Gold Standard for the Global Goals

TEMPLATE

KEY PROJECT INFORMATION & PROJECT DESIGN DOCUMENT (PDD)

PUBLICATION DATE **29.06.2023**

VERSION **v.1.5**

RELATED SUPPORT

- TEMPLATE GUIDE Key Project Information & Project Design Document

This document contains the following Sections

SECTION A. DESCRIPTION OF PROJECT
SECTION B. APPLICATION OF APPROVED GOLD STANDARD METHODOLOGY (IES) AND/OR DEMONSTRATION OF SDG CONTRIBUTIONS
SECTION C. DURATION AND CREDITING PERIOD
SECTION D. SUMMARY OF SAFEGUARDING PRINCIPLES AND GENDER SENSITIVE ASSESSMENT
SECTION E. SUMMARY OF LOCAL STAKEHOLDER CONSULTATION

Appendix 1 - Safeguarding Principles Assessment (mandatory)
Appendix 2 - Contact information of project developer(s) (mandatory)
Appendix 3 - LUF Additional Information (project specific)
Appendix 4 - Design Changes

KEY PROJECT INFORMATION

GS ID of Project	GS6290
Title of Project	200 MW Wind Power Project in Tamil Nadu by Orange Sironj
Time of First Submission Date	11/08/2019
Date of Design Certification	26/11/2019
Version number of the PDD	05
Completion date of version	27/06/2024
Project Developer	Greenko Sironj Wind Power Pvt Ltd.[1]
Project Representative	Infinite Environmental Solutions limited
Project Participants and any communities involved	NA
Host Country (ies)	India
Activity Requirements applied	☐ Community Service Activity ☒ Renewable Energy ☐ Land-Use and Forests Activity Requirements/Risks & Capacities ☐ N/A
Scale of the project activity	☐ Micro scale ☐ Small Scale ☒ Large Scale
Other Requirements applied	NA
Methodology (ies) applied and version number	ACM0002: Grid-connected electricity generation from renewable sources - Version 21.0[2]
Product Requirements applied	☒ GHG Emissions Reduction & Sequestration ☐ Renewable Energy Label ☐ N/A

[1] Orange Sironj Wind Power Pvt Ltd was the investor of this project activity, but the name 'Orange Sironj Wind Power Pvt Ltd' is now changed to 'Greenko Sironj Wind Power Pvt Ltd.' from 28/12/2021 as per the Certificate of Incorporation pursuant to change of name, MINISTRY OF CORPORATE AFFAIRS, GOVERNMENT OF INDIA

[2] https://cdm.unfccc.int/UserManagement/FileStorage/ZPFJL01OU2RYC6N3HASIXV7K84QBG9

Project Cycle:	☐ Regular ☒ Retroactive

Table 1 – Estimated Sustainable Development Contributions

SUSTAINABLE DEVELOPMENT GOALS TARGETED	SDG IMPACT (DEFINED IN B.6)	ESTIMATED ANNUAL AVERAGE	UNITS OR PRODUCTS
7 Affordable and Clean Energy	MWh of renewable energy generated	635,976	MWh/Annum
8 Decent Work and Economic Growth	Trainings	1	No. of Training/year
	Employees	15	No. of Jobs
13 Climate Action (mandatory)	Emission Reduction	594,764	GSVERs

SECTION A. DESCRIPTION OF PROJECT

A.1 Purpose and general description of project

The main purpose of the project activity is to generate electrical energy through sustainable means using wind power resources, the generated green electricity is contributing to climate change mitigation efforts. This project activity is a large-scale wind project. Greenko Sironj Wind Power Pvt Ltd. (earlier it was Orange Sironj Wind Power Pvt Ltd) is the project investor for this project activity. The project will replace anthropogenic emissions of greenhouse gases (GHG's) estimated to be approximately 594,764 tCO_2e per annum, thereon displacing 635,976 MWh/year amount of electricity from the generation-mix of power plants connected to the Indian electricity grid, which is mainly dominated by thermal/ fossil fuel-based power plant.

The details of the project are mentioned in the table:

Project Investors' Name	Capacity in MW_{AC}	State
Greenko Sironj Wind Power Pvt Ltd.	200	Tamil Nadu

The project activity involves installation of 100 nos of 2MW WTGs of Gamesa make, (model - G114/2000kW IEC Class S model year version with 106m height of tower) with total installed capacity of 200 MW.

The project proponent had placed operation and maintenance contract with the WTG Suppliers (Siemens Gamesa Renewable Private Limited (Gamesa) for the operation and maintenance the WTGs. The supplier has a very good and skillful O and M team for the daily plant maintenance and operation during all circumstances. The commissioning details of the WTG's are mentioned below:

WTGs (Nos)	Commissioning date	Commercial operation as per SECI
50	05/03/2019	07/03/2019
50	13/03/2019	14/04/2019

The project activity is the installation of a new grid-connected renewable power plant/unit and this is not a CPA that has been excluded from a registered CDM PoA as a result of erroneous inclusion of CPAs.

Scenario existing prior to the implementation of the project activity

As the project activity is the installation of a new grid-connected renewable power plant/unit. The scenario existing prior to the implementation of project activity is

Electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources, as reflected in the combined margin (CM) calculations described in the "Tool to calculate the emission factor for an electricity system" (Version 07)[3].

Project Boundary:

The project activity includes 200 MW installed capacity promoted by Greenko Sironj Wind Power Pvt Ltd. and is a large wind power plant with an installed capacity above 15 MW. The purpose of the project activity is to generate clean electricity with utilization of wind energy. The project consists of 100 Wind Turbine Generators (WTGs) of 2.0 MW capacities each. The project activity evacuates the power to the INDIAN grid. Therefore, all the power plants contributing electricity to the Integrated grid have been considered in the project boundary for the purpose of baseline estimation. The project activity targets reduction of CO_2e as main GHG greenhouse gas in baseline.

Baseline Scenario:

As the project activity is the installation of a new grid-connected renewable power plant/unit, the baseline scenario is the following as per applied methodology: Electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources, as reflected in the combined margin (CM) calculations described in the "Tool to calculate the emission factor for an electricity system" –Tool 7, version 7.0, EB 100, Annex 4. Hence, pre-project scenario and baseline scenario are the same.

The estimation of GHG reductions by this project is limited to carbon dioxide (CO_2) only. Thus, the project activity leads to an emission reduction of 2,973,820 tCO_2e for the chosen crediting period of 5 years renewable with the annual average emission reduction of 594,764 tCO_2e.

Project Contribution to Sustainable development:

The National CDM Authority (NCDMA), which is the Designated National Authority (DNA) for the Government of India (GOI) under the Ministry of Environment, Forest and Climate Change (MoEFCC), has mentioned four indicators for the sustainable development in the interim approval guidelines for Clean Development Mechanism

[3] https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-07-v7.0.pdf

(CDM)[4] projects from India. Thus, the project's contribution towards sustainable development has been addressed based on the following sustainable development aspects:

- **Social well-being:**

The project activity provides job opportunity to local people during erection, commissioning and maintenance of the Wind power project. Frequency of visiting to villages and nearby areas by skilled, technical and industrialist has increased due to installation /site visit/operation and maintenance work related to WTGs at plant site. This directly and indirectly positively effects the economy of nearby populace.

- **Environmental well-being:**

Wind power is one of the cleanest renewable energy powers and does not involve any fossil fuel. There are no GHG emissions. The impact on land, water, air and soil is negligible. Thus, the project activity contributes to environmental well-being without causing any negative impact on the surrounding environment.

- **Economic well-being:**

The project activity generates permanent and temporary employment opportunity within the vicinity of the project. The electricity supply in the nearby area improves which directly and indirectly improves the economy and life style of the area.

- **Technological well-being:**

The project activity is step forward in harnessing the untapped wind potential and further diffusion of the Wind technology in the region. The project activity leads to the promotion and demonstrates the success of wind projects in the region which further motivate more investors to invest in Wind power projects. Hence, the project activity leads to technological well-being.

A.1.1. Eligibility of the project under Gold Standard

The project type is a 200 MW large scale Wind Power Plant which generates power using wind energy. The project activity belongs to the type of Renewable energy that generate and deliver power to the INDIAN grid. The project applies methodology ACM0002 Version 21.0, which is an approved methodology under Gold Standard. The project was submitted to GS4GG for preliminary review before 24/01/2020 and hence meets the

[4] https://cdm.unfccc.int/

eligibility criteria published in latest version 1.4 of Renewable Energy Activity Requirement [5].

The project activity meets the general eligibility criteria as per section 3.1.1 of GS4GG Principles & Requirements version 1.2[6] document as described below:

Sr. No.	Eligibility Criteria Category	Justification
1	Demonstrate if project is pre identified as eligible by being referenced in Gold Standard Activity Requirements, Impact Quantification Methodologies or Product Requirements	The Project activity is already registered in GS4GG, and it meets all eligibility criteria as mentioned below.
2	If not pre identified as eligible, provide evidence of Gold Standard approval	Not applicable
3	Demonstrate how the project meets the General Eligibility criteria of the applicable Activity Requirements	General Eligibility criteria has been justified below
4	Confirm that the project is not registered with any other voluntary or compliance schemes.	The project activity is not registered with any other voluntary or compliance schemes. declaration for no double counting has been provided by the PD.
5	Demonstrate the activity is NOT located in a host country, region, locality or state that has an emission reduction cap enforced OR has the possibility to trade emissions that include the scope of the proposed project	The host country for project activity is India which is a non-annex I Country. Hence, no emission reduction cap enforced as well as no emission trading system implemented in the host country.
6	Demonstrate that no potential for double counting of impacts if the Project Area overlaps with that of another Gold Standard or other voluntary or compliance standard programme of a similar nature.	The Project is not registered in any other mechanism. Also, self-declaration for no double counting has been provided by the PD.
7	Demonstrate that the project is in compliance with applicable Host Country's legal, environmental, ecological and social regulation.	The project activity has obtained all the authorities' approvals to comply with legal, environmental, ecological and social

[5] https://globalgoals.goldstandard.org/standards/202_V1.4_AR-Renewable-Energy-Activity-Requirements.pdf
[6] https://globalgoals.goldstandard.org/standards/101_V1.2_PAR_Principles-Requirements.pdf

		regulations before begin the implementation.

GENERAL ELIGIBILITY CRITERIA under PRINCIPLES & REQUIREMENTS[7]

Eligibility Criteria Category	Description	Justification	Criterion met?
Types of Projects	The project type is a Wind Power Plant which generates power using wind Energy. The project activity belongs to the type of Renewable energy that generate and deliver power to the Indian grid. The project applies methodology ACM0002 Version 21.0. which is an approved methodology under Gold Standard.	The Wind Power Plant Project is conceived as a grid connected wind power plant within the category of renewable energy supply. See section A.1.	Yes
Location of Project:	The Project activity is located in Dist. Thoothukudi, Tamil Nadu state in India. Further details have been provided in section A.2 of this report.	The Power purchase agreement between Project Proponent and Solar Energy Corporation of India Limited.	Yes
Project Area, Project Boundary and Scale:	Project Area and Boundary are defined in line with the applicable Methodology ACM0002 Version 21. The project activity includes 200 MW installed capacity and is Large Wind power plants with an installed capacity above 15 MW to be qualified as a large-scale wind plant (in accordance with UNFCCC rules).	Please refer section A.2 for the Geographical coordinates. The project has an install capacity of 200 MW which is more than 15 MW, therefore applies as a Large-Scale project. See section A.4.	Yes
Host Country Requirements:	The project activity follows the social wellbeing, Environmental wellbeing, Economic wellbeing and Technological wellbeing.	Projects is in compliance with India's legal, environmental, ecological and social regulations.	Yes
Contact Details:	Project Participant: Greenko Sironj Wind Power Pvt Ltd. Name of the contact person: Mr. Murali Krishnam Raju M	GS4GG-Cover Letter	Yes

[7] https://globalgoals.goldstandard.org/101-par-principles-requirements/

	Email: muraliraju.m@greenkogroup.com		
Legal Ownership and Other Rights:	The project activity is being developed by the PD.	The commissioning certificates and the Power Purchase Agreement (PPA) is in the name of the project participant.	Yes
Official Development Assistance (ODA) Declaration:	The project had private funding and funding from bank. The PD hereby confirms that there is no public funding from Annex 1 countries and no diversion of Official Development Assistance (ODA) involved in the project activity. The project is funded by bank.	The Project Developer declares that the project has not directly or indirectly received or benefited from official development assistance. An Official Development Assistance (ODA) declaration (i.e., GS Annex D) has Been submitted to VVB.	Yes

General Eligibility Criteria under Renewable Energy Activity Requirements:

Project Type : As discussed above, the project type is eligible.

Project Location: The project is located in villages of Thoothukudi district in the State of Tamil Nadu of India.

Project scale : The project activity is a 200 MW Wind power project and thus qualifies under large scale projects.

The project activity is only registered in GS4GG. Further the project is not registered with any other voluntary credit mechanism/schemes.

The start date for the project activity with capacity 200 MW is 22/11/2017.

However, the project proponent hereby confirms that there would not be double counting of credits for any particular monitoring period. The project activity is not availing any benefits other mechanism. A declaration mentioning the same has been submitted regarding same.

