous basis and recorded monthly. The reading is jointly noted by the representatives of state utility and Wind World (India) Limited on monthly basis.
Calculation method (if applicable)	NA

QA/QC procedures	Meters were calibrated annually. Please refer section C above.
Purpose of data/parameter	Baseline Emissions calculations
Additional comments	Not Applicable

Relevant SDG Indicator	7.2.1 Renewable energy share in the total final energy consumption
Data/Parameter	$E_{JMR,Import}$
Unit	MWh (Mega-Watt hour)
Description	Gross Electricity imported (at substation point), as recorded by the main meter at the Akal Substation. This data represents the total gross electricity imported by all the WECs (project and non-project) at substation point
Measured/calculated/default	Measured: The import reading is jointly noted from the main meter installed at the Akal substation.
Source of data	Import value from Joint meter reading taken at Akal Substation in the presence of representatives of Wind World (India) Limited and state utility
Value(s) of monitored parameter	Please refer ER sheet for month wise detail.
Monitoring equipment	Please refer section C.
Measuring/reading/recording frequency	The monitoring of the data is on continuous basis. The reading is jointly noted by the representatives of state utility and Wind World (India) Limited on monthly basis
Calculation method (if applicable)	NA
QA/QC procedures	Meters were calibrated annually. Please refer section C above.
Purpose of data/parameter	Baseline Emissions calculations
Additional comments	Not Applicable

Relevant SDG Indicator	7.2.1 Renewable energy share in the total final energy consumption
Data/Parameter	$E_{Controller,Export,i}$
Unit	MWh (Mega-Watt hour)

Description	Gross Electricity export (at WEC point at the site) by a WEC (project or non-project), as measured at the LCS meter. Each WEC has exclusive LCS meter that records gross electricity export from the WEC (project or non-project). This represents gross electricity export by individual WEC (at WEC point at the site) where i is any WEC between 1 to j+k j is any WEC between 1 to 75 of the project activity connected to main meter & backup meter at Akal substation and secondary backup meter at Bhu substation. k is any WEC between 76 to 290 of the non-project connected to main meter & backup meter at Akal substation and secondary backup meter at Bhu substation.
Measured/calculated/default	Measured: The value is monitored continuously by the online monitoring station. This value can also be checked from the electronic panel installed inside the WEC tower.
Source of data	This reading is monitored continuously by the online monitoring station (online monitoring station is located at the project site where all the data [historical and instantaneous] from the LCS meters of all WECs is retrieved) at the project site.
Value(s) of monitored parameter	Please refer ER sheet for the individual WEC panel generation
Monitoring equipment	Meter Type: NZR Meter Serial No: Refer Annex 2 The LCS meters are do not require calibration as the energy readings of electricity generated at the LCS meter is cross verified by the energy calculated by inverting system installed in the WECs. In case there is any mismatch in the energy values recorded by the LCS meter and the energy values calculated by the inverting system; the WEC will stop working and generate the error report.
Measuring/reading/recording frequency	The value is monitored continuously by the online monitoring station. This value can also be checked from the electronic panel installed inside the WEC tower.
Calculation method (if applicable)	NA

QA/QC procedures	During the monitoring period there is no mismatch found in the electricity generated at the LCS meter & the inverting system. Therefore there is no data uncertainty.
Purpose of data/parameter	Baseline Emissions calculations
Additional comments	Not Applicable

Relevant SDG Indicator	7.2.1 Renewable energy share in the total final energy consumption
Data/Parameter	$\sum E_{\text{Controller.Export } i}$
Unit	MWh (Mega-Watt hour)
Description	Summation of gross electricity exported (at WEC point at the site) by all the WECs (project and non project) connected to the main meter at the substation, measured at the LCS meter of each WEC. This is summation of gross electricity exported by the WECs (at WEC point at the site) including WECs of the project and non project. where i is any WEC between 1 to j+k j is any WEC between 1 to 75 of the project activity connected to main meter & backup meter at Akal substation and secondary backup meter at Bhu substation. k is any WEC between 76 to 290 of the non project connected to main meter & backup meter at Akal substation and secondary backup meter at Bhu substation.
Measured/calculated/default	Measured: The value is monitored continuously by the online monitoring station. This value can also be checked from the electronic panel installed inside the WEC tower.
Source of data	This reading is monitored continuously by the online monitoring station (online monitoring station is located at the project site where all the data [historical and instantaneous] from the LCS meters of all WECs is retrieved) at the project site.
Value(s) of monitored parameter	164068.78 MWh

