



WIND ENERGY PROJECT IN SAMANA, GUJARAT AND SAUNDATTI, KARNATAKA

Document Prepared by Apraava Renewable Energy Private Limited¹

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¹ Previous name is CLP Wind Farm (India) Private Limited

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PROJECT DETAILS

1.1 Summary Description of the Implementation Status of the Project

The project activity being undertaken by Apraava Renewable Energy Limited (earlier known as CLP Wind Farms (India) Private Limited), is a greenfield project that involves the utilization of kinetic energy of wind for generation of electricity and supply to the Integrated Indian Grid (earliest North-East-West-North East (NEWNE) and Southern Regional grids). Presently, all Indian grids now synchronized and termed as Integrated Indian Grid.

This VCS project activity includes two sub-projects i.e. installation of 12 Wind Turbine Generators (WTGs) at s site in Gujarat and 55 WTGs at Saundatti site in Karnataka. The WTG has an individual capacity of 800 kW and are supplied by Wind World (India) Limited (formerly known as Enercon (India) Ltd.). The WTGs are of E-53 WWIL make and each individual WTG has a rating of 800 kW. The project activity involves installation of 53.6 MW WTGs in Gujarat and Karnataka site.

Site	No. of WTGs	Capacity of each WTG (MW)	Total Installed capacity (MW)	Grid
Samana	12	0.8 MW	9.6	Integrated Indian Grid
Saundatti	55	0.8 MW	44	Integrated Indian Grid
TOTAL	67	-	53.6	-

It is to be noted that, total installed capacity of Samana site is 50.4 (63*0.8) MW and entire capacity of the project is registered under CDM scheme (UNFCCC ref. no. 8955). However, only part of this Samana project (i.e. 9.6 (12*0.8) MW) as mentioned in above table is registered under VCS scheme. Similarly, total installed capacity of Saundatti site is 72 (90*0.8) MW and entire capacity of the project is registered under CDM scheme (UNFCCC ref. no. 6794). However, only part of this Saundatti project (i.e. 44.0 (55*0.8) MW) as mentioned in above table is registered under VCS scheme.

Salient features of the E-53 turbine are as follows:

- Gearless construction
- Continuous variable wind speed operation in sync with varying wind speeds
- Continuous variable pitch regulation of blades
- Three independent braking and lighting systems for blades
- Ability to withstand voltage fluctuations of -20% to +20% of nominal voltage
- Synchronous generator directly connected to turbine rotor
- Optimum adaptation to many grid voltages at different locations
- Maximum utilization of grid connection capacity for feeding in power.

E-53 Technical Specifications

- Rated capacity : 800 kW
- Rotor diameter : 52.9 m
- Tower height : 72-74 m (consists of both concrete and steel sections)
- Turbine concept : Gearless, variable speed, variable pitch control

The project activity utilises wind power to generate clean power with a view to bring in greenhouse gas emission reductions. The power generated from this project activity is being supplied to the state electricity grid which is a part of Integrated Indian grid. The Project is fully commissioned and is supplying electricity to Integrated Indian grid.

The Project activity is a new facility (Greenfield) and the purpose of the project activity is to generate energy electricity by the utilization of wind velocity power and further selling the generated energy to the Integrated Indian Grid. In this process there is no consumption of any fossil fuel and hence the project does not lead to any greenhouse gas emissions. Thus, electricity would be generated through sustainable means without causing any negative impact on the environment.

The Project activity helps to reduce the demand- supply gap in the country and also helps in contributing to the sustainable development by using wind energy as the source of power generation and reduction of GHG emissions. The first machine under this project activity was commissioned on 23-06-2010 and last machine was commissioned on 31-01-2011. The expected operational lifetime of the project is for 20 years.

The total emission reductions achieved during the monitoring period from 01-01-2024 to 31-12-2024 (both days inclusive) is 80,769 tCO₂.

1.2 Audit History

Audit type	Period	Program	Validation/verification body name	Number of years
Validation	Not applicable	VCS	URS Verification Private Limited (URS)	Not applicable
Verification	23/06/2010 - 30/06/2012	VCS	URS Verification Private Limited (URS)	2 years
Verification	01/07/2012 - 31/12/2012	VCS	URS Verification Private Limited (URS)	6 months
Verification	01/01/2013 - 31/12/2013	VCS	Earthood Services Private Limited	1 year
Verification	01/01/2014 - 31/03/2018	VCS	Earthood Services Private Limited	4 year 3 months
Verification	01/04/2018 -	VCS	LGAI Technological Center S.A.(Applus+	2 years 1

	30/04/2020		Certification)	month
Verification	01/05/2020 - 22/06/2020	VCS	Earthood Services Private Limited	1 month
Validation and Verification	23/06/2020 - 31/05/2021	VCS	Earthood Services Private Limited	11 months,
Verification	01-06-2021 - 30-09-2022	VCS	LGAI Technological Center S.A. (Applus+ Certification)	1 year, 3 months
Verification	01-10-2022 - 31-12-2023	VCS	Eco-lance Private Limited	1 year, 3 months
Verification	01-01-2024 - 31-12-2024	VCS	Eco-lance Private Limited	1 year

1.3 Sectoral Scope and Project Type

Sectoral scope ²	1 Energy Industries (renewable -/ non renewable sources)
Project activity type	Project Type: I, Renewable Energy Project

1.4 Project Proponent

Organization name	Apraava Renewable Energy Private Limited
Contact person	Jogendra Behera
Title	Head – Policy, Regulatory and Non-Utility Markets
Address	7th Floor, Fulcrum, Sahar Road, Andheri East, Mumbai - 400099
Telephone	+91- 22-67588888
Email	carbongroup@apraava.com

1.5 Other Entities Involved in the Project

Organization name	Not Applicable
Role in the project	Not Applicable

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

Contact person	Not Applicable
Title	Not Applicable
Address	Not Applicable
Telephone	Not Applicable
Email	Not Applicable

1.6 Project Start Date

Project start date	23-June-2010
Justification	The project start date is 23/06/2010 which is the date of commissioning of the first WTG installed under the project activity.

1.7 Project Crediting Period

Crediting period	☐ Seven years, twice renewable ☐ Ten years, fixed ☒ Other (state the selected crediting period and justify how it conforms with the VCS Program requirements) The project was registered under VCS 2007.1 which allowed crediting period of a maximum of 10 years which may be renewed at most two times. As per VCS standard 4, the second crediting period was renewed for duration of 10 years from 23-June-2020 to 22-June-30.
Start and end date of first or fixed crediting period	23-June-2020 to 22-June-30 (both days inclusive).