A.1.2. Legal ownership of products generated by the project and legal rights to alter use of resources required to service the project

The project activity is registered in GS4GG. The project developer (PD) has the commissioning certificates which demonstrates that the PD is the legal owner. Thus,

the project developer Orange Sironj Wind Power Pvt Ltd. is owner of the project but name of the company is now changed to Greenko Sironj Wind Power Pvt Ltd. therefore, Greenko Sironj Wind Power Pvt Ltd is owner of the project and have the legal rights for the credits that shall be generated by this project activity.

A.2 Location of project

The project activity is located in district, Thootukudi (Tuticorin), Tamil Nadu. The exact project locations are S. Kumarapuram, Puthiumputhur, Ottapidaram, Swamyanatham, P. Duraisamipuram, Vellaram, Kathcheri Thalavaipuram, Panchalankuruchi, Singathakurichi, Sekkarakudi, Vadakkukarusery, Ummarikottai, Ramaswamypuram, Jampulingapuram Villages of Poovani Dist. Thoothukudi, Tamil Nadu state in India. The coordinates of the project activity are as follows:

S. No.	WTGs	Longitude	Latitude	Feeder	Date of Commissioning
1	GPV-003	77° 59' 52.64"E	8°49'48.53"N	7	13/04/2019
2	GPV-004	77° 55' 28.86" E	8°47'28.29"N	6	05/03/2019
3	GPV-005	77° 57' 53.86"E	8°47'52.95"N	5	13/04/2019
4	GPV-007	77° 55' 41.95"E	8°48'37.92"N	7	05/03/2019
5	GPV-009	77° 57'26.15"E	8°49'16.13"N	6	05/03/2019
6	GPV-010	77° 58'35.36"E	8°51'36.10"N	1	13/04/2019
7	GPV-011	77° 55'37.35"E	8°46'45.70"N	6	05/03/2019
8	GPV-012	77° 55'46.12"E	8°49'50.67"N	7	05/03/2019
9	GPV-013	77° 55'8.16"E	8°49'15.14"N	7	05/03/2019

10	GPV-016	77° 56'51.85"E	8°49'35.66"N	7	05/03/2019
11	GPV-017	77° 57'20.34"E	8°48'58.14"N	6	05/03/2019
12	GPV-019	77° 56'41.27"E	8°48'18.77"N	6	05/03/2019
13	GPV-020	77° 55'28.90"E	8°47'3.03"N	6	05/03/2019
14	GPV-029	77° 55'27.56"E	8°45'39.22"N	6	13/04/2019
15	GPV-085	77° 58'31.60"E	8°48'32.05"N	7	05/03/2019
16	GPV-094	77° 55'9.04"E	8°46'33.73"N	6	05/03/2019
17	GPV-095	77° 57'58.20"E	8°49'5.99"N	7	13/04/2019
18	GPV-165	77° 52'58.34"E	8°46'40.20"N	6	13/04/2019
19	GPV-175	77° 58'38.43"E	8°52'4.94"N	1	13/04/2019
20	GPV-228	77° 53'54.07"E	8°46'4.63"N	6	05/03/2019
21	GPV-030	77° 59'6.81"E	8°47'59.52"N	7	05/03/2019
22	GPV-297	77° 56'9.84"E	8°45'45.68"N	6	13/04/2019
23	GPV-390	77° 59'32.11"E	8°47'23.59"N	7	05/03/2019
24	GPV-469	77° 57'51.91"E	8°46'19.47"N	7	13/04/2019
25	GPV-472	77° 53'58.35"E	8°46'31.75"N	6	13/04/2019
26	GPV-525	77° 57'12.51"E	8°52'7.95"N	1	13/04/2019

27	GPV-527	77° 54'51.48"E	8°45'19.25"N	6	05/03/2019
28	GPV-529	77° 57'17.46"E	8°47'19.32"N	7	05/03/2019
29	GPV-530	77° 59'34.72"E	8°51'57.79"N	1	13/04/2019
30	GPV-539	77° 55'46.90"E	8°48'55.75"N	7	05/03/2019
31	GPV-545	77° 59'16.80"E	8°52'54.88"N	1	13/04/2019
32	GPV-555	77° 59'23.49"E	8°57'39.57"N	3	05/03/2019
33	GPV-560	77° 58' 49.17" E	8°54'54.42"N	1	13/04/2019
34	GPV-676	77° 55'57.01" E	8°49'26.56"N	7	05/03/2019
35	GPV-690	77° 56'19.68" E	8°47'25.52"N	6	05/03/2019
36	GPV-696	77° 54'27.77" E	8°47'23.14"N	6	05/03/2019
37	GPV-730	77° 59'30.80" E	8°48'28.33"N	7	05/03/2019
38	GPV-731	77° 59'28.56" E	8°48'46.72"N	7	05/03/2019
39	GPV-002	78° 2' 56.28" E	8°54'28.21"N	3	05/03/2019
40	GPV-006	78° 2' 19.57" E	8°53'25.71"N	2	05/03/2019
41	GPV-018	78° 2' 18.87" E	8°51'33.34"N	2	05/03/2019
42	GPV-023	78° 1' 12.19" E	8°51'6.34"N	1	05/03/2019
43	GPV-026	78° 2' 43.18" E	8°53'9.73"N	2	05/03/2019

44	GPV-027	78° 2' 54.87" E	8°50'19.87"N	2	05/03/2019
45	GPV-130	78° 0' 34.54" E	8°51'27.92"N	1	13/04/2019
46	GPV-151	78° 4' 52.55" E	8°54'23.70"N	3	13/04/2019
47	GPV-227	78° 1' 41.52" E	8°51'26.51"N	6	05/03/2019
48	GPV-021	78° 0' 14.33" E	8°58'24.99"N	3	05/03/2019
49	GPV-022	78° 3' 3.69" E	8°55'39.59"N	3	05/03/2019
50	GPV-028	78° 3' 16.68" E	8°56'39.79"N	3	05/03/2019
51	GPV-256	78° 3' 0.34" E	8°59'7.96"N	4	13/04/2019
52	GPV-269	78° 3' 48.50" E	8°58'38.32"N	4	13/04/2019
53	GPV-290	78° 2' 59.08" E	8°51'22.11"N	2	05/03/2019
54	GPV-310	78° 3' 34.77" E	8°56'19.15"N	3	05/03/2019
55	GPV-318	78° 0' 17.32" E	8°48'56.47"N	7	05/03/2019
56	GPV-321	78° 2' 30.53" E	8°50'38.44"N	3	05/03/2019
57	GPV-335	78° 3' 31.73" E	8°54'37.30"N	3	05/03/2019
58	GPV-373	78° 3' 50.77" E	8°58'15.90"N	4	13/04/2019
59	GPV-526	78° 2' 30.73" E	8°50'37.43"N	2	05/03/2019
60	GPV-528	78° 2' 46.27" E	8°53'44.03"N	2	05/03/2019

61	GPV-531	78° 3' 6.85" E	8°58'43.55"N	4	13/04/2019
62	GPV-547	78° 3' 26.27" E	8°57'19.84"N	3	05/03/2019
63	GPV-487	78° 3' 11.25" E	8°58'9.67" N	4	13/04/2019
64	GPV-523	78° 2' 21.60" E	8°52'41.20"N	2	05/03/2019
65	GPV-565	78° 2' 52.69" E	8°59'39.96"N	4	13/04/2019
66	GPV-641	78° 2' 12.49" E	8°59'19.31"N	4	13/04/2019
67	GPV-642	78° 4' 15.74" E	8°55'43.28"N	3	05/03/2019
68	GPV-691	78° 2' 13.56" E	8°59'44.43"N	4	13/04/2019
69	GPV-698	78° 2' 28.26" E	8°50'11.20"N	2	05/03/2019
70	GPV-699	78° 2' 57.52" E	8°54'5.00"N	2	05/03/2019
71	GPV-355	78° 6' 57.09" E	8°58'19.68"N	5	13/04/2019
72	GPV-398	78° 4' 28.01" E	9°0'4.53"N	4	13/04/2019
73	GPV-542	78° 4' 21.08" E	8°59'18.45"N	4	13/04/2019
74	GPV-074	78° 5' 7.17" E	8°59'51.80"N	4	13/04/2019
75	GPV-077	78° 5' 6.28" E	8°59'31.82"N	4	13/04/2019
76	GPV-078	78° 5' 7.60" E	8°58'45.72"N	4	13/04/2019
77	GPV-070	78° 5' 10.44" E	8°58'25.54"N	4	13/04/2019

78	GPV-234	78° 5' 42.94" E	8°56'40.59"N	5	13/04/2019
79	GPV-307	78° 6' 7.82" E	8°56'54.64"N	5	13/04/2019
80	GPV-050	78° 6' 14.28" E	8°57'32.97"N	5	13/04/2019
81	GPV-235	78° 6' 21.76" E	8°57'59.14"N	5	13/04/2019
82	GPV-032	78° 6' 23.73" E	8°59'17.31"N	4	13/04/2019
83	GPV-033	78° 6' 40.65" E	8°58'55.39"N	5	13/04/2019
84	GPV-543	78° 6' 34.98" E	8°56'11.07"N	5	13/04/2019
85	GPV-720	78° 1' 52.37" E	8°50'42.14"N	2	05/03/2019
86	GPV-724	78° 2' 12.75" E	8°52'59.70"N	2	05/03/2019
87	GPV-725	78° 4' 12.32" E	8°55'0.94"N	3	05/03/2019
88	GPV-726	78° 4' 6.75" E	8°56'3.89"N	3	05/03/2019
89	GPV-727	78°4' 20.29" E	8°59'40.27"N	4	13/04/2019
90	GPV-058	78° 7' 47.73" E	8°59'1.25"N	5	13/04/2019
91	GPV-061	78° 7' 46.52" E	8° 59'29.96"N	5	13/04/2019
92	GPV-100	78° 8' 15.02" E	8°58' 39.08"N	5	13/04/2019
93	GPV-161	78° 8' 58.95" E	8°56'21"N	5	13/04/2019
94	GPV-367	78° 7' 48.95" E	8°58'26.20"N	5	13/04/2019

95	GPV-068	78° 6' 17.75" E	9°0'1.26"N	4	13/04/2019
96	GPV-125	78° 9' 19.85" E	8°57'11.12"N	5	13/04/2019
97	GPV-349	78° 9' 14.75" E	8°58'6.34"N	5	13/04/2019
98	GPV-541	78° 9' 43.10" E	8°57'33.94" N	5	13/04/2019
99	GPV-728	78° 8' 0.92" E	8°57'40.43" N	5	13/04/2019
100	GPV-729	78° 7' 43.08" E	8°55'53.55" N	5	13/04/2019

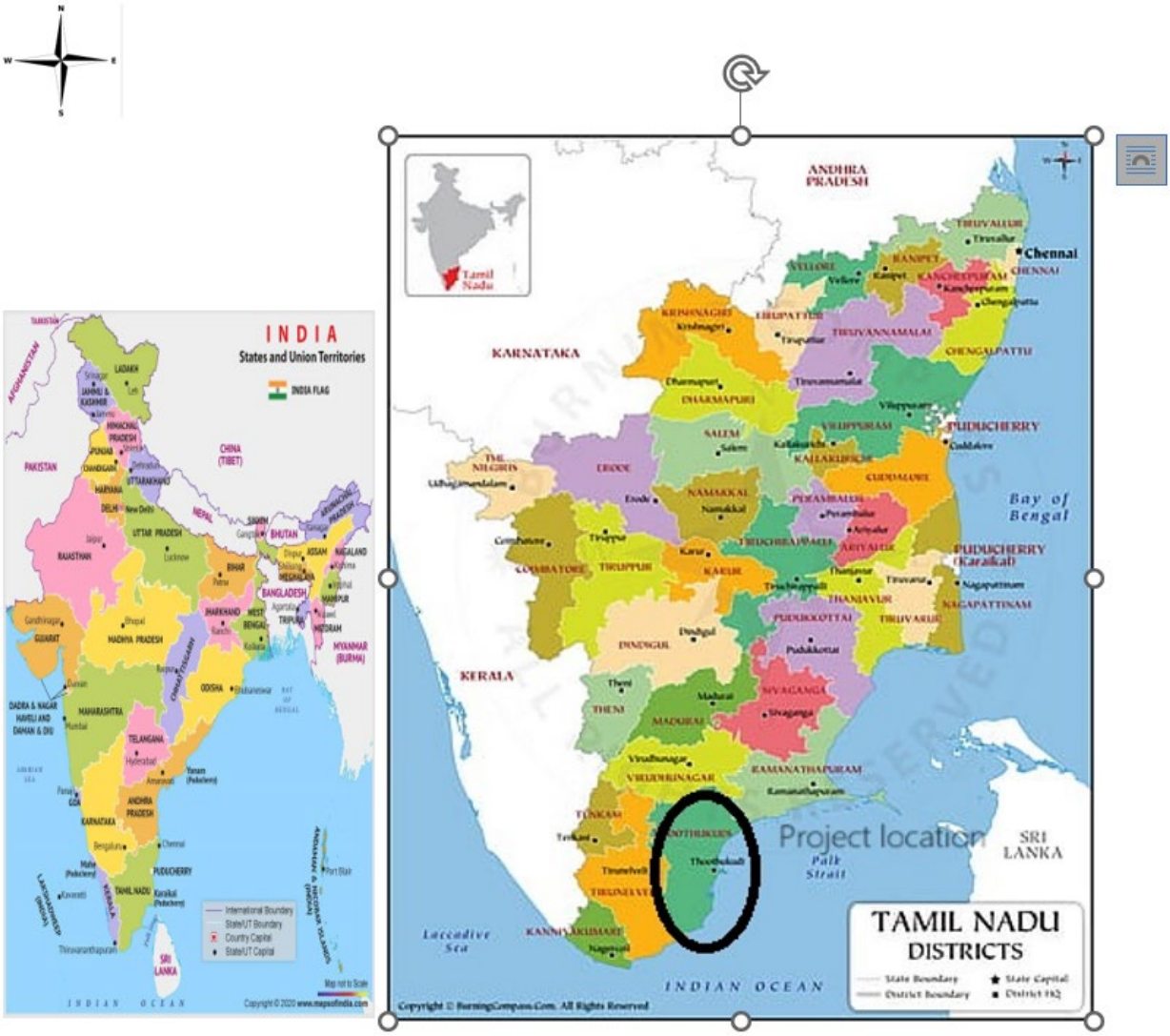


Fig.: Project location

A.3 Technologies and/or measures

The project activity aims to harness Wind energy through installation of 100 nos. of 2 MW WTGs of Gamesa make (model - G114/2000kW IEC Class S model year version with 106m height of tower) with total installed capacity of 200 MW.