Monitoring equipment	The LCS meters do not require calibration as the energy readings of electricity generated at the LCS meter is cross verified by the energy calculated by inverting system installed in the WECs. In case there is any mismatch in the energy values recorded by the LCS meter and the energy values calculated by the inverting system; the WEC will stop working and generate the error report.
Measuring/reading/recording frequency	The value is monitored continuously by the online monitoring station. This value can also be checked from the electronic panel
Calculation method (if applicable)	NA
QA/QC procedures	During the monitoring period there is no mismatch found in the electricity generated at the LCS meter & the inverting system. Therefore there is no data uncertainty.
Purpose of data/parameter	Baseline Emissions calculations
Additional comments	Not Applicable

Relevant SDG Indicator	7.2.1 Renewable energy share in the total final energy consumption
Data/Parameter	$E_{WEC,Export,j}$
Unit	MWh (Mega-Watt hour)
Description	Gross Electricity exported (at substation point) by an individual WEC (j of the project activity) to the grid that is connected to main meter & backup meter at Akal substation. Where j is any WEC between 1 to 75 of the project activity connected to main meter & backup meter at Akal substation and secondary backup meter at Bhu substation.
Measured/calculated/default	$E_{WEC,Export,j}$ denotes the electricity exported by individual WEC of the project activity to the grid. The value is calculated based on the formula mentioned in Section C
Source of data	Calculated using formula mentioned in Section C
Value(s) of monitored parameter	Please refer ER sheet for the individual WEC export value.
Monitoring equipment	Calculated using the formulae better described under section C. Please refer equation 2 under section C of the MR.
Measuring/reading/recording frequency	Calculated using the formulae better described under section C.

Calculation method (if applicable)	Refer to Section C for details and description of the above variables.
QA/QC procedures	Value is calculated.
Purpose of data/parameter	Baseline Emissions calculations
Additional comments	Not Applicable

Relevant SDG Indicator	7.2.1 Renewable energy share in the total final energy consumption
Data/Parameter	$E_{WEC,Import,j}$
Unit	MWh (Mega-Watt hour)
Description	Gross Electricity imported (at substation point) by an individual WEC of the project activity to the grid that is connected to main meter & backup meter at Akal substation. Where j is any WEC between 1 to 75 of the project activity connected to main meter & backup meter at Akal substation and secondary backup meter at Bhu substation.
Measured/calculated/default	$E_{WEC,Import,j}$ denotes the gross electricity imported by individual WEC of the project activity from the grid. The value is calculated based on the formula mentioned in section C.
Source of data	Calculated using formula mentioned in Section C.
Value(s) of monitored parameter	Please refer ER sheet for the individual WEC import value.
Monitoring equipment	Calculated using the formulae better described under section C. Please refer equation 4 under section C of the MR.
Measuring/reading/recording frequency	Calculated using the formulae better described under section C.
Calculation method (if applicable)	Refer to Section C for details and description of the above variables.
QA/QC procedures	Value is calculated.
Purpose of data/parameter	Baseline Emissions calculations
Additional comments	Not Applicable

Relevant SDG Indicator	7.2.1 Renewable energy share in the total final energy consumption
Data/Parameter	$\sum_{Project} E_{WEC,Export,j}$
Unit	MWh (Mega-Watt hour)