1.8 Project Location

Project is spread across two sites – Samana and Saundatti. Location details of these sites are as follows

Site 1: Samana

Taluk : Kalavad, Jamjodhpar, Upleta

District : Jamnagar and Rajkot

State : Gujarat

Host Party : India

The nearest airport and railway station are at Jamnagar city which is located at a distance of approximately 60 kms from the project activity site. The coordinates of individual WTGs of this site are as below:

Sr. No.	Unique Identification No.	GEDA Ref No.	Latitude	Longitude	Date of Commissioning
1	CLPSM-38	EIL/800/09-10/1615	22° 06' 20.1" N	70° 20' 13.1" E	12/07/2010
2	CLPSM-39	EIL/800/09-10/1616	22° 03' 00.8" N	70° 04' 21.9" E	12/07/2010
3	CLPSM-40	EIL/800/09-10/1695	22° 05' 45.4" N	70° 05' 46.2" E	28/01//2011
4	CLPSM-44	EIL/800/09-10/1696	22° 05' 35.8" N	70° 05' 53.6" E	28/01//2011
5	CLPSM-45	EIL/800/09-10/1697	22° 05' 27.8" N	70° 05' 46.6" E	28/01//2011
6	CLPSM-47	EIL/800/09-10/1699	22° 05' 13.5" N	70° 05' 44.2" E	28/01//2011
7	CLPSM-48	EIL/800/09-10/1700	22° 05' 04.8" N	70° 05' 40.8" E	28/01//2011
8	CLPSM-49	EIL/800/09-10/1701	22° 04' 57.9" N	70° 05' 42.1" E	28/01//2011
9	CLPSM-46	EIL/800/09-10/1698	22° 05' 22.0" N	70° 05' 44.3" E	31/01/2011
10	CLPSM-50	EIL/800/09-10/1702	22° 05' 05.5" N	70° 05' 09.2" E	31/01/2011
11	CLPSM-51	EIL/800/09-10/1703	22° 05' 00.0" N	70° 05' 06.9" E	31/01/2011
12	CLPSM-53	EIL/800/09-10/1704	22° 04' 51.6" N	70° 05' 04.3" E	31/01/2011

Site 2: Saundatti

Villages : Katamalli, Hooli, Vatnal, Gorbala, Basidoni, Mallapur, Goravanakolla, Haletorga

District : Belgaum

State : Karnataka

Host Party : India

The nearest airport and railway station are in Hubli city which is located at a distance of approximately 67 kms from the project activity site. The coordinates of individual WTGs of this site are as below:

Sr. No.	Unique Identification No.	CEIG Ref. No.	Latitude	Longitude	Date of Commissioning
1	CLPSN-36	CLP-40	15° 47' 40.6" N	75° 09' 56.9" E	23/06/2010
2	CLPSN-37	CLP-41	15° 47' 46.2" N	75° 09' 54.9" E	23/06/2010
3	CLPSN-38	CLP-43	15° 48' 01.1" N	75° 09' 57.5" E	23/06/2010
4	CLPSN-39	CLP-51	15° 49' 56.4" N	75° 11' 29.8" E	23/06/2010
5	CLPSN-40	CLP-52	15° 50' 04.2" N	75° 11' 30.6" E	23/06/2010
6	CLPSN-41	CLP-53	15° 50' 11.7" N	75° 11' 31.6" E	23/06/2010
7	CLPSN-42	CLP-54	15° 50' 19.2" N	75° 11' 34.2" E	23/06/2010
8	CLPSN-43	CLP-55	15° 50' 26.5" N	75° 11' 35.6" E	23/06/2010
9	CLPSN-44	CLP-56	15° 50' 35.7" N	75° 11' 40.9" E	23/06/2010
10	CLPSN-45	CLP-65	15° 50' 42.6" N	75° 11' 32.3" E	23/06/2010
11	CLPSN-46	CLP-66	15° 50' 48.6" N	75° 11' 32.8" E	23/06/2010
12	CLPSN-47	CLP-67	15° 50' 55.9" N	75° 11' 29.8" E	23/06/2010
13	CLPSN-48	CLP-68	15° 51' 02.2" N	75° 11' 28.6" E	23/06/2010
14	CLPSN-49	CLP-69	15° 51' 08.8" N	75° 11' 27.2" E	23/06/2010
15	CLPSN-50	CLP-59	15° 50' 58.8" N	75° 11' 45.5" E	23/06/2010
16	CLPSN-51	CLP-60	15° 51' 04.7" N	75° 11' 44.1" E	23/06/2010
17	CLPSN-52	CLP-61	15° 51' 09.9" N	75° 11' 41.7" E	23/06/2010
18	CLPSN-53	CLP-62	15° 51' 19.1" N	75° 11' 47.5" E	23/06/2010
19	CLPSN-54	CLP-63	15° 51' 27.9" N	75° 11' 53.0" E	23/06/2010
20	CLPSN-55	CLP-64	15° 51' 34.7" N	75° 11' 52.0" E	23/06/2010
21	CLPSN-56	CLP - 58	15° 50' 51.7" N	75° 11' 47.4" E	03/08/2010
22	CLPSN-57	CLP - 70	15° 51' 24.3" N	75° 12' 21.2" E	03/08/2010
23	CLPSN-58	CLP - 71	15° 51' 17.9" N	75° 12' 34.6" E	03/08/2010