A description is given below of the main components of the G114-2.0 MW wind turbines:

Parameter	**Specification**
Model: G114-2.0 MW CS Max Power[8]	
General data	
Make of WTG	Gamesa Type (Three-bladed wind-facing rotor type)
Number of Blades	3 Design Conditions of WTGs-+95
Design Conditions of WTGs	
Rated Power (MW)	2
Annual Average wind speed(m/s)	6.5
Turbulence intensity (%)	18
Reference 10-minute wind speed in 50 years(m/s)	40
Extreme wind speed in 50 years over a 3-second average(m/s)	56
Hub Height(m)	106
Rotor	
Pitch control hydraulic system	Independent hydraulic actuators for each blade that provide a rotation capacity of between –5º and 87º and a system of accumulators which ensure feathering in the event of an emergency
Diameter(m)	114
Swept Area(m2)	10,207
Wind speed(rpm)	13.07

[8] Gamesa G114-2.0MW - 2,00 MW - Wind turbine (wind-turbine-models.com)

Blades	
Length	56m
Weight (t) t, min -1.5	11.5
Blade cord (maximum/ minimum) (m)	3.865
Torsion (º)	Max 25, min -1.5
Gearbox	
Type	1 stage planetary / 2 parallel
Generator	
Type	Asynchronous double-feed unit with 4 poles, coil rotor and slip rings.
Nominal power (kW)	2,170 (stator + rotor)
Voltage (Vac)	690
Frequency (Hz)	50 / 60
Transformer	
Power transformer	100 MVA – 230/33 KV
Number of Power transformer	2
Location of Power transformer	Plant substation
Unit transformer for auxiliary supply	250 KVA – 33kv/450
Location of Unit transformer for auxiliary supply	Plant substation
Number of Unit transformer for auxiliary supply	2
WTG transformer	2350 KVA – 33KV/690
Number of WTG transformer	100
Location of WTG transformer	One transformer for each WTG

The average lifetime of the WTGs under project activity is around 20 years[9] as per the equipment supplier specifications. The plant load factor assessed by third party for WTGs at project site is 36.30%.

[9] The average lifetime of the WTGs is 20 years, and the duration of the 1st crediting period is 5 years, so after that, 15 years are the remaining life of the WTGs.

In the absence of the project activity the equivalent amount of electricity sold to grid would have been generated by grid connected power plants (which is predominantly based on fossil fuels)[10] and by the addition of new generation sources. Hence baseline scenario of the project activity is the grid-based electricity system, which is also the pre-project scenario.

The electricity generated by the project activity is being supplied to the grid. The major contributor of electricity to the INDIAN grids is fossil fuel based thermal power plants. Fossil fuel-based electricity generation contributes to GHG emissions of carbon dioxide into the atmosphere. The project activity is wind electricity generation which is a clean source of energy. In addition to contributing to the electricity generation to the state of Tamil Nadu, the project activity also helps to displace electricity generated from fossil fuel based thermal power plants into the grid thereby reducing GHG emissions. Prior to the project activity the same amount of electricity would be supplied from the connected grid system.

The Power evacuation of the project activity has been carried through Indian Grid.

Age and Technical Life Time:

Designed technical life time of project activity is 20 years from commissioning. This confirms project activity continues to displace electricity for the life time comparable to the baseline scenario noted.

The project activity is expected to generate 635,976 MWh annually of electrical energy, throughout its entire life span of 20 years. This results in an average annual reduction of 594,764 tCO_2 per annum from the project activity and contribute SDG 7 and SDG 13. Also, during the operation phase the project activity provides employment to contribute SDG 8. The project activity does not involve any technology transfer.

Purpose of the Project

The purpose of the project activity is to generate electrical power using Wind energy, there by displacing non-renewable fossil resources resulting to sustainable, economic and environmental development. In the absence of the project activity equivalent amount of power generation would have taken place through fossil fuel dominated

[10] https://cea.nic.in/wp-content/uploads/baseline/2023/01/Approved_report_emission__2021_22.pdf PAGE 6

power generating stations. Thus, the renewable energy generation from project activity results in reduction of the greenhouse gas emissions.

Positive contribution of the project to the following Sustainable Development Goals:

1. SDG 7: Affordable and Clean Energy: The project is generating approx. 635,976 MWh of clean energy per annum.

2. SDG 8: Decent Work and Economic Growth: The project is providing direct employment to around 15 persons. The project leads to workplace Health & Safety training along with other Trainings & workshops which are conducted for the O&M staff of the PD.

3. SDG13: Climate Action: The project leads to reduction of approx. 594,764 tCO_2 per annum due to the implementation of project activity.

A.4 Scale of the project

As per GHG EMISSIONS REDUCTION & SEQUESTRATION PRODUCT REQUIREMENTS version 2.2[11]-

"All Projects exceeding the small-scale thresholds are defined as large scale. Small scale projects are defined following CDM project standard for project activities, as below;

a) Type 1: Renewable energy Projects: maximum output capacity of 15 MW(e) or 45MW (th)."

As per renewable energy activity requirement version 1.4[12] Renewable energy Project with a maximum output capacity of 15 MW (or an appropriate equivalent) is defined as small scale project.

Since the project activity has capacity of 200 MW that is more than 15 MW so it comes under large scale project activity.

A.5 Funding sources of project

The PD hereby confirms that there is no public funding from Annex 1 countries and no diversion of Official Development Assistance (ODA) involved in the project activity.

[11] https://globalgoals.goldstandard.org/standards/501_V2.2_PR_GHG-Emissions-Reductions-Sequestration.pdf
[12] https://globalgoals.goldstandard.org/standards/202_V1.4_AR-Renewable-Energy-Activity-Requirements.pdf

SECTION B. APPLICATION OF APPROVED GOLD STANDARD METHODOLOGY (IES) AND/OR DEMONSTRATION OF SDG CONTRIBUTIONS

B.1. Reference of approved methodology (ies)

Title: Grid-connected electricity generation from renewable sources[13].

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

Methodology: ACM0002: Grid-connected electricity generation from renewable sources - Version 21.0[14].

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

Category: Approved Consolidated Methodology (ACM0002, Version 21.0)

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

- Tool 7- Tool to calculate the emission factor for an electricity system - Version 07.0.0 (EB 100, Annex 4)[15].
- Tool 1- Tool for the demonstration and assessment of additionality - Version 07.0.0 (EB 70, Annex 08)[16].
- Tool 11 - Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period – Version 3.0.1 (EB 66, Annex 47)[17]

PD confirms that the latest version of the methodology and applicable tools was applied at time of first submission of the Project to Gold Standard.

B.2. Applicability of methodology (ies)

The project activity involves generation of grid connected electricity from renewable wind energy. The project activity has an installed capacity of 200 MW which qualifies for a large CDM project activity under Type-I of the large-scale methodologies. The project status is corresponding to the methodology ACM0002 version 21.0 and applicability of methodology are discussed below-

[13] CDM: Grid-connected electricity generation from renewable sources --- Version 21.0 (unfccc.int)
[14] https://cdm.unfccc.int/methodologies/DB/HF3LP6O41YY0JIP1DK6ZRJO9RSCX3S
[15] https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-07-v7.0.pdf
[16] https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-01-v7.0.0.pdf
[17] https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-11-v3.0.1.pdf

Applicability Criterion	Project Case
1) This methodology is applicable to grid connected renewable energy power generation project activities that: a) Install a Greenfield power plant; b) Involve a capacity addition to (an) existing plant(s); c) Involve a retrofit of (an) existing operating plants/units; d) Involve a rehabilitation of (an) existing plant(s)/unit(s); or e) Involve a replacement of (an) existing plant(s)/unit(s).	The project activity is a Renewable Energy Project i.e., Wind Power Project which falls under applicability criteria option 1 (a) i.e., "Install a Greenfield power plant". Hence the project activity meets the given applicability criterion.
2) In case the project activity involves the integration of a BESS, the methodology is applicable to grid-connected renewable energy power generation project activities that: (a) Integrate BESS with a Greenfield power plant; (b) Integrate a BESS together with implementing a capacity addition to (an) existing solar photovoltaic or wind power plant(s)/unit(s); (c) Integrate a BESS to (an) existing solar photovoltaic or wind power plant(s)/unit(s) without implementing any other changes to the existing plant(s); (d) Integrate a BESS together with implementing a retrofit of (an) existing solar photovoltaic or wind power plant(s)/unit(s).	The project activity does not have a battery energy storage system. Thus, this criterion is not applicable.
3)The methodology is applicable under the following conditions: (a) Hydro power plant/unit with or without reservoir, wind power plant/unit, geothermal power plant/unit, solar power plant/unit, wave power plant/unit or tidal power plant/unit; (b) In the case of capacity additions, retrofits, rehabilitations or replacements (except for wind, solar, wave or tidal power capacity addition projects) the existing plant/unit started commercial operation prior to the start of a minimum historical reference period of five years, used for the calculation of baseline emissions and defined in the baseline emission section, and no capacity expansion, retrofit, or rehabilitation of the	The project activity is not a Hydro power project, and it does not have BEES. Hence not applicable.

plant/unit has been undertaken between the start of this minimum historical reference period and the implementation of the project activity; (c) In case of Greenfield project activities applicable under paragraph 5 (a) above, the project participants shall demonstrate that the BESS was an integral part of the design of the renewable energy project activity (e.g. by referring to feasibility studies or investment decision documents); (d) The BESS should be charged with electricity generated from the associated renewable energy power plant(s). Only during exigencies 2 may the BESS be charged with electricity from the grid or a fossil fuel electricity generator. In such cases, the corresponding GHG emissions shall be accounted for as project emissions following the requirements under section 5.4.4 below. The charging using the grid or using fossil fuel electricity generator should not amount to more than 2 per cent of the electricity generated by the project renewable energy plant during a monitoring period. During the time periods (e.g. week(s), months(s)) when the BESS consumes more than 2 per cent of the electricity for charging, the project participant shall not be entitled to issuance of the certified emission reductions for the concerned periods of the monitoring period.	
4) In case of hydro power plants, one of the following conditions shall apply: (a) The project activity is implemented in existing single or multiple reservoirs, with no change in the volume of any of the reservoirs; or (b) The project activity is implemented in existing single or multiple reservoirs, where the volume of the reservoir(s) is increased and the power density, calculated using equation (7), is greater than 4 W/m^2; or (c) The project activity results in new single or multiple reservoirs and the power density, calculated using equation (7), is greater than 4 W/m^2; or (d) The project activity is an integrated hydro power project involving multiple reservoirs, where the power density for any of the reservoirs, calculated	The project is not a hydro power project. Hence, not applicable.

using equation (7), is lower than or equal to 4 W/m^2, all of the following conditions shall apply: (i) The power density calculated using the total installed capacity of the integrated project, as per equation (8), is greater than 4 W/m^2; (ii) Water flow between reservoirs is not used by any other hydropower unit which is not a part of the project activity; (iii) Installed capacity of the power plant(s) with power density lower than or equal to 4 W/m2 shall be: a. Lower than or equal to 15 MW; and b. Less than 10 per cent of the total installed capacity of integrated hydro power project.	
5) In the case of integrated hydro power projects, project participants shall: (a) Demonstrate that water flow from upstream power plants/units spill directly to the downstream reservoir and that collectively constitute to the generation capacity of the integrated hydro power project; or (b) Provide an analysis of the water balance covering the water fed to power units, with all possible combinations of reservoirs and without the construction of reservoirs. The purpose of water balance is to demonstrate the requirement of specific combination of reservoirs constructed under CDM project activity for the optimization of power output. This demonstration has to be carried out in the specific scenario of water availability in different seasons to optimize the water flow at the inlet of power units. Therefore, this water balance will take into account seasonal flows from river, tributaries (if any), and rainfall for minimum of five years prior to the implementation of the CDM project activity.	The project is not a hydro power project. Hence, not applicable.
6) The methodology is not applicable to: (a) Project activities that involve switching from fossil fuels to renewable energy sources at the site of the project activity, since in this case the baseline may be the continued use of fossil fuels at the site; (b) Biomass fired power plants/units	Not applicable as the project is setting up a wind power project.
7) In the case of retrofits, rehabilitations, replacements, or capacity additions, this methodology is only applicable if the most plausible baseline scenario, as a	The project does not involve retrofits, rehabilitations,

result of the identification of baseline scenario, is "the continuation of the current situation, that is to use the power generation equipment that was already in use prior to the implementation of the project activity and undertaking business as usual maintenance".	replacements, or capacity additions. Hence not applicable.