Description	Summation of gross electricity exported (at substation point) by all the WECs of the project activity. Where j is any WEC between 1 to 75 of the project activity connected to main meter & backup meter at Akal substation and secondary backup meter at Bhu substation.
Measured/calculated/default	$\sum_{\text{Project}} E_{\text{WEC,Export},j}$ denotes summation of the gross electricity exported (at substation point) to the grid by a WECs included in the project activity. The value is calculated based on the formula mentioned in section C.
Source of data	Summation of data values of $E_{\text{WEC,Export},j}$ for all the WECs included in the project activity.
Value(s) of monitored parameter	161888.29 MWh
Monitoring equipment	Calculated using the formulae better described under section C.
Measuring/reading/recording frequency	Calculated using the formulae better described under section C.
Calculation method (if applicable)	$\sum_{\text{Project}} E_{\text{WEC,Export},j}$ denotes summation of the gross electricity exported (at substation point) to the grid by a WECs included in the project activity. Refer to Section C for details and description.
QA/QC procedures	The value is calculated and can be cross checked from the invoices raised on the state utility.
Purpose of data/parameter	Baseline Emissions calculations
Additional comments	Not Applicable

Relevant SDG Indicator	7.2.1 Renewable energy share in the total final energy consumption
Data/Parameter	$\sum_{\text{Project}} E_{\text{WEC,Import},j}$
Unit	MWh (Mega-Watt hour)
Description	Summation of electricity imported (at substation point) by all the WECs of the project activity. Where, j is any value between 1 to 75 representing WECs of the project activity connected to main meter & backup meter at Akal substation and secondary backup meter at Bhu substation.
Measured/calculated/default	$\sum_{\text{Project}} E_{\text{WEC,Import},j}$ denotes summation of the gross electricity imported (at substation point) to the grid by a WECs included in the project activity. The value is calculated based on the formula mentioned in section C.
Source of data	Summation of data values of $E_{\text{WEC,Import},j}$ for all the WECs included in the project activity.

Value(s) of monitored parameter	279.62 MWh
Monitoring equipment	Calculated using the formulae better described under section C.
Measuring/reading/recording frequency	Calculated using the formulae better described under section C.
Calculation method (if applicable)	$\sum_{\text{Project}} E_{\text{WEC,Import},j}$ denotes summation of the gross electricity imported (at substation point) to the grid by a WECs included in the project activity. Refer to Section C for details and description.
QA/QC procedures	The value is calculated and can be cross checked from the invoices raised on the state utility.
Purpose of data/parameter	Baseline Emissions calculations
Additional comments	Not Applicable

Sustainability Monitoring Plan:

Relevant SDG Indicator	8.5.2 Unemployment rate, by sex, age and persons with disabilities
Data/parameter:	Quality of Employment
Unit	Number of Training Programs/Workshops/Awareness Programs
Description	Training records, categories of jobs created, working conditions of the project activity, occupation health management, safeguards put in place and living standards of the plant staff.
Measured/calculated/default	Measured for duration 01/09/2017 to 14/03/2020
Source of data	Documentation pertaining to training programmes, awareness generation activities, photographs, interviews etc.

Value(s) of monitored parameter	Following training programme has been conducted in order to enhance the safety awareness for the local staff. 12/01/2018: Permit to Work (PTW) & Electrical Safety, 11 employees attended the training 06/05/2018: Fire, Electrical and General Safety Training, 9 employees attended the training 15/09/2018: Height, Electrical & First Aid Training, 14 employees attended the training 06/03/2019: Safety Camp, 12 employees attended the training 08/07/2019: Height Rescue Training, 12 employees attended the training 23/09/2019: Snake Bite Mock drill, 18 employees attended the training
Monitoring equipment	Manually by PP representative
Measuring/reading/recording frequency:	Annually
Calculation method (if applicable):	Manually by PP representative
QA/QC procedures:	The training programme has helped in making the workforce efficient and safe. Thus, the project has a positive impact on the parameter.
Purpose of data:	To monitor the contribution to SDG 8
Additional comments:	None