Sr. No.	Unique Identification No.	CEIG Ref. No.	Latitude	Longitude	Date of Commissioning
24	CLPSN-59	CLP – 72	15° 51' 25.7" N	75° 12' 35.4" E	03/08/2010
25	CLPSN-60	CLP – 73	15° 51' 32.0" N	75° 12' 34.2" E	03/08/2010
26	CLPSN-61	CLP – 74	15° 51' 38.2" N	75° 12' 31.3" E	03/08/2010
27	CLPSN-62	CLP – 75	15° 51' 46.8" N	75° 12' 36.6" E	03/08/2010
28	CLPSN-63	CLP – 76	15° 51' 55.1" N	75° 12' 39.8" E	03/08/2010
29	CLPSN-64	CLP – 77	15° 52' 03.0" N	75° 12' 42.8" E	03/08/2010
30	CLPSN-65	CLP – 79	15° 51' 31.9" N	75° 13' 42.2" E	03/08/2010
31	CLPSN-66	CLP – 80	15° 51' 38.3" N	75° 13' 40.6" E	03/08/2010
32	CLPSN-67	CLP – 81	15° 51' 44.0" N	75° 13' 37.6" E	03/08/2010
33	CLPSN-68	CLP – 82	15° 51' 50.3" N	75° 13' 35.1" E	03/08/2010
34	CLPSN-69	CLP – 83	15° 51' 56.6" N	75° 13' 34.2" E	03/08/2010
35	CLPSN-70	CLP – 84	15° 52' 02.1" N	75° 13' 29.8" E	03/08/2010
36	CLPSN-71	CLP – 85	15° 52' 08.5" N	75° 13' 29.0" E	03/08/2010
37	CLPSN-72	CLP – 86	15° 52' 15.4" N	75° 13' 29.2" E	03/08/2010
38	CLPSN-73	CLP-92	15° 52' 22.9" N	75° 13' 40.0" E	03/08/2010
39	CLPSN-74	CLP-91	15° 52' 18.3" N	75° 13' 46.5" E	03/08/2010
40	CLPSN-75	CLP-90	15° 52' 13.4" N	75° 13' 51.8" E	03/08/2010
41	CLPSN-76	CLP-95	15° 52' 42.3" N	75° 13' 42.6" E	15/09/2010
42	CLPSN-77	CLP-96	15° 52' 51.0" N	75° 13' 44.7" E	15/09/2010
43	CLPSN-78	CLP-97	15° 52' 56.5" N	75° 13' 44.3" E	15/09/2010
44	CLPSN-79	CLP-98	15° 53' 03.1" N	75° 13' 46.0" E	15/09/2010
45	CLPSN-80	CLP-99	15° 53' 10.3" N	75° 13' 46.1" E	15/09/2010
46	CLPSN-81	CLP-57	15° 50' 45.3" N	75° 11' 49.2" E	15/09/2010

Sr. No.	Unique Identification No.	CEIG Ref. No.	Latitude	Longitude	Date of Commissioning
47	CLPSN-82	CLP-103	15° 53' 19.3" N	75° 14' 02.9" E	03/12/2010
48	CLPSN-83	CLP-102	15° 53' 12.6" N	75° 14' 05.0" E	03/12/2010
49	CLPSN-84	CLP-02	15° 49' 15.8" N	75° 06' 31.1" E	03/12/2010
50	CLPSN-85	CLP-03	15° 49' 23.5" N	75° 06' 47.8" E	03/12/2010
51	CLPSN-86	CLP-04	15° 49' 17.1" N	75° 06' 49.1" E	03/12/2010
52	CLPSN-87	CLP-05	15° 49' 10.4" N	75° 06' 49.8" E	03/12/2010
53	CLPSN-88	CLP-08	15° 48' 50.9" N	75° 06' 48.4" E	03/12/2010
54	CLPSN-89	CLP-09	15° 48' 43.7" N	75° 06' 46.6" E	03/12/2010
55	CLPSN-90	CLP-10	15° 48' 46.3" N	75° 06' 40.2" E	03/12/2010

1.9 Title and Reference of Methodology

Type (methodology, tool or module).	Reference ID, if applicable	Title	Version
Methodology	ACM0002	Grid-connected electricity generation from renewable sources	20
Tool	Not Applicable	Tool for the demonstration and assessment of additionality	7.0
Tool	Not Applicable	Tool to calculate the emission factor for an electricity system	7.0
Guidelines	Not Applicable	Guidance on assessment of investment analysis	5.0
Guideline	Not Applicable	Guidelines on demonstration of and assessment of prior consideration of the CDM	4.0
Not Applicable	Not Applicable	Assessment of the validity of the original/current baseline and update of	3.0.1

		the baseline at the renewal of the crediting period	
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1.10 Double Counting and Participation under Other GHG Programs

1.10.1 No Double Issuance

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

☐ Yes ☒ No

1.10.2 Registration in Other GHG Programs

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

☒ Yes ☐ No

Both sites of the Project are also registered as a separate CDM Project activity. Details of these CDM projects are as follows:

Site 1: Samana Site

Project Title: Wind based renewable energy project by CLP Wind Farms India Private Limited in Gujarat

UNFCCC Registration Number: 8955

Crediting period start date: 01/01/2013

CLP has not issued any CERs from this project

Site 2: Saundatti Site

Project Title: Wind Energy Project in Saundatti, Karnataka

CDM Registration Number: 6794

Crediting Period Start Date: 24/09/2012

CLP has issued CERs for the duration of 01/01/2013 to 01/10/2016

Further, the net GHG Emission reductions or removals generated by the project activity will not be used for compliance with an emission trading program or to meet binding limits on GHG Emissions.

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

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

Are project reductions and removals or project activities also included in an emissions trading program or binding emission limit?

☐ Yes ☒ No

1.11.2 No Double Claiming with Other Forms of Environmental Credit

Has the project activity sought, received, or is planning to receive credit from another GHG-related environmental credit system?

☐ Yes ☒ No

1.11.3 Supply Chain (Scope 3) Emissions

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

☐ Yes ☒ No

1.12 Sustainable Development Contributions

The project is already registered with VCS and currently undergoing periodic verification. The contribution of this project activity in terms of following four indicators of sustainable development as stipulated by the National CDM Authority (NCDMA) of India is provided below:

Social wellbeing:

Since, the project activity is in a rural area, it will aid in the development of the region by generating direct and indirect employment opportunities for the local people. The project activity will also cause development of infrastructure like roads which will benefit the population in the nearby areas.

Economic wellbeing:

The project has created a business opportunity for local stakeholders such as suppliers, manufacturers, contractors etc. Use of wind as a source of energy reduces the dependence on imported fossil fuels like coal and associated price variation thereby leading to increased energy security. It will also narrow the existing electricity supply gap in the State of Maharashtra as well as India.

Environmental wellbeing:

Since, the project uses renewable source for power generation; it does not lead to any greenhouse gas emission. Avoidance of fossil fuel consumption results in reduction of Sulphur

oxides (SO_x), Oxides of nitrates (NO_x) and particulate matter emission thus avoiding air pollution. The project activity is a step towards environmental sustainability by preventing exploitation and depletion of a natural, finite, and non-renewable resource (fossil fuels). Consumption of large quantities of water that is required in generation of electricity in current mix of power plants is avoided.

Technological wellbeing:

The technology leads to utilization of environmentally safe and sound technologies in power sector. The project harnesses wind power potential in the region and encourages setting up such projects in near future. Increased interest in wind energy projects will encourage Research & Development efforts by technology providers to develop more efficient and better equipment in future.

The project was registered with VCS before 20/01/2023 and currently undergoing period verification, hence it is not mandatory to demonstrate contributions to at least three SDGs before 20/01/2025.