In addition, the applicability conditions included in the tools referred to below apply. Applicability of each tool is given below Tools used-

Tool 07: Tool to calculate the emission factor for an electricity system - Version 07.0 (EB 100 annex 4)

Applicability Criterion	**Project Case**
1) This tool may be applied to estimate the OM, BM and/or CM when calculating baseline emissions for a project activity that substitutes grid electricity that is where a project activity supplies electricity to a grid or a project activity that results in savings of electricity that would have been provided by the grid (e.g. demand-side energy efficiency projects).	The project is a grid connected Greenfield wind power project and thus the tool is applicable.
2) Under this tool, the emission factor for the project electricity system can be calculated either for grid power plants only or, as an option, can include off-grid power plants. In the latter case, two sub-options under the step 2 of the tool are available to the project participants, i.e. option IIa and option IIb. If option IIa is chosen, the conditions specified in "Appendix 1: Procedures related to off-grid power generation" should be met. Namely, the total capacity of off-grid power plants (in MW) should be at least 10 per cent of the total capacity of grid power plants in the electricity system; or the total electricity generation by off-grid power plants (in MWh) should be at least 10 per cent of the total electricity generation by grid power plants in the electricity system; and that factors which	Steps involved in calculation of Emission Factor is included in PDD as per the requirement of the tool.

negatively affect the reliability and stability of the grid are primarily due to constraints in generation and not to other aspects such as transmission capacity.	
3) In case of CDM projects the tool is not applicable if the project electricity system is located partially or totally in an Annex I country.	Project is located in non-Annex I country and hence the tool is applicable
4) Under this tool, the value applied to the CO_2 emission factor of biofuels is zero.	The project is a Wind project and there is no involvement of biofuels. Therefore, this criterion is not applicable.

Tool 01: Tool for the demonstration and assessment of additionality- Version 07.0.0 (EB 70, Annex 08)

Applicability Criterion	**Project Case**
1) The use of the "Tool for the demonstration and assessment of additionality" is not mandatory for project participants when proposing new methodologies. Project participants may propose alternative methods to demonstrate additionality for consideration by the Executive Board. They may also submit revisions to approved methodologies using the additionality tool.	The project is not proposing any new methodologies, hence the use of the "Tool for the demonstration and assessment of additionality" is mandatory. Refer to section B.5 for details where additionality of the project activity is demonstrated using TOOL 1.
2) Once the additionally tool is included in an approved methodology, its application by project participants using this methodology is mandatory.	This document is related to Renewable of crediting period hence the steps are not required in this document the Steps of this tool are applied in the section B.5 of registered PDD please refer it.

Tool 11: Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period- Version 03.0.1 (EB 66, Annex 47)

Applicability Criterion	Project Case
This tool provides a stepwise procedure to assess the continued validity of the baseline and to update the baseline at the renewal of a crediting period, as required by paragraph 49 (a) of the modalities and procedures of the clean development mechanism.	The project activity has renewable crediting period of 15 years and now performing renewable of crediting period for next 5 years.
The tool consists of two steps. The first step provides an approach to evaluate whether the current baseline is still valid for the next crediting period. The second step provides an approach to update the baseline in case that the current baseline is not valid anymore for the next crediting period.	The baseline scenario remains unchanged. Only the approach used to calculate the baseline emission factor is updated as per the latest version (Version 19.0 of CEA data base[18]) of database available at the time of PDD submission for renewal.

The project activity qualifies as Type I during every year of the crediting period in accordance with applicable provisions for project activity eligibility as discussed above. Also, the total installed capacity of project activity is 200 MW which is applicable as per large scale project activities methodology ACM0002: Grid-connected electricity generation from renewable sources Version 21.0. The project capacity will always remain the same and hence the project activity will always be a large-scale project activity throughout the crediting period.

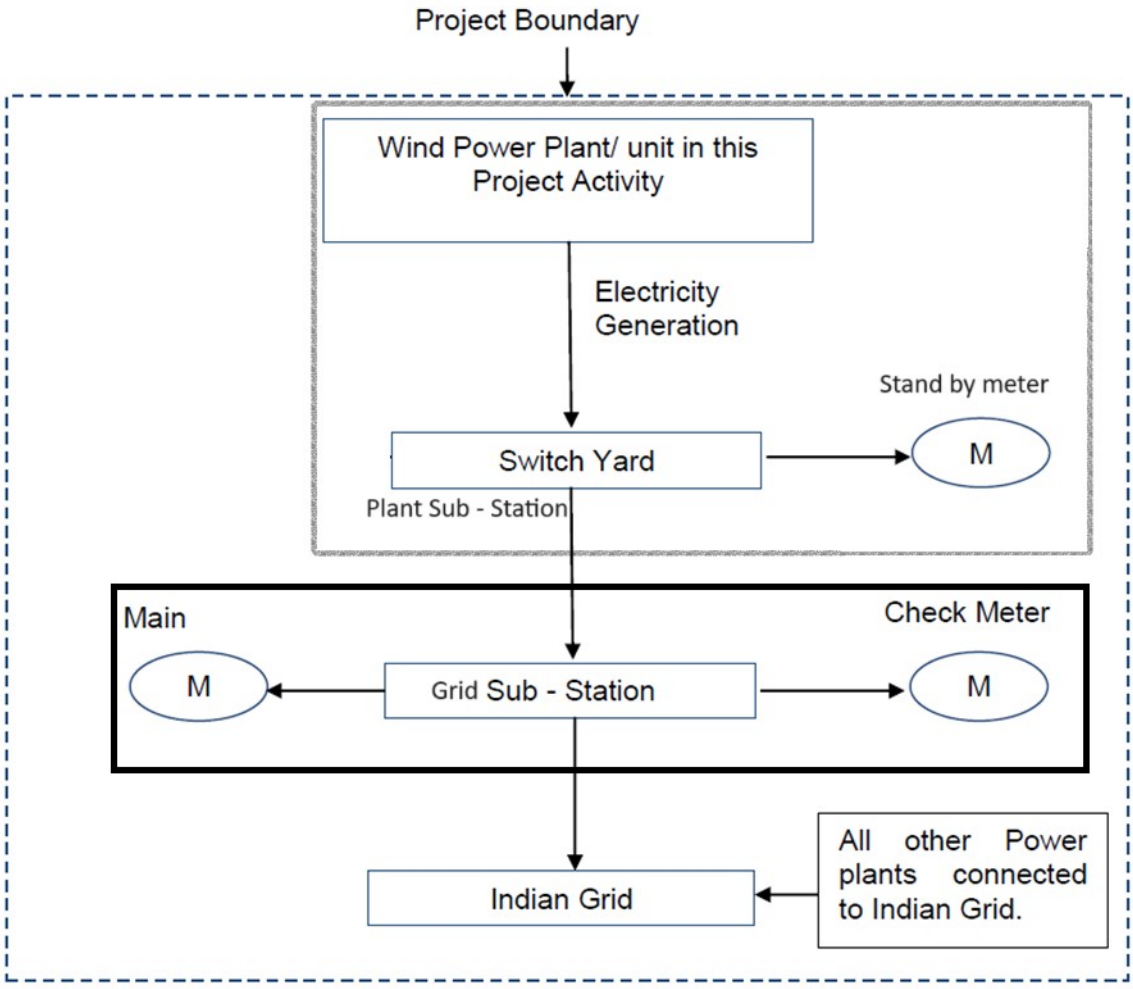
B.3. Project boundary

As per methodology ACM0002, Version-21 the spatial extent of the project boundary includes the project power plant and all power plants connected physically to the

[18] https://cea.nic.in/cdm-co2-baseline-database/?lang=en

electricity system that the project power plant is connected to. This includes the wind turbine installation, pooling and sub-stations.

The project activity evacuates the power to the INDIAN grid. Therefore, all the power plants contributing electricity to the Integrated grid have been considered in the project boundary for the purpose of baseline estimation. The project activity targets reduction of tCO_2e as main GHG greenhouse gas in baseline, there are no GHG emission associated with project activity.



Source		GHGs	Included?	Justification/Explanation
Baseline	Grid connected electricity generation	CO_2	**Yes**	Main emission source
		CH_4	**No**	Minor emission source
		N_2O	**No**	Minor emission source

Project scenario	Greenfield Wind Power Project Activity.	CO_2	**No**	No CO_2 emissions are emitted from the project
		CH_4	**No**	No methane generation is expected to be emitted.
		N_2O	**No**	No nitrous oxide generation is expected to be emitted.

B.4. Establishment and description of baseline scenario

As per tool 11 version 3.0.1 "Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period"

Step 1: Assess the validity of the current baseline for the next crediting period

Step 1.1: Assess compliance of the current baseline with relevant mandatory national and/or sectoral policies

⇒ As per tool 11 (Version 3.1) step 1.1 If the current baseline complies with all relevant mandatory national and/or sectoral policies which have come into effect after the submission of the project activity for validation or the submission of the previous request for renewal of the crediting period. The baseline scenario remains unchanged and is in compliance with all the relevant mandatory national and/or sectoral policies so we can go to Step 1.2.

Step 1.2: Assess the impact of circumstances

⇒ The baseline scenario identified at the validation of the project activity was the electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid connected power plants and by the addition of new generation sources into the grid. Thus, this project activity was a voluntary investment which intends to replace equivalent amount of electricity at grid from renewable source. PD was not bound to incur this investment; hence absence of project activity (i.e., the investment) does not lead to any continued baseline practice for PD within their scope whereas the continued operation of the project activity would continue to replace equivalent amount of electricity at grid. Hence, the same baseline as identified in the previous crediting period is still valid for the project. Therefore, the assessment of the changes in market characteristics is not required for the renewal of the project's crediting period.

Step 1.3: Assess whether the continuation of the use of current baseline equipment(s) or an investment is the most likely scenario for the crediting period for which renewal is requested.

⇒ As explained in step 1.2, the baseline scenario was the electricity import/generation from the power plants connected to the electricity grid. The project activity in green field project and there is not any baseline equipment or investment involved in project activity. Therefore, this condition is not applicable to the project activity.

Step 1.4: Assessment of the validity of the data and parameters

⇒ This step stipulates that "Where emission factors, values or emission benchmarks are used and determined only once for the crediting period, they should be updated, except if the emission factors, values or emission benchmarks are based on the historical situation at the site of the project activity prior to the implementation of the project and cannot be updated because the historical situation does not exist anymore as a result of the CDM project activity." In the context of the present project activity the emission factor has been updated along with the approach used to calculate the emission factor.

Step 2: Update the current baseline and data & parameters

⇒ As evident from the explanation provided above the baseline scenario remains unchanged. Only the approach used to calculate the baseline emission factor is updated as per the latest version (Version 19.0 of CEA data base[19]) of database available at the time of PDD submission for renewal. In line with the principles and requirements version 1.2, the impact of new relevant national and/or sectoral policies and circumstances on the baseline taking into account relevant EB guidance with regard to renewal of the crediting period at the time of requesting renewal of crediting period; and the correctness of the application of an approved baseline methodology for the determination of the continued validity of the baseline or its update, and the estimation of emission reductions for the applicable crediting period.

[19] https://cea.nic.in/cdm-co2-baseline-database/?lang=en

As per para 24 of the approved consolidated Methodology ACM0002 (Version 21.0) "If the project activity is the installation of a Greenfield power plant with or without a BEES, the baseline scenario is electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources, as reflected in the combined margin (CM) calculations described in the "Tool to calculate the emission factor for an electricity system".

The project activity involved setting up of WTGs to harness the power of wind to produce electricity and supply to the grid. In the absence of the project activity, the equivalent amount of power would have been supplied to the electricity grid by the operation of grid-connected power plants (mainly by fossil fuel fired plants) and by the addition of new generation sources, as reflected in the combined margin (CM) calculations.
Hence, the baseline for the project activity is the equivalent amount of power from the INDIAN grid.

The combined margin ($EF_{grid,CM,y}$) is the result of a weighted average of two emission factor pertaining to the electricity system: the operating margin (OM) and build margin (BM), in accordance with the Tool to calculate the emission factor for an electricity system - Version 7.0. Calculations for this combined margin must be based on data from an official source (where available) and made publicly available. In India, Central Electricity Authority (CEA), Government of India provides this data, and accordingly the same latest available data at the time of PDD submission to VVB has been used and considered for emission factor calculations.