Relevant SDG Indicator	3.8.1 Coverage of essential health services (defined as the average coverage of essential services based on tracer interventions that include reproductive, maternal, new born and child health, infectious diseases, non-communicable diseases and service capacity and access, among the general and the most disadvantaged population)
Data/parameter:	Human and Institutional capacity
Unit	Total number of initiatives, events and programmes, primarily Health and Education Camps
Description	Health and Education related activities conducted for well-being of locals/villagers
Measured/calculated/default	Measured

Source of data	Records of organized events, photographs, proof of payments etc.
Value(s) of monitored parameter	Since access to basic education, health, basic amenities and infrastructural facilities are basic factors to facilitate human and institutional capacity development; various initiatives have been undertaken by the project developer to contribute to these thematic areas. The contribution made during monitoring period is mentioned below: - PP had operated a fully equipped medical van with Doctor, Nurse, Pharmacist, Social worker on board. It runs across 9 identified villages of Jaisalmer district of Rajasthan. More than 3000 patients have been covered under the Mobile Health Van Program. - Under the Health Program, more than 20 health awareness campaigns have been conducted in the region in order to communicate the importance of Health & Hygiene, especially for Women and Child. - PP have also launched Safe Drinking Water facility programs in 10 govt. schools across Jaisalmer district. Under this program RO water facilities have been installed at schools giving access to clean and safe water for students. -PP has distributed educational kits to schools across 3 villages. -PP has organised health & awareness camps in school and 120 children were benefited. - Sanitary napkins were distributed to school girls.
Monitoring equipment	Manually
Measuring/reading/recording frequency:	Annually
Calculation method (if applicable):	-
QA/QC procedures:	-
Purpose of data:	To monitor the contribution to SDG 3 (Ensure healthy lives and promote well-being for all at all ages)
Additional comments:	None

Relevant SDG Indicator	8.5.2 Unemployment rate, by sex, age and persons with disabilities
Data/parameter:	Quantitative employment and income generation
Unit	Number of Employees
Description	Number of jobs generated during the operation of the wind farm.
Measured/calculated/default	Measured
Source of data	Attendance Sheet and employment records maintained by Project Developer

Value(s) of monitored parameter	The project activity is connected to BHU substation. Total operational connected capacity with BHU substation is 220 MW. Local staff is hired by the project proponent for multiple projects which are connected to BHU sub-station. In order to justifiably arrive at employment generation which can be attributed to the project activity under consideration, number of local people hired have been apportioned w.r.t the total operational capacity connected to BHU substation. In addition to this, local villagers were engaged for short time jobs because of the infrastructure development (e.g. road construction, road repairs, cleaning of sub-station etc.) which leading to income generation. Further, for local transportation, PP is using local vehicles which have also created a revenue stream for the local people. Since this is an indirect benefit of the project activity in terms of income generation, it is not possible to exactly quantify the same. However, it can be conservatively stated that around 10-15 people have received additional livelihood/income generation opportunities because of the project activity. Same can be established through interviews with various local stakeholders by the DOE. Specifically, 7 local people have been employed for the project activity during the monitoring period under consideration. Corresponding attendance sheets and other relevant records on annual monitoring have been submitted to the DOE.
Monitoring equipment	Attendance Sheet and employment records maintained by Project Developer
Measuring/reading/recording frequency:	Annually
Calculation method (if applicable):	-
QA/QC procedures:	Additional job opportunities created for the local population. Income generation to be enhanced by creating relatively high value job opportunities through training and capacity building.
Purpose of data:	To monitor the contribution to SDG 8
Additional comments:	None

D.3. Comparison of monitored parameters with last monitoring period

Data/Parameter	Value obtained in this monitoring period	Value obtained last monitoring period
SDG 3: Good health and well being	6	2
SDG 7: Affordable and Clean Energy	161608.67 MWh	72,656.125 MWh
SDG 8: Decent Work and Economic Growth	6 Training 7 Employees	2 Training 10 Employees
SDG 13: Climate Action	141,225 tCO2e	63,492 tCO2e

D.4. Implementation of sampling plan

>> No sampling plan is followed by PP.