Table 1: Sustainable Development Contributions

Row number	SDG target	SDG indicator	Net impact on SDG indicator	Current project contributions	Contributions over project lifetime
1)	7.2	7.2.1: Renewable energy share in the total final energy consumption	Implemented activities to increase	About 86,422.00 MWh renewable electricity has been supplied to Indian grid during the reported period that helps to increase the renewable energy share.	Overall, 1,083,274.76 MWh renewable electricity has been supplied to Indian grid throughout the project lifetime that helps to increase the renewable energy share in the energy mix
2)	8.6	8.6.1: Quality of Employment	Plant records or training records for employees/O&M Contractor	One Training was conducted during this verification period, The training was organized for staff on the technology, plant operation, emergency and safety procedure.	Overall, 1 Training has been provided, the training was organized for staff on the technology, plant operation, emergency and safety procedure.
3)	13.0	Tonnes of greenhouse gas emissions avoided or removed	Implemented activities to increase	By supplying 86,422.00 MWh of clean electricity to Indian grid, the project avoided release of 80,769 tCO₂e in to the atmosphere during the reporting period.	Overall prevented the release of 1,022,129 tCO₂e into the atmosphere since project commissioning.

1.13 Commercially Sensitive Information

The project activity involves installation of wind power project. Hence, there is no commercially sensitive information so this section is not applicable.

2 SAFEGUARDS AND STAKEHOLDER ENGAGEMENT

2.1 Stakeholder Engagement and Consultation

2.1.1 Stakeholder Identification

Stakeholder Identification	Stakeholders associated with the project activity throughout its lifetime are identified at different stages of project development. The stakeholders identified are generally grouped under two categories- directly affected parties, and indirectly affected parties as shown below: a) Representatives from EIL now WWIL; b) Employees of AREPL; c) Contractor of AREPL; d) Villagers from nearby villages Furthermore, all the stakeholders mentioned above were identified at the project's validation. There has been no change in stakeholder makeup since validation.
Legal or customary tenure/access rights	The project activity is a greenfield wind power project and it has not involved any legal or customary tenure/access rights to territories and resources. So, this section is not applicable
Stakeholder diversity and changes over time	Not applicable This is renewable energy project and does no impact on the diversity of the stakeholders.
Expected changes in well-being	There are not any significant impacts due to implementation of project activity on air, water, soil quality

	and ambience are envisaged due to the project activity. Furthermore, wind projects in India have indirect positive socio-economic impacts: a) Job Creation: Wind energy projects create jobs in various sectors, contributing to local economic growth. b) Economic Growth: These projects contribute to economic growth and community investment. c) Reduced Electricity Rates: Wind energy can reduce electricity rates for project neighbours. d) Health Benefits: Wind turbines help reduce carbon footprints and improve air quality, leading to better health outcomes. e) Educational Opportunities: They provide educational and research opportunities, fostering innovation and knowledge exchange.
Location of stakeholders	No negative impact generated outside/inside of the project boundary. (All stakeholders who will be directly affected by the project activity are included within the project boundary. Further, this grouped project activity does not require the relocation of any stakeholder, Indigenous people, or local communities.)
Location of resources	It is not applicable as in the project activity, neither any territories and resources are owned by the stakeholders, nor they have any customary access.

2.1.2 Stakeholder Consultation and Ongoing Communication

Ongoing consultation	Stakeholders' consultation is a continuous process and hence a feedback register is kept at the project site office where any stakeholder can come and share his/her feedback. The feedback irrespective of the type is taken care by PP with utmost priority.
Date(s) of stakeholder consultation	Samana, Gujarat: 25-10-2007 Saundatti, Karnataka: 12-03-2009

Communication of monitored results	Monitored outcomes are conveyed to the stakeholders in two ways: 1. Through VERRA Website: - PP submits third-party (i.e., VVB) verified monitoring results to VERRA, and once approved, the project documentation is made publicly available on the VERRA webpage for each monitoring period. 2. Through PP regional office: - A copy of all the project related documents and monitoring data (e.g., grievance register) is available at regional offices of the PP, which is accessible to all the stakeholders associated with the project activity.
Consultation records	The Local Stakeholder Consultation (LSC) records were submitted to VVB at the time of validation and grievance register records for the current monitoring period will be submitted to VVB.
Stakeholder input	Stakeholder input/feedback received during LSC and the LSC report for the same had been submitted to the VVB during validation. Furthermore, the stakeholder feedback/grievance received during the current MP, through ongoing consultation mechanism, has been taken care as per the standard procedure adopted by PP. There were no major comments from the stakeholders which could impact on the design of the grouped project.

2.1.3 Free, Prior, and Informed Consent

Consent	Before the project commissioning PP had taken appropriate approvals from relevant authorities.
Outcome of FPIC	It is not applicable as the project activity does not affect any type of property rights, and there are no ongoing or unresolved conflicts over property rights, usage, or resources. This project activity does not involve any encroachment on land, people's relocation, or forced physical or economic displacement.

2.1.4 Grievance Redress Procedure

Grievances received	Resolution and outcome
No grievance received during the current monitoring period.	The project has not received any negative comments from the stakeholders. Hence, it is not applicable.

The grievance mechanism process could be illustrated as below:

PP has placed a grievance register onsite where-in; the stakeholders can put down their request/complaint/requirements. Same is continuously monitored and appropriate action are also being taken by management. Furthermore, PP has also placed a notice board on site to communicate any necessary information/updates to local stakeholders. PP has found this two-way communication with local stakeholders is very effective towards sustainability of the project in long run.

As part of organizational policy, there are continuous interactions undertaken by Project Participant's officials with local community stakeholders. During these discussions, local villagers share their observations and comments. All the observations, comments and queries raised during discussion have been adequately responded to. Some of the suggestions have also been incorporated in the overall vision and stakeholder engagement action plan of the organization.

2.1.5 Public Comments

Summary of comments received	Actions taken
<i>Samana, Gujarat</i>	<i>Samana, Gujarat</i>
Is the project proponent going to implement any new technology in Samana?	The project proponent clarified that they have bought WEGs from WWIL India Limited and are implementing the wind farm project.
What kind of employment opportunities does this project offer to the local villagers?	
Village roads near to the wind farm are getting damaged due to heavy vehicles and what is the corrective action planned?	Local villagers are given preference for the manpower requirement of construction work as well as requirements during the operational life of the project.
<i>Saundatti, Karnataka</i>	Maintenance of roads at periodic intervals will be done by WWIL
How is the project useful for the local villagers?	<i>Saundatti, Karnataka</i>
	The project proponent clarified that the

Will there be employment opportunities for skilled labour available locally?	implementation of the project activity would entail direct and indirect employment opportunities. Further small business opportunities would lead to overall development of the villages. Furthermore, the local grid would be strengthened thereby ensuring availability of reliable power in the villages.
Will the installation of machines create noise and disturb the surroundings?	The project proponent clarified that Local villagers will be given preference for the manpower requirement of construction work as well as requirements during the operational life of the project. However, they would have to go through a proper selection procedure.
Will the implementation of the project activity have any impact on grazing of animals 4-5 years down the line?	The WWIL personnel clarified that they have already implemented WEGs in various villages in the neighboring Gadag district Area and no such problem has been reported anywhere owing to advanced machine design that ensures minimal noise.
	The project proponent clarified that there will be no impact of the wind farm on the grazing activity in the area.