The combined margin of the INDIAN grid used for the project activity is as follows:

Parameter	Value	Nomenclature	Source

$EF_{grid,CM,y}$	0.9352 tCO_2/MWh	Combined margin CO_2 emission factor for the project electricity system in year y	Calculated as the weighted average of the operating margin (0.75) & build margin (0.25) values, sourced from Baseline CO_2 Emission Database, Version 19.0, December 2023 published by Central Electricity Authority (CEA)[20], Government of India
$EF_{grid,OM,y}$	0.9580 tCO_2/MWh	Operating margin CO_2 emission factor for the project electricity system in year y	Calculated as the last 3-year (2020-21, 2021-22 and 2022-23) generation-weighted average, sourced from Baseline CO_2 Emission Database, Version 19.0[21], December 2023 published by Central Electricity Authority (CEA), Government of India
$EF_{grid,BM,y}$	0.8670 tCO_2/MWh	Build margin CO_2 emission factor for the project electricity system in year y	Baseline CO_2 Emission Database, Version 19.0[22], December 2023 published by Central Electricity Authority (CEA), Government of India

B.5. Demonstration of additionality

The project generates power using wind energy, which is a renewable, zero emission source of energy. Baseline considerations for the project are based on approved consolidated baseline methodology ACM0002 (Version 21.0). The project follows section 5.3.2 of the applied methodology which requires the project proponent to determine the additionality based on "Tool for the demonstration and assessment of additionality", Version 7.0.

The project is retroactive and is already registered under gold standard and for more clarity refer the registered PDD[23]; hence additional.

[20] https://cea.nic.in/wp-content/uploads/baseline/2024/01/User_Guide__Version_19.0.pdf
[21] https://cea.nic.in/wp-content/uploads/baseline/2024/01/User_Guide__Version_19.0.pdf
[22] https://cea.nic.in/wp-content/uploads/baseline/2024/01/User_Guide__Version_19.0.pdf
[23] https://registry.goldstandard.org/projects/details/1096

B.5.1 Prior Consideration

The project is undergoing renewal of crediting period. Hence prior consideration not required.

B.5.2 Ongoing Financial Need

The ongoing financial need for the project activity arises because of following parameters O&M expense, salaries of employees, training costs, consultant cost, VVB cost and GS4GG cost. All mentioned expenses are higher than the revenue generated by the project activity therefore carbon revenue is required to fulfil ongoing financial need.

The project activity has demonstrated the additionality at the time of project registration for 20 years of life of the project. Since the commissioning of project, carbon revenues are obtained which supported the project. Hence, the carbon revenue derived from project activity have been playing an important role in helping project owner in operating the project and contributing to SDGs, e.g., providing renewable electricity, employment and decent work and integrating to climate change measures.

The project owner has committed to one training every year, but in actuality, the project owner is conducting much more training and incurring more expenditure to achieve the sustainability of the project.

The IRR of the project is 10.44 % whereas the benchmark is 15.38%. Since the project is already commissioned and this is a renewable of design certification, the project developer has actual data of previous crediting period, so based on the data, the project developer has again checked. Additionally, the description is as follows:

- **Tariff:** The electricity tariff is fixed for the lifetime of the project activity and PPA has already been signed for the tariff rate of 2.64 INR/kwh; hence it is not affecting the IRR. Since the tariff is fixed hence it is not impacting the sensitivity.
- **PLF:** The PLF is 36.30 % in registered PD of crediting period 1 and the IRR will breach the benchmark value at a PLF variation of more than 13.99 %. Since the project is already commissioned and project developer has actual data of generation of previous crediting period and as per actual generation PLF is 31.47% which is 15.33% less as compared to estimated PLF therefore with actual PLF the IRR is not breaching the benchmark.

  The vintage wise Generation for previous crediting period is as follows:

Vintage	Actual Generation (MWh)	Issuance VERs
2019	463,315.00	447,192
2020	575,037.00	555,025
2021	539,795.20	521,010
2022	530,885.97	512,411
Total	2,109,033.17	2,035,638

- **Project Cost:** The project cost considered for investment analysis i.e., 12,600 million INR. Variation of -13.07 % is required for IRR to breach benchmark and actual cost is 12,558.30 million INR which is 0.33% lower than estimated cost therefore The IRR is not breaching the benchmark and the actual cost in under the sensitivity.
- **O&M Costs:** The O&M Costs INR 1.4 Mn/WTG with escalation of 5.00% per year as per registered PDD[24] of crediting period 1 but in actual case O&M Cost is INR 1.4 Mn/WTG which is same as registered PDD and escalation is 5.05% per year which is little bit higher as compared to registered PDD hence the IRR is not breaching the benchmark.

Based on above justification and analysis it can be concluded that the project activity is additional and project still needs carbon revenue to sustain.

B.6. Sustainable Development Goals (SDG) outcomes

Relevant Target/Indicator for each of the three SDGs

		SDG IMPACT
SUSTAINABLE DEVELOPMENT GOALS TARGETED	MOST RELEVANT SDG TARGET	**INDICATOR (PROPOSED OR SDG INDICATOR)**

[24] https://platform.sustain-cert.com/public-project/1196

SDG 7: Affordable and Clean Energy	7.2: By 2030, increase substantially the share of renewable energy in the global energy mix **Target:** 635,976 MWh per annum.	MWh of renewable energy generated
SDG 8: Decent Work and Economic Growth	8.5: By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value **Target:** • Training: 1 no's annually along with workplace health and safety is also conducted annually. • Employment of 15 staff	1. No. of trainings provided to the employees/year 2. Employment generated due to project activity.
SDG 13: Climate Action	13.2: Integrate climate change measures into national policies, strategies and planning. **Target:** 594,764 tCO_2e per annum	Emission reductions in tCO_2e

B.6.1 Explanation of methodological choices/approaches for estimating the SDG Impact

For this project activity, following SDGs are expected to be impacted:

SDG 7: Affordable and Clean Energy

Measurement Method: The baseline for the project is no project, thus leading to generation in the relevant grid which is dominated by fossil fuel. The clean energy generated by the project is calculated based on the amount of electricity generated by the project per annum. The project is expected to generate 635,976 MWh of clean energy per annum.

QA/QC Process: This parameter is monitored monthly and recorded, and value generation is cross checked with invoices. The meters are calibrated on regular frequency.

SDG 8: Decent Work and Economic Growth

Baseline: There were no trainings and employment conducted in the baseline.

Project's outcome: The project leads to employment opportunities for the local community, which would not have been possible in the baseline scenario. The project provides sustainable energy resources contributing to the economic development of the region.

The project contributes to the Target 8.5:

- By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value.

The project leads to Trainings & workshops which are conducted for the O&M staff of the PP. It is expected that a minimum of 1 training is carried out annually.

The project also provides employment to approximately 15 persons including O&M staff, management, outsourced jobs as well as security guards during the O&M phase.

Measurement method: - Training and employment generation is monitored through training records, staff attendance registers or letter from O & M staff for training and employment details or HSE/HR records.

QA/QC Process: This parameter is based on records, data and no any QA/QC procedure required. The VVB can confirm this parameter with interview with PD or site in-charge or employees for training and employment generation.

SDG13: Climate Action:

The project leads to mitigation of 594,764 tCO_2 per annum.

Measurement Method: The emission reduction parameter is calculated as product of net electricity supplied to grid and grid emission factor. The grid emission factor is ex-ante parameter and determined based on data obtained from "CO_2 Baseline Database for Indian Power Sector" version 19.0, published by the Central Electricity Authority, Ministry of Power, Government of India. This is in line with "Tool to calculate the emission factor for an electricity system, version 7.0."

QA/QC Process: This parameter is calculated, and no QA/QC procedure required.

As per the approved consolidated Methodology ACM0002 (Version 21.0), Emission reductions are calculated as follows:

$ER_y = BE_y - PE_y$

Where:

ER_y = Emission reductions in year y (tCO_2e/year)

BE_y = Baseline emissions in year y (tCO_2/ year)

PE_y = Project emissions in year y (tCO_2e/ year)

Baseline Emissions:

Baseline Emissions for the amount of electricity supplied by project activity, BE_y is calculated as

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

Where:

BE_y = Baseline emissions in year y (tCO_2/ year)

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

$EF_{grid,CM,y}$ = Combined margin CO_2 emission factor for grid connected power generation in year y calculated using the latest version of the "Tool to calculate the emission factor for an electricity system" (tCO_2/MWh)

Calculation of $EG_{PJ, y}$

The calculation of $EG_{PJ, y}$ is different for

a) Greenfield plants,

b) Retrofits and replacements, and

c) Capacity additions

The project activity is the installation of windmills, and it is a green field project. So, the formula in option (a) i.e., greenfield plants is used to calculate the value of $EG_{PJ,y.}$ In accordance with para 49 of the applied methodology.

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

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 CDM project activity in year y (MWh/ year)

$EG_{facility,y}$ = Quantity of net electricity generation supplied by the project plant/unit to the grid in year y (MWh/ year)

The project activity falls under INDIAN Grid, which constitutes of both fossil fuels and non-fossil fuels sources of electricity generation. Emission reductions due to the project activity are considered to be equivalent to the baseline emissions, since the wind project does not lead to any project emission and leakage emissions. Emission reductions are related to the electricity exported by the project and the emission coefficient of the grid system.

Baseline emission factor is calculated as combined margin, consisting of a combination of operating margin and build margin factors according to the procedures prescribed in the latest tool for calculating the emission factor for an electricity system. The steps of calculation are as follows:

Step 1: Identify the relevant electricity systems

As described in tool "For determining the electricity emission factors, identify the relevant project electricity system. Similarly, identify any connected electricity

systems". It also states that "If the DNA of the host country has published a delineation of the project electricity system and connected electricity systems, these delineations should be used".

Step 2: Choose whether to include off-grid power plants in the project electricity system (optional)

Option I is opted for the project activity i.e. only grid connected power plants are included in the calculation.

Step 3: Select a method to determine the operating margin (OM)

According to the tool, the calculation of the operating margin emission factor is based on one of the following methods:

a) Simple OM; or

b) Simple adjusted OM; or

c) Dispatch data analysis OM; or

d) Average OM.

The data required to calculate Simple adjusted OM and Dispatch data analysis OM is not possible due to lack of availability of data to project developers.

The choice of other two options for calculating operating margin emission factor depends on generation of electricity from low-cost/ must-run sources. In the context of the methodology low cost/must run resources typically include hydro, geothermal, Wind, low-cost biomass, nuclear and Wind generation.

Share of Must-Run (Hydro/Nuclear) (% of Net Generation)[25]

	2018-19	2019-20	2020-21	2021-22	2022-23
India	14.5%	17.0%	16.5%	15.8%	15.3%

The above data clearly shows that the percentage of total grid generation by low-cost/ must-run plants (on the basis of average of five most recent years) for the INDIAN grid is less than 50 % of the total generation.

Thus, the Average OM method cannot be applied, as low cost/must run resources constitute less than 50% of total grid generation.

1. [25] https://cea.nic.in/cdm-co2-baseline-database/?lang=en (Baseline Carbon Dioxide Emission Database Version 19.0)

The simple OM emission factor is calculated as the generation-weighted average CO_2 emissions per unit net electricity generation (t CO_2/MWh) of all generating power plants serving the system, not including low-cost/must-run power plants/units.

For the simple OM, the simple adjusted OM and the average OM, the emissions factor can be calculated using either of the two following data vintages:

(a) Ex ante option: if the ex-ante option is chosen, the emission factor is determined once at the validation stage, thus no monitoring and recalculation of the emissions factor during the crediting period is required.

OR

(b) Ex post option: if the ex-post option is chosen, the emission factor is determined for the year in which the project activity displaces grid electricity, requiring the emissions factor to be updated annually during monitoring.

PP has chosen ex-ante option for calculation of Simple OM emission factor using a 3-year generation weighted average, based on the most recent data available at the time of submission of the RCP-PDD to the DOE for validation.

Step 4: Calculate the operating margin emission factor according to the selected method

The operating margin emission factor has been calculated using a 3-year data vintage:

Net Generation in Operating Margin (GWH) (incl. Imports)			
	2020-21	**2021-22**	**2022-23**
Indian Grid	958,218	1,035,672	1,117,846

Simple Operating Margin (tCO_2/MWh) (incl. Imports)			
	2020-21	**2021-22**	**2022-23**
Indian Grid	0.9402	0.9605	0.9710

Weighted Generation Operating Margin	
Indian Grid	0.9580

Step 5: Calculate the build margin (BM) emission factor

As per Methodological tool: "Tool to calculate the emission factor for an electricity system" (Version 07.0, EB 100, Annex 4) para 72:

In terms of vintage of data, project participants can choose between one of the following two options:

(a) Option 1 - for the first crediting period, calculate the build margin emission factor ex ante based on the most recent information available on units already built for sample group m at the time of CDM-PDD submission to the DOE for validation. For the second crediting period, the build margin emission factor should be updated based on the most recent information available on units already built at the time of submission of the request for renewal of the crediting period to the DOE. For the third crediting period, the build margin emission factor calculated for the second crediting period should be used. This option does not require monitoring the emission factor during the crediting period.