SECTION E. CALCULATION OF SDG IMPACTS

E.1. Calculation of baseline value or estimation of baseline situation of each SDG Impact

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SDG 3 Impact of baseline situation:

In absence of the project activity, 0 CSR activities would have been initiated during the monitoring period from 01/09/2017 to 14/03/2020.

SDG 7 Impact of baseline situation:

In absence of the project activity, the amount of renewable energy is 0 MWh during the monitoring period from 01/09/2017 to 14/03/2020.

SDG 8 Impact of baseline situation:

In absence of the project activity, 0 full-time jobs and no training provided during the monitoring period from 01/09/2017 to 14/03/2020.

SDG 13 Impact of baseline situation

From 01/09/2017 to 14/03/2020, the amount of GHGs emission avoided or sequestered in baseline is 0 tCO₂e.

E.2. Calculation of project value or estimation of project situation of each SDG Impact

>>

SDG 7 Affordable and Clean Energy: The monitoring parameter for the SDG 7 is Quantity of net electricity supplied to the grid during the year y. In the project situation, the project supplied 161,608.67 MWh electricity during the monitoring period. This can be crosschecked from JMR/B-Form& Invoices.

Data/Parameter	Value obtained in this monitoring period
SDG 7: Affordable and Clean Energy	161,608.67 MWh

SDG 8: Decent Work and Economic Growth: The monitoring parameter for the SDG 8 are Number of trainings provided to employees & O&M staff, Number of employees involved in the project. During the project scenario, the following is achieved:

Data/Parameter	Value obtained in this monitoring period
SDG 8: Decent Work and Economic Growth	6 Training 7 Employees

These can be crosschecked from the training records, O&M contract & employment records.

SDG 13 Climate Actions

The baseline is the kWh produced by the renewable generating unit multiplied by an emission coefficient (measured in kg CO₂e/kWh) calculated in a transparent and conservative manner as the weighted average emissions (in kg CO₂e/kWh) as described in registered PDD.

$$BE_y = EG_y * EF_y$$

Where,

BE_y is baseline emissions in year y, tCO₂e

EG_y is the net electricity supplied to the grid in year y and is applied directly from the invoice certified by state utility. This value can also be cross checked from the invoice.

EF_y is the CO₂ emission factor of the grid (0.87387 tCO₂e/MWh fixed ex-ante).

Emission reduction calculation for the period 01/09/2017 to 14/03/2020:

$$\begin{aligned} \text{Baseline Emissions (BE}_y\text{)} &= 161608.67 \text{ (MWh)} * 0.87387 \text{ (tCO}_2\text{e /MWh)} \\ &= 141,225 \text{ tCO}_2\text{e} \end{aligned}$$

Project emission:

As the proposed project utilizes wind resources for electricity generation, there is no fossil fuel consumption in the operation. So, as per applied methodology "ACM0002: (Version 06.0)". The project emission of the Wind power project is 0 tCO₂e.

Leakage emission:

As per applied methodology, no leakage emissions are considered. The emissions potentially arising due to activities such as power plant construction and upstream emissions from fossil fuel use (e.g., extraction, processing, transport etc.) are neglected.

Emission reductions

Emission reductions are calculated as follows:

$$ER_y = BE_y - PE_y$$

Where:

ER_y = Emission reductions in year y (Tco₂e/yr)

BE_y = Baseline emissions in year y (tCO₂e/yr)

PE_y = Project emissions in year y (tCO₂e/yr)

In summary, the Emission reductions of the project is equal to the baseline emission, i.e.: $ER_y = BE_y$.

In this monitoring period from 01/09/2017 to 14/03/2020, the amount of GHGs emission avoided or sequestered in project situation is 141,225 tCO₂e.

Data/Parameter	Value obtained in this monitoring period
SDG 13: Climate Action	141,225 tCO ₂ e

SDG 3 Good health and well-being: Coverage of essential health services (defined as the average coverage of essential services based on tracer interventions that include reproductive, maternal, newborn and child health, infectious diseases, non-communicable diseases and service capacity and access, among the general and the most disadvantaged population)

Data/Parameter	Value obtained in this monitoring period
SDG 3: Good health and well being	6

E.3. Calculation of leakage

>> No leakage is considered from the project activity as per approved methodology ACM0002.