2.2 Risks to Stakeholders and the Environment

2.2.1 Management Experience

The PP is Independent Power Producer (IPP) and has been in the renewable energy business for more than 20 years. PP has been actively involved in design or implementation of project activity. The management is experienced and well educated as per the understanding of the carbon market. The field staff has been trained well and annual trainings are provided to keep them up to date.

2.2.2 Risk assessment

	Risk identified	Mitigation or preventative measure(s) taken
Natural and human-induced risks to stakeholders' wellbeing	No risk identified	Project activity involves the installation of WTG which are consider as nature friendly and placed far away from human interference, hence no risk to human and nature.
Risks to stakeholder participation	No risk identified	Project activity only has benefits for the stakeholders as it provided clean energy with zero risk to human and nature.
Working conditions	No risk identified	Project activities create indirect livelihood opportunities for local people. The working conditions are inline with government norms.
Safety of women and girls	No risk identified	PP has Health, Safety, Security and Environment (HSSE) Policy and Prevention of Sexual Harassment at Work policies are stated as per the safety of both women and girls (Apraava Energy HSSE Policy, https://www.apraava.com/getmedia/cd8c962d-c86b-42db-8976-15c1d494b54d/Apraava-Energy-HSSE-Policy.pdf Prevention of Sexual Harassment at Workplace https://www.apraava.com/getmedia/b485f4e1-aaf3-49ae-9864-ea38aefbb18e/Handbook-on-Prevention-of-Sexual-Harassment-at-Workplace-Oct-2023.pdf)
Safety of minority and marginalized groups, including children	No risk identified	PP has followed all the regulations and safety protocols provided to the minority and marginalized groups. (Ref Apraava Energy Annual Integrated Report FY 2024-25)

Pollutants (air, noise, discharges to water, generation of waste, and release of hazardous materials and chemical pesticides and fertilizers)	No risk identified	The project activity involves installation of wind power project, which do not emit any kind of air, water, soil, and hazardous material.
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2.3 Respect for Human Rights and Equity

2.3.1 Labor and Work

	Risks identified ³	Mitigation or preventative measure(s) taken
Discrimination	Discrimination on the basis of individual's race, gender, age, disability, ethnicity or cultural affiliation, sexual orientation, belief, educational background, or any other basis.	PP is committed to providing an environment free from sexual harassment. PP follows company policy on 'Prevention of Sexual Harassment at the Workplace Policy' which protects from sexual harassment by vendors, contractors, and third parties. (Ref Human Rights Policy, https://www.apraava.com/getmedia/c5d64657-fa1d-4fad-a803-a8ca9727c2fa/Human-Rights-Policy.pdf Prevention of Sexual Harassment at Workplace https://www.apraava.com/getmedia/b485f4e1-aaf3-49ae-9864-ea38aefbb18e/Handbook-on-Prevention-of-Sexual-Harassment-at-Workplace-Oct-2023.pdf
Sexual harassment	Unwelcome acts or behavior (whether directly or by	The PP is Independent Power Producer (IPP) and has been in

³ The identified risks and commensurate mitigation or preventative measure(s) for forced labor, child labor, and human trafficking, must be inclusive of staff and contracted workers employed by third parties.

	implication)	the renewable energy business for more than 20 years. PP has been actively involved in design or implementation of project activity. PP has policies in place to inform management and employees about the avoidance of corruption, code of conduct, and business ethics.
Gender equity in labor and work	Biasness in hiring, promotions or terminations	The PP is Independent Power Producer (IPP) and has been in the renewable energy business for more than 20 years. The PP has policies in place to ensure fair opportunity and equal pay for work done to both men and women.
Forced labor	No risk identified	The PP is Independent Power Producer (IPP) and has been in the renewable energy business for more than 20 years. PP has policies which prohibits child labor or forced, involuntary or trafficked labor in any form. All employees shall treat one another with respect, dignity and common courtesy.
Child labor	No risk identified	The PP is Independent Power Producer (IPP) and has been in the renewable energy business for more than 20 years. PP has policies which prohibits child labor or forced, involuntary or trafficked labor in any form. All employees shall treat one another with respect, dignity and common courtesy.
Human trafficking	No risk identified	The PP is Independent Power Producer (IPP) and has been in the renewable energy business for more than 20 years. PP has

		policies which prohibits child labor or forced, involuntary or trafficked labor in any form. All employees shall treat one another with respect, dignity and common courtesy.
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2.3.2 Human Rights

Risks identified	Mitigation or preventative measure(s) taken
No risk identified	There have been no human rights violation with any stakeholders during construction and operation of the project activity.

2.3.3 Indigenous Peoples and Cultural Heritage

Risks identified	Mitigation(s) or preventative measure taken
No risk identified	The project activity is a greenfield Wind power project and wind mills are installed in approved/permitted areas. The project does not affect the indigenous people and their cultural heritage.

2.3.4 Property Rights

Risks identified	Mitigation or preventative measure(s) taken
No risk identified	The project activity is a greenfield wind power project. This project does not infringe with property rights and resources. Hence, there is no need to implement any measures to protect and preserve the property rights of stakeholders, IPs, LCs, and customary rights holders.

2.3.5 Benefit Sharing

Summary of the benefit sharing plan	Project activity is a greenfield wind power project where the benefit sharing is not applicable.
Benefit sharing during the	Not applicable because the project activity does not have any impacts property right.

monitoring period

2.4 Ecosystem Health

Risk identified		Mitigation or preventative measure(s) taken during the monitoring period
Impacts on biodiversity and ecosystems	No risk identified	The project activity is wind power plant. This project activity does not involve any activity which may negatively impact biodiversity and ecosystem.
Soil degradation and soil erosion	No risk identified	The project activity is wind power plant. This project activity does not involve any activity which may result in soil degradation and soil erosion.
Water consumption and stress	No risk identified	The project activity is wind power plant. This project activity does not involve any activity which may consume water or result in any kind of water stress.

2.4.1 Rare, Threatened, and Endangered species

Species or habitat	After installation or during the install of WTGs there is no impact to the rare, threatened or endangered species of the surroundings.
Areas needed for habitat connectivity	Not Applicable

Risks identified		Mitigation or preventative measure(s) taken
Habitats for rare, threatened, and endangered species	No risk identified	Not Applicable
Areas for habitat connectivity	No risk identified	Not Applicable

2.4.2 Introduction of species

This project activity neither involve any planting activities nor introduction of species. Hence, not applicable.