(b) Option 2 - For the first crediting period, the build margin emission factor shall be updated annually, ex post, including those units built up to the year of registration of the project activity or, if information up to the year of registration is not yet available, including those units built up to the latest year for which information is available.

Option 1 as described above is chosen to calculate the build margin emission factor for the project activity.

BM is calculated ex-ante based on the most recent information available at the time of submission of PDD and is fixed for the entire crediting period

Build Margin (tCO_2/MWh) (not adjusted for imports)	
	2022-23
Indian Grid	0.8670

Step 6: Calculate the combined margin (CM) emission factor ($EF_{grid,CM,y}$)

As per Methodological tool: "Tool to calculate the emission factor for an electricity system" (Version 07.0, EB 100, Annex 4) para 81:

The calculation of the combined margin (CM) emission factor ($EF_{grid,CM,y}$) is based on one of the following methods:

(a) Weighted average CM; or

(b) Simplified CM.

PP has chosen option (a) i.e weighted average CM to calculate the combined margin emission factor for the project activity.

The combined margin emissions factor is calculated as follows:

$EF_y = EF_{grid,OM,y} * W_{OM} + EF_{grid,BM,y} * W_{BM}$

Where:

$EF_{grid,BM,y}$ = Build margin CO_2 emission factor in year y (t CO_2/MWh)

$EF_{grid,OM,y}$ = Operating margin CO_2 emission factor in year y (t CO_2/MWh)

W_{OM} = Weighting of operating margin emissions factor (per cent)

W_{BM} = Weighting of build margin emissions factor (per cent)

According to "Tool to calculate the emission factor for an electricity system" the weights for OM and BM are 0.75 and 0.25 respectively.

Therefore, $EF_{grid,CM,y}$ = 0.9580 *0.75 + 0.8670 *0.25

= 0.9352 tCO_2/MWh

As per, registered PDD, according to the 'Tool to calculate the emission factor for an electricity system', version 7, the weights for OM and BM are 0.75 and 0.25 respectively. Using the values for operating and build margin emission factor provided in the CEA database version 12 and their respective weights for calculation of combined margin emission factor, the baseline carbon emission factor (CM) was calculated: 0.9652 tCO_2 e/ MWh.

As per the latest CEA database and Tool to calculate the emission factor for an electricity system', version 7, the weights for OM and BM are 0.75 and 0.25 respectively. Using the values for operating and build margin emission factor provided in the CEA database version 19.0 and their respective weights for calculation of combined margin emission factor, the baseline carbon emission factor (CM) was calculated: 0.9352 tCO_2 e/ MWh. Therefore, the more conservative value of baseline carbon emission factor (CM) has been taken that is 0.9352 tCO_2e/MWh.

Project Emission

As per the ACM0002 version-21.0, Project Emission for most renewable energy power generation project activities, PE_y = 0. However, some project activities may involve project emissions that can be significant. These emissions shall be accounted for as project emissions by using the following equation:

$PE_y = PE_{FF,y} + PE_{GP,y} + PE_{HP,y}$

Where:

PE_y = Project emissions in year y (tCO_2e/ year)

$PE_{FF,y}$ = Project emissions from fossil fuel consumption in year y (tCO_2/ year)

$PE_{GP,y}$ = Project emissions from the operation of geothermal power plants due to the release of non-condensable gases in year y (tCO_2e/ year)

$PE_{HP,y}$ = Project emissions from water reservoirs of hydro power plants in year y (tCO_2e/ year).

The project activity involves the generation of electricity from the installation of WTGs. Hence, as per ACM0002, Version 21, there is no project emission for windmill projects. Therefore, project emissions are zero.

$PE_y = 0$

Leakage Emissions

No leakage emissions are considered in the project activity. The emissions potentially giving rise to leakage in the context of electric sector projects are emissions arising due to activities such as power plant construction and upstream emissions from fossil fuel use (e.g. extraction, processing, transport) are neglected.
$LE_y = 0$.

B.6.2 Data and parameters fixed ex ante

SDG13

Data/parameter	$EF_{grid,OM,y}$
Unit	tCO_2/MWh
Description	Operating Margin CO_2 emission factor in year y
Source of data	Calculated from CEA database, Version 19.0, December 2023[26]
Value(s) applied	0.9580 (Detail Calculation has been provided in ER Sheet)
Choice of data or Measurement methods and procedures	Calculated as per "Tool to calculate the emission factor for an electricity system, version 07" as 3-year generation weighted average using data for the years 2020-21, 2021-22 and 2022-23. The data are obtained from "CO_2 Baseline Database for Indian Power Sector" version 19.0, published by the Central Electricity Authority, Ministry of Power, Government of India.
Purpose of data	For the calculation of the Baseline Emission

[26] https://cea.nic.in/wp-content/uploads/baseline/2024/01/User_Guide__Version_19.0.pdf

Additional comment	This parameter is fixed ex-ante for the entire crediting period.

Data/parameter	$EF_{grid,BM,y}$
Unit	tCO_2/MWh
Description	Build Margin CO_2 emission factor in year y
Source of data	Calculated from CEA database, Version 19.0[27], December 2023
Value(s) applied	0.8670
Choice of data or Measurement methods and procedures	Calculated as per "Tool to calculate the emission factor for an electricity system, version 07". As such the latest value of build margin, 2022-23 is taken. The data are obtained from "CO_2 Baseline Database for Indian Power Sector" version 19.0 December 2023, published by the Central Electricity Authority, Ministry of Power, Government of India.
Purpose of data	For the calculation of the Baseline Emission
Additional comment	This parameter is fixed ex-ante for the entire crediting period.

Data/parameter	$EF_{grid,CM,y}$
Unit	tCO_2/MWh
Description	Combined Margin CO_2 emission factor in year y
Source of data	Calculated from CEA database, Version 19.0[28], December 2023

[27] https://cea.nic.in/wp-content/uploads/baseline/2024/01/User_Guide__Version_19.0.pdf
[28] https://cea.nic.in/wp-content/uploads/baseline/2024/01/User_Guide__Version_19.0.pdf

Value(s) applied	0.9352
Choice of data or Measurement methods and procedures	The combined margin emissions factor is calculated as follows: $EF_{grid,CM,y} = EF_{grid,OM,y} * W_{OM} + EF_{grid,BM,y} * W_{BM}$ Where: $EF_{grid,BM,y}$= Build margin CO_2 emission factor in year y (tCO_2/MWh) $EF_{grid,OM,y}$= Operating margin CO_2 emission factor in year y (tCO_2/MWh) W_{OM} = Weighting of operating margin emissions factor (%) = 75% W_{BM}= Weighting of build margin emissions factor (%) = 25%
Purpose of data	For the calculation of the Baseline Emission
Additional comment	This parameter is fixed ex-ante for the entire crediting period.

B.6.3 Ex ante estimation of SDG Impact

SDG 7: Affordable and Clean Energy - Project expected to generate 635,976 MWh clean energy every year

SDG 8: Decent Work and Economic Growth - Minimum 1 training to be carried out annually, apart from providing employment to approximately 15 persons. Further, Workplace Health & Safety trainings is also conducted annually.

SDG13: Climate Action - The project leads to mitigation of 594,764 tCO_2e per annum. Calculation of Outcome for SDG13- Climate Action.

Baseline emissions

As per the ACM0002 Version-21.0 the baseline emissions are the product of electrical energy baseline $EG_{PJ,y}$ expressed in MWh of electricity produced by the renewable generating unit multiplied by an emission factor.

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

Where,

$EG_{PJ,y}$ = Total quantity of net electricity delivered to the INDIAN grid.

$EF_{grid,CM,y}$ = Combined margin CO_2 emission factor for grid connected power generation in year y

$EF_{grid,CM,y}$= 0.9352 t CO_2/MWh.

Project Participant	Capacity	PLF (%)	Generated Power (MWh/year)	Baseline Emission Factor (tCO2/MWh)	Baseline emissions (tCO_2e/ year)
Greenko Sironj Wind Power Pvt Ltd	200 MW_{AC}	36.30%	635,976	0.9352	594,764

BE_y = 635,976* 0.9352 tCO_2/ year = 594,764 tCO_2/year (round down value)

Project emissions

As per the ACM0002 ver-21.0 No project emissions are applicable. Hence, PE_y = 0

Leakage emissions

As per the ACM0002 ver-21.0 No leakage emissions are applicable. Hence, LE_y = 0

Emission reductions

ER_y = BE_y = 594,764 tCO_2/year

B.6.4 Summary of ex ante estimates of each SDG Impact

SDG 7: Affordable and Clean Energy

YEAR	BASELINE ESTIMATE	PROJECT ESTIMATE	NET BENEFIT
Year 1	0	635,976 MWh	635,976 MWh
Year 2	0	635,976 MWh	635,976 MWh
Year 3	0	635,976 MWh	635,976 MWh
Year 4	0	635,976 MWh	635,976 MWh
Year 5	0	635,976 MWh	635,976 MWh
Total	0	3,179,880 MWh	3,179,880 MWh
Total number of crediting years		5	
Annual average over the crediting period	0	635,976 MWh	635,976 MWh

The project activity falls under INDIAN grid, which constitutes of both fossil fuels and non-fossil fuels sources of electricity generation hence in baseline, the affordable and Clean Energy generated was 0. Since the project is a Wind energy project, therefore the Affordable and Clean Energy produced by the project is 635,976 MWh per year.

SDG 8: Decent Work and Economic Growth

YEAR	BASELINE ESTIMATE	PROJECT ESTIMATE	NET BENEFIT
Year 1	0 Training, 0 Jobs	1 Training, 15 Jobs	1 Training, 15 Jobs
Year 2	0 Training, 0 Jobs	1 Training, 15 Jobs	1 Training, 15 Jobs
Year 3	0 Training, 0 Jobs	1 Training, 15 Jobs	1 Training, 15 Jobs
Year 4	0 Training, 0 Jobs	1 Training, 15 Jobs	1 Training, 15 Jobs
Year 5	0 Training, 0 Jobs	1 Training, 15 Jobs	1 Training, 15 Jobs
Total	0 Training, 0 Jobs	5 Training, 15 Jobs	5 Training, 15 Jobs
Total number of crediting years		5	
Annual average over the crediting period	0 Training, 0 Jobs	1 Training, 15 Jobs	1 Training, 15 Jobs

There was no trainings and jobs in the baseline however the training, jobs generated annually by the project activity is 1 and 15[29] respectively.

SDG13: Climate Action

YEAR	BASELINE ESTIMATE	PROJECT ESTIMATE	NET BENEFIT
Year 1	594,764 tCO_2e	0 tCO_2e	594,764 tCO_2e
Year 2	594,764 tCO_2e	0 tCO_2e	594,764 tCO_2e
Year 3	594,764 tCO_2e	0 tCO_2e	594,764 tCO_2e
Year 4	594,764 tCO_2e	0 tCO_2e	594,764 tCO_2e
Year 5	594,764 tCO_2e	0 tCO_2e	594,764 tCO_2e

[29] A minimum of 15 employees will be maintained during the crediting period.

Total	2,973,820 tCO_2e	0 tCO_2e	2,973,820 tCO_2e
Total number of crediting years		5	
Annual average over the crediting period	594,764 tCO_2e	0 tCO_2e	594,764 tCO_2e

The project activity falls under INDIAN grid, which constitutes of both fossil fuels and non-fossil fuels sources of electricity generation hence in baseline, the estimated emission is 594,764 tCO_2e per year. Since the project is Wind energy project, therefore the project does not emit any GHG.

B.7. Monitoring plan

B.7.1 Data and parameters to be monitored

Relevant SDG Indicator 7.2.1: Affordable and Clean Energy

Data / Parameter	$EG_{PJ,y}$
Unit	MWh/year
Description	Quantity of net electricity supplied to the grid during the year y.
Source of data	Monthly energy generation statement (REA[30] statement) provided by SRPC[31] every month.
Value(s) applied	635,976
Measurement methods and procedures	• Data Type: Measured • Monitoring equipment: Energy Meters of accuracy class 0.2s • Archiving Policy: Paper &/or Electronic • Calibration frequency of meter: Once in 5 years as per CEA guidelines[32].

[30] Regional Energy Account
[31] Southern Regional Power Committee
[32] https://cea.nic.in/old/reports/regulation/CEA_metering_regulation_amendment_2019.pdf

	Electricity exported/imported to the grid is in kWh. However, for the calculation purpose electricity exported is converted in MWh. The Net electricity supplied to the grid by the project activity will be calculated as a difference of electricity exported to the grid, electricity imported from the grid obtained from Monthly Meter reading reports (REA Statement) as per below equation: $EG_{PJ,y} = EG_{Export} - EG_{Import}$ The details of the calibration of the meters are mentioned in appendix 5 of the PDD below.
Monitoring frequency	Measurement: Continuous Recording: Monthly Monitoring Method: Monthly energy generation statement includes monthly recording of electricity export & import with the help of Energy meters of accuracy class 0.2s.
QA/QC procedures	Quantity of net electricity supplied to the grid is sourced from Monthly energy generation statement (REA statement) and same can be cross checked from Invoices/ Monthly Bill raised by the Project Participant to SECI. The project proponent shall ensure that calibration of electricity meters is carried out in-line with PPA which recommends at least once in 5-year calibration or whenever abnormal difference/inconsistency is observed between main meter and check meter.
Purpose of data	Calculation of baseline emissions
Additional comment	Data is archived in paper & electronic form for two years after the end of crediting period or of the last issuance of VERs for this project activity, whichever occurs later.