E.4. Calculation of net benefits or direct calculation for each SDG Impact

SDG	SDG Impact	Baseline estimate	Project estimate	Net benefit
SDG 13	Climate Action	0	141,225 tCO ₂	141,225 tCO ₂
SDG 3	Good health and well-being	0	6	6
SDG 7	Affordable and Clean Energy	0	161,608.67 MWh	161,608.67 MWh
SDG 8	Decent Work and Economic Growth	0	6 trainings 7 employees	6 trainings 7 employees

E.5. Comparison of actual SDG Impacts with estimates in approved PDD

SDG	Values estimated in ex ante calculation of approved PDD for this monitoring period	Actual values ² achieved during this monitoring period
SDG 3 : Good health and well-being	2.5 Number of initiatives, events and programmes, primarily Health and Education Camps	6 Number of initiatives, events and programmes, primarily Health and Education Camps
SDG 7 : Affordable and Clean Energy	293355.83 MWh	161,608.67 MWh
SDG 8 Decent Work and Economic Growth	3 training 1 Employees	6 trainings 7 employees
SDG 13 Climate Action	256,335 tCO ₂	141,225 tCO ₂

E.5.1. Explanation of calculation of value estimated ex ante calculation of approved PDD for this monitoring period

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SDG 3: As per Transition Annex, minimum 100 people to be benefitted annually. Therefore, following unitary method, the amount of estimated ex ante for this monitoring period is identified. The total number of days in this monitoring period is 926 = (1/365)* 926 = 2.5 Number of initiatives, events and programmes, primary Health and Education Camps.

² Whenever emission reductions are capped, both the original and capped values used for calculations must be transparently reported. Use brackets to denote original values.

SDG 7: As per Transition Annex, 115,632 MWh is the amount of electricity generated annually. Therefore, following unitary method, the amount of estimated ex ante for this monitoring period is identified. The total number of days in this monitoring period is 926 = $(115632/365) \times 926 = 293356.8$ MWh

SDG 8: As per Transition Annex, Minimum 1 training to be carried out annually, therefore for this monitoring period 3 trainings needs to take place.

SDG 13 Climate Action: As per CDM registered PDD, 101,047 tCO₂e is the amount of CERs generated annually. Therefore, following unitary method, the amount of estimated ex ante for this monitoring period is identified. The total number of days in this monitoring period is 926 = $(101,047/365) \times 926 = 256,355$ tCO₂e

E.6. Remarks on increase in achieved SDG Impacts from estimated value in approved PDD

>> There is decrease of 44.91% in the expected and actual emission reductions during the current monitoring period. The decrease in the total emission reduction achieved during the current monitoring period is due to the lower wind availability during this monitoring period that lead to the lower PLF as compared to the PLF considered in the registered PDD (22%).

SECTION F. SAFEGUARDS REPORTING

>> Not applicable.

Safeguard principles were assessed in detail and reported under the registered GS-Passport and Transition document.

SECTION G. STAKEHOLDER INPUTS AND LEGAL DISPUTES

G.1. List all Inputs and Grievances which have been received via the Continuous Input and Grievance Mechanism together with their respective responses/mitigations.

>> No grievances received during the monitoring period together with their respective answers/actions. However, as part of organizational policy, continuous interactions have been undertaken by Project Participants officials with local community stakeholders and a register has been maintained for the said purpose at site office.