Species introduced	Classification	Justification for use	Adverse effects and mitigation
Not Applicable	Not Applicable	Since the project activity is greenfield wind power project, it is not applicable as project activity does not introduce any species.	Not Applicable

This grouped project activity does not involve introduction of any species which may be invasive in nature.

Existing invasive species	Mitigation measures to prevent the spread or continued existence of invasive species
Not Applicable	Not Applicable

	Risks identified	Mitigation or preventative measure(s) taken
Invasive species	Not Applicable	Not Applicable

2.4.3 Ecosystem conversion

The project activity is a greenfield wind power project. This project activity does not involve ARR, ALM, WRC or ACoGS activities. Hence, not applicable.

	Risks identified	Mitigation or preventative measure(s) taken
Ecosystem conversion	Not Applicable	Not Applicable

3 IMPLEMENTATION STATUS

3.1 Implementation Status of the Project Activity

All the WTGs of the Project have been commissioned and the Project is fully implemented. The commissioning dates of the individual WTGs have been provided in section 1.7.

Events that may impact the GHG emission reductions or removals and monitoring.

No such events took place during the monitoring period that may impact the GHG emission reductions for the project activity. The project activity has been exporting electricity continuously

since commissioning. There were neither major breakdowns nor other events for the project activity during the monitoring period that may impact the GHG emission reductions for the project activity.

3.2 Deviations

3.2.1 Methodology Deviations

There are no deviations related to methodology.

3.2.2 Project Description Deviations

PP name has been changed from CLP Wind Farm (India) Private Limited to Apraava Renewable Energy Private Limited with effect from 21/12/2021 as mentioned in section 1.1.

3.3 Grouped Projects

Not applicable, as the project is not a grouped project.

3.4 Baseline Reassessment

Did the project undergo baseline reassessment during the monitoring period?

☐ Yes ☒ No

4 DATA AND PARAMETERS

4.1 Data and Parameters Available at Validation

Data / Parameter	EF _{Integrated,grid,OM,y}
Data unit	tCO ₂ e/MWh
Description	Operating Margin emission factor for Integrated Indian grid
Source of data	Referred from CO ₂ Baseline Database for the Indian Power Sector prepared by Central Electricity Authority Version 16.0.
Value applied	0.9568
Justification of choice of data or description of measurement methods and procedures applied	Calculated it as CEA sourced data 3 years vintage data (2017-18, 2018-19 and 2019-20) and option of ex ante calculation based on Simple Operating Margin Method. Computed once during PDD finalization.
Purpose of data	To calculate the baseline emission calculation
Comments	This value is determined and fixed ex-ante.

Data / Parameter	EF _{Integrated,grid,BM,y}
Data unit	tCO ₂ e/MWh
Description	Build Margin emission factor for Integrated Indian grid
Source of data	Referred from CO ₂ Baseline Database for the Indian Power Sector prepared by Central Electricity Authority Version 16.0.
Value applied	0.8682 tCO ₂ e/MWh
Justification of choice of data or description of measurement methods and procedures applied	Calculated as per CEA sourced data for the year 2019-20. The build margin is calculated in this database as the average emissions intensity of the 20% most recent capacity additions in the grid based on net generation and option of ex ante calculation. Computed once during PD finalization.
Purpose of Data	To calculate the baseline emission calculation
Comments	This value is determined and fixed ex-ante.

Data / Parameter	EF _{Integrated,grid,CM,y}
Data unit	tCO ₂ e/MWh
Description	Combined Margin CO ₂ emission factor for Integrated Indian grid
Source of data	Estimated figure based on 75% of OM and 25% of BM values
Value applied	0.9346 tCO ₂ e/MWh
Justification of choice of data or description of measurement methods and procedures applied	CEA has calculated it as per ACM0002 with 3 years vintage data and option of ex ante calculation based on 75% of OM and 25% of BM values approach. Computed once during PDD finalization.
Purpose of Data	To calculate the baseline emission calculation
Comments	This value is determined and fixed ex-ante.

4.2 Data and Parameters Monitored

Site 1: Samana

Data / Parameter	EG _{Samana,WTG,i}
Data unit	MWh
Description	Quantity of electricity generated by ith WTG at Samana site
Source of data	LCS meter data
Description of measurement methods and procedures to be	The quantity of electricity generated by ith WTG at Samana site is measured and recorded by the LCS meter at the WTG controller end.

applied	
Frequency of monitoring/recording	Measured continuously and recorded daily
Value monitored	18,236.43 MWh
Monitoring equipment	LCS meter at the WTG controller end would be used for monitoring and LCS meters do not require calibration.
QA/QC procedures to be applied	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 WTGs. 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 machine will stop working and generate the error report.
Purpose of the data	Calculation of baseline emissions
Calculation method	Not applicable
Comments	The data will be kept for two years after the end of the crediting period or the last issuance of VCUs for this project activity, whichever occurs later.

Data / Parameter	EG _{Samana, facility, y}
Data unit	MWh
Description	Quantity of net electricity generation supplied by the project activity to the Integrated Indian grid in year y
Source of data	Joint Meter Reading Sheets/Energy Share Certificate ⁴ and WTG Controller End Data
Description of measurement methods and procedures to be applied	Net electricity generated by the wind farm is monitored using a main meter at the grid interconnection point in the substation maintained by Wind World India Limited (previously known as Enercon (India) Limited). There are numerous WTGs apart from those included in this project that are connected to the main meter. The net electricity delivered by the Samana sub-project would be calculated by proportionally dividing the metered net generation among the connected WTGs on the basis of the prorata readings taken at the WTG controller end. The net electricity supplied by the wind farm to the Integrated Indian grid is determined as the difference between the quantity of electricity supplied by the wind farm to the grid and the quantity of electricity delivered to the wind farm from the grid.

⁴ Issued by Gujarat Energy Transmission Corporation Limited

	Joint meter readings for the net energy generation by the wind farm are taken in the presence of Wind World India Limited (previously known as Enercon (India) Limited) and grid officials every month.
Frequency of monitoring/recording	Measured continuously and recorded monthly
Value monitored	17,592.47 MWh
Monitoring equipment	Main meter is installed at the grid interconnection point in the substation maintained by Wind World India Limited (previously known as Enercon (India) Limited). The serial number of bi-directional energy meters which are L&T make with an accuracy class of 0.2 s is provided below: GJ-2458-A (Main meter) GJ-2459-A (Check Meter). -
QA/QC procedures to be applied	Calibration of the main meter shall be done once every three years.
Purpose of the data	Calculation of baseline emissions
Calculation method	$EG_{\text{Integrated, facility, y}} = \text{Net wind farm generation} * (\text{Electricity generation by project WTGs} / \text{Electricity generation by wind farm WTGs})$
Comments	The data will be kept for two years after the end of the crediting period or the last issuance of VCUs for this project activity, whichever occurs later.