Relevant SDG Indicator SDG 8.5.1: Decent Work and Economic Growth

Data / Parameter	• Quantitative employment • Quality of employment
Unit	• Number (Trainings) • Number (employees)
Description	• Number of Trainings provided to employees & O&M staff

	• Number of project employees with Number of male/female, permanent/temporary, age and person with disabilities.
Source of data	• Training Records (HSE & HR) • Employee Records
Value(s) applied	A minimum of 15 employees will be maintained during the crediting period. All the 15 employees are local working in the site. The trainings & workshops are given to the O&M staff are: • HSE Training Record • Soft Skill Training It is expected that a minimum of 1 training (either of the above) is carried out annually. Further, Workplace Health & Safety trainings are also conducted annually. The training programs help in making the workforce efficient and skilled at their job. This not only helps the company but adds to growth of individual employees. Thus, the project has a positive impact on the parameter.
Measurement methods and procedures	• Training Records. • Employee Records
Monitoring frequency	Once in a Monitoring period
QA/QC procedures	The number of persons employed is mentioned in the plant register, which can be crossed checked with daily attendance register.
Purpose of data	Continuation of regular trainings/workshops for employees & O&M staff
Additional comment	The data is archived for crediting period+2 years

Relevant SDG Indicator 13.2.1: Climate Action

Data / Parameter	Emissions Reduction
Unit	tCO_2e
Description	Reduction in CO_2 emission reduction due to implementation of project activity
Source of data	Calculated as per "Tool to calculate the emission factor for an electricity system,". The data are obtained from "CO_2 Baseline Database for Indian Power Sector" version 19.0, published by the Central Electricity Authority, Ministry of Power, Government of India.

Value(s) applied	594,764 tCO2e emission reductions estimated per annum
Measurement methods and procedures	Calculated from CEA database and Energy Generation
Monitoring frequency:	The energy meters are calibrated once in every 5 years by an independent testing laboratory. The calibration of the meters will be done once in 5 years as per CEA guidelines. The accuracy class of meters, feeder arrangements, metering and determination of net electricity supplied to grid and calibration interval are under purview of state electricity board and PP do not have any control on it.
QA/QC procedures	A check meter is also installed near to the main meter to cross check the electricity exported to the grid. The check meter reading is also used in case of failure of main meter.
Purpose of data	Calculation of baseline emissions
Additional comment	The data is archived for crediting period+2 years

Relevant SDG Indicator/ Safeguarding Principle 6.1 Labor Rights

Data / Parameter	Labour Rights
Unit	Not applicable
Description	Labor rights relating to labour relations between workers and employers.
Source of data	• Training records • Records of accidents and incidents, emergency preparedness and response measures.
Value(s) applied	• It is expected that a minimum of 1 training (either of the above) is carried out annually. • Records of accidents and incidents, emergency preparedness and response measures.
Measurement methods and procedures	The Project Developer ensures the training of workers, documentation and reporting of accidents and incidents, and emergency preparedness and response measures. Please refer section B.7.2.1 above, same has been considered as monitoring parameter under SDG 8
Monitoring frequency:	Once in every monitoring period
QA/QC procedures	The Training records and Records of accidents and incidents, emergency preparedness and response measures are mentioned at site.

Purpose of data	Analysis of safeguarding principle
Additional comment	-

Relevant SDG Indicator/ Safeguarding Principle 9.5 Hazardous and Non-hazardous Waste

Data / Parameter	Hazardous Waste
Unit	Tons
Description	The manufacture, trade, release and use of hazardous and non-hazardous chemicals and/or materials.
Source of data	Plant records
Value(s) applied	0
Measurement methods and procedures	-
Monitoring frequency:	Once in every monitoring period
QA/QC procedures	The manufacture, trade, release and use of hazardous and non-hazardous chemicals and/or materials.
Purpose of data	Analysis of safeguarding principle
Additional comment	-

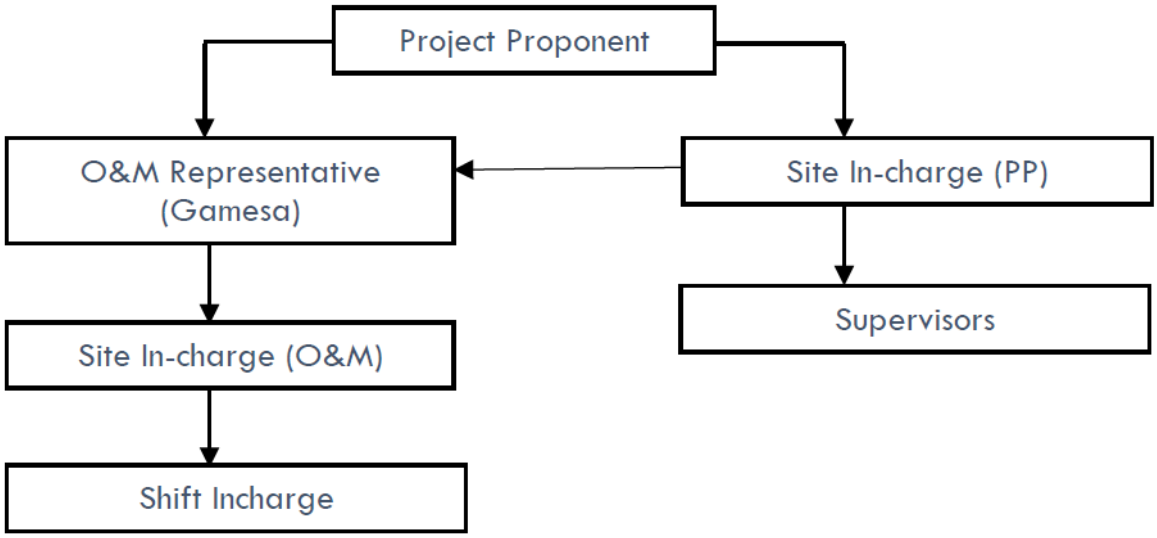
B.7.2 Sampling plan

No sampling process is involved as the project activity is a wind Power generation. Hence, this section is not applicable.

B.7.3 Other elements of monitoring plan

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

The authority and responsibility for registration, monitoring, measurement, reporting and reviewing of the data rests with the project participant.



Responsibilities of Site Incharge (PP): Overall functioning and maintenance of the project activity, the Site incharge shall coordinate with the O&M operator as well as the site supervisors.

Responsibilities of O&M Representative: Co-ordination between Site incharge of the O&M operator as well as the project participant and further report to PP head office.

Responsibilities of Site In-charge (O&M Operator): Responsibility for maintaining the data records, ensures completeness of data, and reliability of data (calibration of equipment) as well as data recording for all the parameters.

Responsibilities of Shift In-charge: Responsibility for day-to-day data collection and maintains day to day monitored data.

Data Measurement

Projects activity comprises of installation of 3 Energy meters (1 main meter, 1 check meter and 1 standby meter) main and check meter are installed at government Substation and standby meter is installed at a Pooling Substation prior to the Delivery point.

The export and import energy will be measured continuously using above mentioned Main, Check & Standby meters installed at Substation. Export & Import readings of Main, Check & Standby meters shall be taken on monthly basis by authorized officer of SECI in the presence of representative(s) of PP. The meter reading will be taken jointly and signed by the representatives of the SECI and representative(s) of PP. Based on the readings, invoices/ monthly bills will be raised by PP. These invoices/ monthly bills

can be used for cross checking the meter readings taken for the respective project activity.

In case of pooling of multiple Projects at the same Substation, power from multiple Projects will be pooled at a Pooling Substation prior to the Delivery point and the combined power will be fed at Delivery point through a common transmission line from the Pooling Substation. In such cases, 3 sub-meters (main, check & standby) are also to be set up at pooling substation for individual projects in addition to the meters at Delivery Point.

It is to be noted that though the PP or their representatives are available during meter reading, the calculations of net electricity supplied to grid is completely under purview of SECI and PP does not have any control on it. Also, accuracy class of meters and calibration frequency is under purview of SECI/Discom officer and PP does not have any control on it. PP gets the monthly credit report from where net electricity supplied to grid is obtained and used for emission reduction calculations.

Data collection and archiving

Export & Import readings from main, check & standby meters will be collected under the supervision of the O&M Team or authorized representatives of PP. The net electricity supplied to grid would be calculated based on export & import readings. Export and Import data would be recorded and stored in electronic &/or Paper format. The records are checked periodically by the Head (Operations) and discussed thoroughly with the O&M Team. The period of storage of the monitored data will be 2 years after the end of crediting period or till the last issuance of GS VERs for the project activity whichever occurs later.

Mismatch in Monitoring Period and the Billing Period

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

D = (A/B)*C

Where,

A = Difference of number of days which are not matching of billing period and monitoring period.

B = Number of days of the billing period/ month which was not matched with the monitoring period.

C = Net Electricity supplied to the grid for that given billing period/ month.

The calculated value after apportioning would be used for calculation of emission reductions during that period.

Emergency preparedness

The project activity will not result in any unidentified activity that can result in substantial emissions from the project activity. No need for emergency preparedness in data monitoring is visualized.

The Main and Check meters are installed at GSS and Standby meter is installed at PSS, in case Main meter or Check meter is found to be outside the acceptable limits of accuracy or faulty or not functioning properly, it will be repaired, recalibrated or replaced as soon as possible. In the event that the Main meter is not in service as a result of maintenance, repairs or testing, the Check meter will be used for readings and in the event that the Main meter and check meter both are not in service as a result of maintenance, repairs or testing, the Standby meter will be used for readings.

The net electricity is calculated from the difference between export and import, which is used for baseline emission calculations, and the export and import readings are taken from the energy meters which are required to be calibrated as per the calibration frequency. If the calibration is delayed, the error factor will be applied as per the accuracy class of the energy meter for the delayed period at the time of verification.

Personnel training

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

SECTION C. DURATION AND CREDITING PERIOD

C.1. Duration of project

C.1.1 Start date of project

22/11/2017 as per the date of signed EPC between Orange Sironj Wind Power Pvt Ltd. and Seimens Gamesa Renewable power pvt ltd.

C.1.2 Expected operational lifetime of project

20 years 00 months from the commissioning

C.2. Crediting period of project

C.2.1 Start date of crediting period

The first crediting period is 07/03/2019 to 06/03/2024 therefore, the start date of second crediting period is 07/03/2024.

C.2.2 Total length of crediting period

Start date of crediting period: 07/03/2024.

End date of crediting period:06/03/2029.

Total length of crediting period is 5 years 00 Months.

SECTION D. SUMMARY OF SAFEGUARDING PRINCIPLES AND GENDER SENSITIVE ASSESSMENT

D.1 Safeguarding Principles that will be monitored

A completed Safeguarding Principles Assessment is in Appendix 1, ongoing monitoring is summarised below.

PRINCIPLES	MITIGATION MEASURES ADDED TO THE MONITORING PLAN
Principle 6.1 Labor Rights	The project as fulfilling the requirement of Safeguarding Principles & Requirements version 2.1. The Project Developer ensures the training of workers, documentation and reporting of accidents and incidents, and emergency preparedness and response measures. There is no forced labour and all employees are working as per national labour and occupational health and safety laws[33].

[33] https://ncib.in/pdf/ncib_pdf/Labour%20Act.pdf

Principle 9.5 Hazardous and Non-hazardous Waste	The project as fulfilling the requirement of Safeguarding Principles & Requirements version 2.1. The waste is disposed to the waste handlers and the firm complies with all the local laws for monitoring and disposal. Also, the project developer is trying to minimize the generation of hazardous and nonhazardous waste materials.
Principle 9.10 High conservation value areas and critical habitats	Since this is wind power plant, birds may strike into their spinning blade while flying but by applying contrast painting to the rotor blades significantly reduced the collision risk. The appointed personnel of O&M team maintain a Bird strike register. During the siting activity, it was ensured that there are no water bodies beside WTGs, also water pits are not allowed around the WTGs and none of the area of WTGs erection or transmission lines are under sensitive or under areas of conservation importance.

D.2. Assessment that project complies with GS4GG Gender Sensitive requirements

Question 1 - Explain how the project reflects the key issues and requirements of Gender Sensitive design and implementation as outlined in the Gender Policy?	As per Gold Standard Gender Policy, para 4.2 (i) "Foundational gender-sensitive requirement - This strengthens Gold Standard's 'do no harm' approach and addresses safeguards to prevent or mitigate adverse impacts on women or men and girls and boys. Such action is mandatory for all projects seeking Gold Standard certification and includes compliance with the gender 'do no harm' safeguards, gender gap analysis and gender sensitive stakeholder consultations." The project being a

	renewable energy project is not gender sensitive project. The project does not adversely impact women or men.
Question 2 - Explain how the project aligns with existing country policies, strategies and best practices	India is party to "Convention on the Elimination of All Forms of Discrimination against Women[34]" and the project has aligned its policies which does not discriminate on gender.