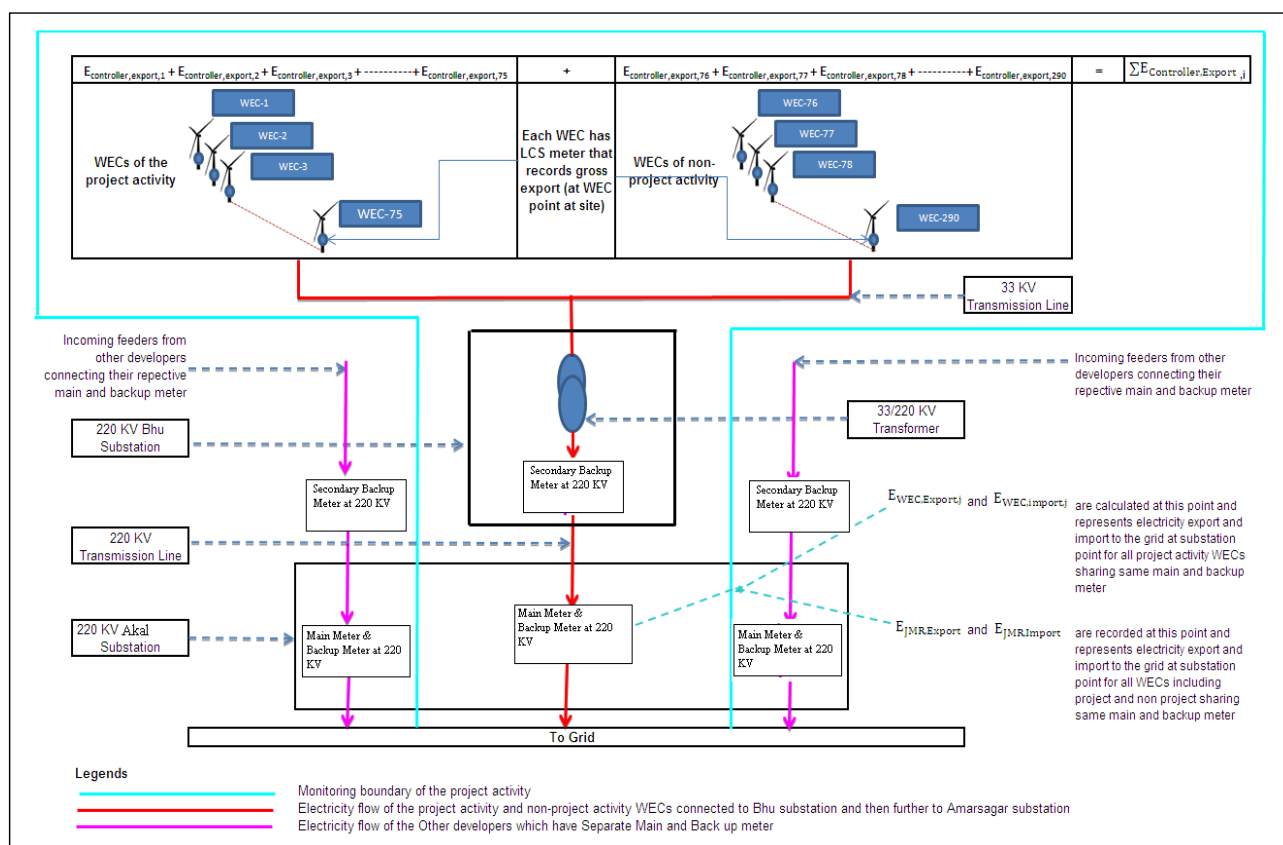
G.2. Report on any stakeholder mitigations that were agreed to be monitored.

>> No grievances received in the previous monitoring period, thus no follow up required.

G.3. Provide details of any legal contest that has arisen with the project during the monitoring period

>> No legal contest or dispute that has arisen with the project during the monitoring period.

Annex 1: Line Diagram Showing Relevant Metering



Revision History

Version	Date	Remarks
1.1	14 October 2020	Hyperlinked section summary to enable quick access to key sections Improved clarity on Key Project Information Section for POA monitoring Forward action request section Improved Clarity on SDG contribution/SDG Impact term used throughout Clarity on safeguard reporting Clarity on design changes Leakage section added for VER/CER projects Addition of Comparison of monitored parameters with last monitoring period Provision of an accompanying Guide to help the user understand detailed rules and requirements
1.0	10 July 2017	Initial adoption