Site: Saundatti

Data / Parameter	$EG_{\text{Saundatti, WTG, i}}$
Data unit	MWh
Description	Quantity of electricity generated by ith WTG at Saundatti site
Source of data	LCS meter data
Description of measurement methods and procedures to be applied	LCS meter at the WTG controller end would be used for monitoring.
Frequency of monitoring/recording	Measured continuously and recorded daily
Value monitored	70,609.16 MWh
Monitoring equipment	LCS meter at the WTG controller end would be used for monitoring and LCS meters do not require calibration.

QA/QC procedures to be applied	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 WTGs. 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 machine will stop working and generate the error report.
Purpose of the data	To calculate Baseline Emissions calculation
Calculation method	Not applicable
Comments	The data will be kept for two years after the end of the crediting period or the last issuance of VCUs for this project activity, whichever occurs later.

Data / Parameter	EG _{Saundatti, facility, y}
Data unit	MWh
Description	Quantity of net electricity generation supplied by the project activity to the Integrated Indian grid in year y
Source of data	Joint Meter Reading Sheets/B form ⁵ and WTG Controller End Data
Description of measurement methods and procedures to be applied	Net electricity generated by the wind farm is monitored using a main meter at the grid interconnection point in the substation maintained by Wind World India Limited (previously known as Enercon (India) Limited). There are two transformers, each transformer has main and check meters installed on individual sites. There are numerous WTGs apart from those included in this project that are connected to the main meter. The net electricity delivered by the Saundatti sub-project would be calculated by proportionally dividing the metered net generation among the connected WTGs on the basis of the prorata readings taken at the WTG controller end. The net electricity supplied by the wind farm to the Integrated Indian grid is determined as the difference between the quantity of electricity supplied by the wind farm to the grid and the quantity of electricity delivered to the wind farm from the grid. Joint meter readings for the net energy generation by the wind farm are taken in the presence of Wind World India Limited (previously known as Enercon (India) Limited) and grid officials every month.
Frequency of monitoring/recording	Measured continuously and recorded monthly
Value monitored	68,829.53 MWh
Monitoring equipment	Main and check meters are installed at the grid interconnection point in the substation maintained by Wind World India Limited (Enercon (India)

⁵ Issued by Hubli Electricity Supply Company Limited

	Limited). The serial number bi-directional meters which are L&T make with an accuracy class of 0.2 s are provided below: Transformer 1 Main Meter 21006810 Check Meter 21006811 Transformer 2 Main Meter 21006802 Check Meter 21006822 The details of the same are provided in Appendix 2.
QA/QC procedures to be applied	Calibration of the main and check meters shall be done once every three years.
Purpose of the data	Calculation of baseline emissions
Calculation method	$EG_{\text{Saundatti, facility, y}} = \text{Net wind farm generation} * (\text{Electricity generation by project WTGs} / \text{Electricity generation by wind farm WTGs})$
Comments	The data will be kept for two years after the end of the crediting period or the last issuance of VCUs for this project activity, whichever occurs later.

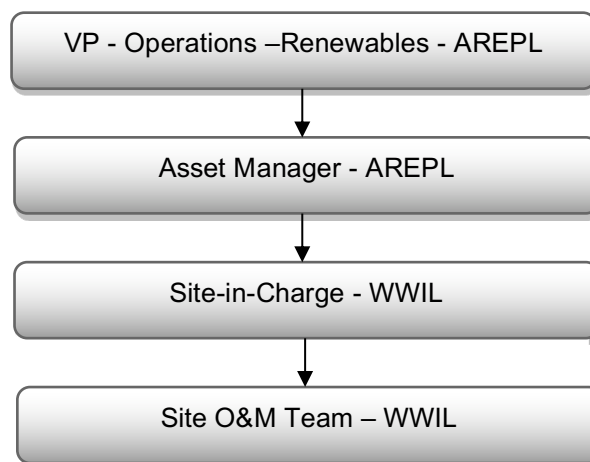
4.3 Monitoring Plan

The monitoring plan is being devised as per approved consolidated monitoring methodology ACM0002 Version 20.0.0 - “Grid-connected electricity generation from renewable sources”.

The electricity exported to and imported from the grid would be measured using bi-directional main and check meters of accuracy class 0.2s installed at the sub-station (as explained under monitoring parameters). The consumption registered by the main meter alone will hold good for the purpose of estimation of the emission reductions as long as the error in the main meter is within the permissible limits.

To ensure trouble free operations and efficient generations through all the wind turbines, AREPL WFPL has entered into a comprehensive Operation and Maintenance agreement with the manufactures of the turbines. The contractor, Wind World India Limited (previously known as Enercon (India) Limited (EIL)), under the O&M contract with AREPL WFPL would be responsible for the operation and maintenance of the project activity for the entire crediting period.

The responsibility of project management as well as registration, monitoring, measurement and reporting lies with AREPL WFPL. AREPL WFPL has envisaged a Project Team to ensure proper and continuous monitoring of the performance of turbines and generation of power. The same has been outlined as follows:



The O&M personnel are qualified engineers and are trained at the WTG manufacturing facility of Wind World India Limited (previously known as Enercon (India) Limited) at Daman for operating and ensuring best performance of the WTGs.

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

Metering Equipment: Metering equipment shall be bidirectional electronic meters of accuracy class 0.2s required for the Project (both main and check meter).

Meter Readings: The monthly meter readings (both main and check meters) at the sub-station shall be taken jointly by the grid authority and WWIL.

Meter Test Checking: Main and check meters shall be tested for accuracy once every three years. The meters shall be deemed to be working satisfactorily if the errors are within specifications for meters of 0.2s accuracy class. The previous calibration validity of the Samana main/check meters ended on 15/06/2024, and the subsequent calibration was completed on 06/05/2025. Due to this delay in calibration, the Project Proponent (PP) applied a conservative maximum error factor of -0.2% to the emission reduction calculations for the period 01/06/2024 to 31/12/2024.

WTG controller (LCS) readings: The pro-rata allocation is based on WTG controller (LCS) readings obtained from the SCADA system. Each wind turbine generator (WTG) is controlled by a Local Controller (LC/LCS – Local Control System), which collects operational data for monitoring and control purposes. The LCS meters do not require separate calibration, as the electricity generation recorded by the LCS is continuously cross-verified against the energy calculated by the inverter system installed in each WTG. In the event of any mismatch between

the energy values recorded by the LCS and those calculated by the inverter system beyond predefined thresholds, the turbine is automatically shut down and an error report is generated.

Records: O&M Contractor WWIL will maintain an accurate and up-to-date operating log at the wind farm. All the records will be preserved for 2 years beyond the crediting period.

Emergency procedures: The Samana site has four main meters installed at the grid interconnection point in the substation maintained by Wind World India Limited (previously known as Enercon (India) Limited). In case any meter becomes defective, the load would be switched to the other operational meters so that there is no lapse in recording of electricity generation data. The Saundatti site has two main and two check meters installed at the grid interconnection point in the substation. In case a main meter becomes defective, the readings of the check meter would be used for the purpose of billing and calculation of emission reductions.

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.

Apportioning of electricity: In case dates of monitoring period do not match with the dates of Joint Meter Readings the following apportioning formula would be used to estimate the electricity generation for calculating emission reductions:

X = Electricity generation recorded at LCS Meter by project activity WTGs between start/end date of monitoring period and date of billing cycle

Y = Electricity generation recorded at LCS Meter by project activity WTGs in the particular month for which Joint Meter Reading has been taken

Z = Net energy exported from project activity WTGs

Electricity Generation = $(X/Y) * Z$

The above apportioning formula has been applied to calculate share of generation for 1.6 MW generation at Samana site and 44 MW generation at Saundatti site.

5 QUANTIFICATION OF GHG EMISSION REDUCTIONS AND REMOVALS

5.1 Baseline Emissions

The baseline emissions are calculated as follows:

$$BE_y = EG_{PJ,y} \cdot EF_{\text{Integrated grid, CM, y}}$$

Where:

BE_y = Baseline emissions in year y (tCO₂)

$EG_{PJ,y}$ = Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the project activity in year y (MWh)

$EF_{grid,CM,y}$ = Combined margin CO₂ emission factor for Integrated Indian grid connected power generation in year y calculated using the latest version of the “Tool to calculate the emission factor for an electricity system”

Since the project activity is the installation of a new grid-connected renewable power plant/ unit at a site where no renewable power plant was operated prior to the implementation of the project activity, therefore:

$$EG_{PJ,y} = EG_{facility,y}$$

Where:

$EG_{PJ,y}$ = Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the project activity in year y (MWh)

Baseline emissions for Samana Site:

Vintage Period	Net Electricity Export (MWh)	Emission Factor (tCO ₂ /MWh)	Baseline Emissions (tCO ₂)	Project Emissions (tCO ₂)	Leakage (tCO ₂)	Emission Reductions (tCO ₂)
2024 (01/01/2024 to 31/12/2024)	17,592.47	0.9346	16,441	-	-	16,441
Total	17,592.47		16,441	-	-	16,441

Baseline emissions for Saundatti Site:

Vintage Period	Net Electricity Export (MWh)	Emission Factor (tCO ₂ /MWh)	Baseline Emissions (tCO ₂)	Project Emissions (tCO ₂)	Leakage (tCO ₂)	Emission Reductions (tCO ₂)
2024 (01/01/2024 to 31/12/2024)	68,829.53	0.9346	64,328	0	0	64,328
	68,829.53		64,328	0	0	64,328

Baseline emissions for Project activity:

Vintage Period	Baseline Emissions (tCO ₂)	Project Emissions (tCO ₂)	Leakage (tCO ₂)	Emission Reductions (tCO ₂)
2024 (01/01/2024 to 31/12/2024)	80,769	0	0	80,769
	80,769	0	0	80,769

5.2 Project Emissions

The project activity involves harnessing of wind energy and its conversion to electricity. Hence according to ACM0002 Version 20.0.0, there will be no project emissions in the project activity $PE_y = 0$.

5.3 Leakage Emissions

As per ACM0002 Version 20.0.0, no leakage has been considered for the calculation of emission factor.

5.4 GHG Emission Reductions and Carbon Dioxide Removals

According to the approved methodology ACM0002 (Version 20.0.0) Emission Reductions are calculated as

$$ER_y = BE_y - PE_y$$

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)

Thus,

$$\begin{aligned} ER_y &= 80,769 - 0 \text{ tCO}_2\text{e} \\ &= 80,769 \text{ tCO}_2\text{e} \end{aligned}$$

For projects that are not required to assess permanence risk, complete the table below for the project crediting period:

Vintage period	Baseline emissions (tCO ₂ e)	Project emissions (tCO ₂ e)	Leakage emissions (tCO ₂ e)	Reduction VCU's (tCO ₂ e)	Removal VCU's (tCO ₂ e)	Total VCU's (tCO ₂ e)
2024 (01/01/2024 to 31/12/2024)	80,769	0	0	80,769	0	80,769
Total	80,769	0	0	80,769	0	80,769

Vintage period	Ex-ante estimated reductions/removals	Achieved reductions/removals	Percent difference	Explanation for the difference
01/01/2024 to	1,09,259	80,769	26.08%	The actual emission reductions for the current monitoring

31/12/2024				period are 26.08 % lower than estimated emission reductions which are mainly due to poor availability of wind at site. Wind availability is a natural phenomenon which is beyond the control of AREPL.
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APPENDIX 1: COMMERCIALY SENSITIVE INFORMATION

Section	Information	Justification
Not applicable	Not applicable	The project activity is greenfield wind power project, there are no commercially sensitive information so this section is not applicable.

APPENDIX 2: CALIBRATION DETAILS OF METERS

Samana Site:

Sl. No.	Meter Type	Meter Identification No	Meter Make	Accuracy Class	Previous Calibration Date	Previous Calibration Validity*	Latest Calibration Date	Calibration Expiry Date
01	Main Meter	GJ-2458-A	L&T	0.2s	16/06/2021	15/06/2024	06/05/2025	05/05/2028
02	Check Meter	GJ-2459-A	L&T	0.2s	16/06/2021	15/06/2024	06/05/2025	05/05/2028

*Due to delay in calibration, PP has applied maximum error factor (-0.2%) in emission reduction calculations from 01/06/2024 to 31/12/2024.

Saundatti Site:

Sl. No.	Transformer No	Meter Type	Meter Identification No	Meter Make	Accuracy Class	Calibration Date	Calibration Expiry Date
1	Transformer - 1	Main Meter	21006810	L&T	0.2s	03/03/2022	02/03/2025
		Check Meter	21006811	L&T	0.2s	03/03/2022	02/03/2025
2	Transformer - 2	Main Meter	21006802	L&T	0.2s	03/03/2022	02/03/2025
		Check Meter	21006822	L&T	0.2s	03/03/2022	02/03/2025