[34] http://hrlibrary.umn.edu/research/ratification-india.html

Question 3 - Is an Expert required for the Gender Safeguarding Principles & Requirements?	The project does not seek to graduate to gender-grade GS certification and thus foundational gender sensitive requirements have been justified. As per GS4GG GENDER EQUALITY REQUIREMENTS & GUIDELINES, "Gold Standard may require that the Project seek the input of an Expert Stakeholder and to include their recommendations in the Project design. For projects seeking gender-responsive certification, the Gold Standard VVBs audit teams shall include gender consultants with relevant sector expertise to verify the gender claims of the project". The Project participants do not involve and promote any discrimination about the gender differences. The same is ensured into Sustainability Policy, hence no expert Stakeholder inputs are required. Further the questions raised in the Gold Standard Safeguarding Principles & Requirements document are described under Appendix 1.

Question 4 - Is an Expert required to assist with Gender issues at the Stakeholder Consultation?	No Expert is required to assist with Gender issues at the Stakeholder Consultation as the stakeholders were invited in a 'gender-sensitive' manner and efforts has been made to solicit input from women and marginalised groups. As per the GS Stakeholder guidelines, section 1.1.2 "All Gold Standard projects shall take gender issues into account". This requires local stakeholder consultation processes to reach a wide range of community representatives in ways that ensure equal and effective participation of both women and men, and that gender issues are fully factored into comprehensive social and environmental impact assessments." The Local Stakeholder Consultation Meeting had an overall healthy participation in the meeting. It was held during the day, as women tend to circulate more freely and safely than after sunset. All the villagers were invited for the consultation through invitation pasted in public places (local administration Offices, Bus Stand, Market etc.) The meeting was conducted in local language Telugu and English translation is prepared for the purpose of reporting. The project representative explained how the power projects help in providing clean energy and thereby help in mitigating impacts due to Global Warming and the impact wind power projects which lead to

providing clean energy, increase in employment opportunities both long term and short term, increased income and thereby leading to improvement in living standard of the people.

SECTION E. SUMMARY OF LOCAL STAKEHOLDER CONSULTATION

E.1 Summary of stakeholder mitigation measures

The project activity is registered in GS4GG. PD had conducted the Stakeholder consultation physical meeting in line with the GS4GG requirements and guidelines.
The local stakeholder consultation meeting was applicable as the project is retroactive registration project hence, No separate stakeholder meeting has been conducted for renewable of Crediting period.
The table 2.8 of the GS toolkit was used to identify the stakeholders. The identified stakeholders were the ones local people impacted by the project and then were local NGOs, International NGOs, GS representatives and local govt etc.
All the stakeholders have been invited through public notice which were displayed to the nearby areas. Further, stakeholders were invited individually to attend the stakeholders meeting. The meeting was held on 09/05/2018.

In the introductory speech, the representatives of Project Participant welcomed the gathering and given a brief about the project activity. Subsequent to the introductory speech, stakeholders were explained about the electricity generation from wind project is an environmentally friendly power generation technology contributing to reduction in GHG emissions. They were also explained about the benefits of the wind power projects like, increasing energy availability and improving quality of power and its assistance to the local population by providing employment opportunities to both skilled & unskilled labours.
The representative of project participant explained about the power generation process from this wind power Plant and emphasised on the positive impacts that this project would leave on the local community via:

- This would create employment opportunity for a large number of people during construction period and continued employment opportunities for the local skill set over the project life time.

- This would improvise the standard of living of the local community.
- In addition, as this project would utilise available wind resource to generate power and there would be no associated emissions which would help in maintaining the environment clean.

The villagers raised various queries and clarification provided is as summarised below:

Name of the stakeholder:	M. Kalaivani
Comment: What kind of CSR projects has been carried out in the area? Response: OSWPPL carries out various CSR activities in the region like providing such as health camps, distribution of furniture & sports kits in schools, toilet requirements in government schools, drinking water requirements.	

Name of the stakeholder:	S. Shankaringam
Comment 2: How would locals be employed by the company Response: Employment opportunities are available in both technical and non-technical areas. For technical jobs qualified persons have been employed, however for non-technical jobs like security and transportation, construction preference has been for employment of local persons.	

Name of the stakeholder:	Abhishek Reddiwal
Concerns: Would such CSR activities also be carried out in other areas which are not near the project activity. Reply from PP/ PP Representative: The implementation of CSR activities have been started with the villages which are near to the site, however these activities would be spread gradually over new areas which have not yet been covered.	

Name of the stakeholder:	S. Paramsivan
Concerns: what impact does the project have in reducing the shortage of electricity faced in the area. Reply from PP/ PP Representative: The electricity generated by the project helps the grid to meet its demand and as a result over the past few years the hours for electricity shut downs has decreased and now electricity is available with only minor disruptions.	

Name of the stakeholder:	M. Santhana Rangam
Comment 5: What impact does the project have on ground water usage. How much water would be used by the project. Reply from PP/ PP Representative: The project being a wind power project does not use any water during the operational stage. Water usage is restricted to administrative building and daily usage by the employees, water is not used any operational issues of the wind mill. There would not be any impact on ground water usage by the project.	

Name of the stakeholder:	M. Murugan
Comment 6: Electricity lines damage the local environment in case any transmission line falls on the ground, also electrocution cases have been observed in many projects. What safety measures are taken by the company to stop such impacts? Response: The equipment supplier as well as the O&M entity for the project is Siemens Gamesa which is renowned entity worldwide for Wind power project. It takes precautionary measures for safety.	

E.2 Final continuous input / grievance mechanism

METHOD	INCLUDE ALL DETAILS OF CHOSEN METHOD (S) SO THAT THEY MAY BE UNDERSTOOD AND, WHERE RELEVANT, USED BY READERS.
Continuous Input / Grievance Expression Process Book (mandatory)	The Grievance Register are available at the project site office of Greenko Sironj Wind Power Pvt Ltd. located at Pudhiyamputhur Villages of Dist. Thoothukudi, Tamil Nadu state in India. The project activity has 100 WTGs. The documentation is available permanently to stakeholders at project site office.
GS Contact (mandatory)	help@goldstandard.org

Other	Phone number of the contact person is circulated along with the stakeholder meeting and is also available in project site office. Project Developer: Mr. Murali Krishnam Raju M and his contact number is: +91(40) 4030 1004 Email id: muraliraju.m@greenkogroup.com SustainCert: info@sustain-cert.com

APPENDIX 1 - SAFEGUARDING PRINCIPLES ASSESSMENT

SOCIAL SAFEGUARDING PRINCIPLES		
Reference requirement	Question	Response
P.1 |HUMAN RIGHTS		
P.1.1.1 |	Does the project developer, its representatives and the Project disrespect internationally proclaimed human rights?	☐ YES ☒ NO
P.1.1.1 |	Is the project involved or complicit in violence or human rights abuses of any kind as defined in the Universal Declaration of Human Rights?	☐ YES ☒ NO
P.1.1.2 |	Have local communities or individuals raised human rights concerns regarding the project (e.g., during the stakeholder engagement process, grievance processes, public statements)?	☐ YES ☒ NO
P.1.1.3 |	Is there a risk that rights-holders (e.g., Project-affected stakeholders) do not have the capacity to claim their rights?	☐ YES ☒ NO
P.1.1.3 |	Does this project undermine national or regional measures for the realisation of the right to development?	☐ YES ☒ NO
If the answer to any of the questions above is "yes," please explain the reason and how the project will ensure compliance with applicable requirements.		
NOT APPLICABLE		
Would the project potentially involve or lead to:		
P.1.1.1 |	adverse impacts on enjoyment of the human rights (civil, political, economic, social or cultural) of the affected population and particularly of marginalised groups?	☐ YES ☐ POTENTIALLY ☒ NO
P.1.1.2 |	inequitable or discriminatory impacts on affected populations, particularly people living in poverty or marginalised or excluded individuals or groups, including persons with disabilities?	☐ YES ☐ POTENTIALLY ☒ NO
P.1.1.3 |	restrictions in availability, quality of and/or access to resources or basic services, in particular to marginalised individuals or groups, including persons with disabilities?	☐ YES ☐ POTENTIALLY ☒ NO
P.1.1.3 |	exacerbation of conflicts among and/or the risk of violence to project-affected communities and individuals?	☐ YES ☐ POTENTIALLY ☒ NO
Briefly describe below how the project incorporates a human rights-based approach. For example, by describing how the project design:		
- is informed by human rights analysis, including from UN human rights mechanisms (human rights treaty bodies, universal periodic review, special procedures)		

- includes measures to assist the government to realise (respect, protect and fulfil) human rights under international law and to implement human rights-related standards in national law (whichever is higher)
- enhances the availability, accessibility and quality of benefits and services for potentially marginalised individuals and groups, and to increase their inclusion in decision-making processes that may impact them (consistent with the non-discrimination and equality human rights principle)
- provides reasonable accommodations to strengthen inclusivity and accessibility of project benefits and services to persons with disabilities.

NOT APPLICABLE

P.2 |GENDER EQUALITY AND WOMEN'S EMPOWERMENT

P.2.1.1 |	Have women's groups/leaders raised gender equality concerns regarding the project, (e.g., during the stakeholder engagement process, grievance processes, public statements)?	☐ YES ☒ NO
P.2.1.2 |	Does the project undermine the principles of non-discrimination, equal treatment, and equal pay for equal work?	☐ YES ☒ NO
P.2.1.2 |	Does the project prevent men and women from having equal opportunities to participate in identified tasks and activities, whether through paid work, volunteer work, or community contributions, as appropriate?	☐ YES ☒ NO
P.2.1.2 |	Does the project limit the participation of women or men based on pregnancy, maternity/paternity leave, or marital status?	☐ YES ☒ NO
P.2.1.2 |	Is information about project objectives being communicated in a way that is inappropriate for the local context and not tailored to the methods of understanding of both women and men, which could hinder their participation?	☐ YES ☒ NO
P.2.1.3 |	Has the project assessed gender risks without referencing the country's gender strategy or equivalent national commitment?	☐ YES ☒ NO
P.2.1.4 |	Has expert stakeholder(s) been involved, and has their input been requested for the project design on gender equality and women's empowerment?	☐ YES ☒ NO

If the answer to any of the questions above is "yes," please explain the reason and how the project will ensure compliance with applicable requirements.

NOT APPLICABLE

Would the project potentially involve or lead to:		
P.2.1.1 |	adverse impacts on gender equality and/or the situation of women and girls?	☐ YES ☐ POTENTIALLY ☒ NO
P.2.1.1 |	exacerbation of risks of gender-based violence? For example, through the influx of workers to a community, changes in community and household power dynamics,	☐ YES ☐ POTENTIALLY ☒ NO

	increased exposure to unsafe public places and/or transport, etc.	
P.2.1.2 |	reproducing discriminations against women based on gender, especially regarding participation in design and implementation or access to opportunities and benefits?	☐ YES ☐ POTENTIALLY ☒ NO
P.2.1.2 |	limitations on women's ability to use, develop and protect natural resources, taking into account different roles and positions of women and men in accessing environmental goods and services? For example, activities that could lead to natural resources degradation or depletion in communities who depend on these resources for their livelihoods and well-being.	☐ YES ☐ POTENTIALLY ☒ NO

Briefly describe below how the project is addressing any identified risk to gender equality and women's empowerment.

NOT APPLICABLE

P.3 |COMMUNITY HEALTH AND SAFETY

P.3.1.1 |	Does the project involve potential risks to the health and safety of affected communities during its life cycle?	☐ YES ☒ NO
P.3.1.2 |	Does the project involve any potential risks to the workers' safety and health?	☐ YES ☒ NO

If the answer to any of the questions above is "yes," please explain the reason and how the project will ensure compliance with applicable requirements.

NOT APPLICABLE

Would the project potentially involve or lead to:

P.3.1.1 |	construction and/or infrastructure development (e.g., roads, buildings, dams)?	☐ YES ☒ NO
P.3.1.2 |	air pollution, noise, vibration, traffic, injuries, physical hazards, poor surface water quality due to runoff, erosion, sanitation?	☐ YES ☐ POTENTIALLY ☒ NO
P.3.1.2 |	harm or losses due to failure of structural elements of the project (e.g., collapse of buildings or infrastructure)?	☐ YES ☐ POTENTIALLY ☒ NO
P.3.1.2 |	risks of water-borne or other vector-borne diseases (e.g., temporary breeding habitats), communicable and noncommunicable diseases, nutritional disorders, mental health?	☐ YES ☐ POTENTIALLY ☒ NO
P.3.1.2 |	transport, storage, and use and/or disposal of hazardous or dangerous materials (e.g., explosives, fuel and other chemicals during construction and operation)?	☐ YES ☐ POTENTIALLY ☒ NO
P.3.1.2 |	adverse impacts on ecosystems and ecosystem services relevant to communities' health (e.g., food, surface water purification, natural buffers from flooding)?	☐ YES ☐ POTENTIALLY ☒ NO

Briefly describe below how the project is addressing any identified risk related to community health and safety.
NOT APPLICABLE

P.4 |CULTURAL HERITAGE, INDIGENOUS PEOPLE, DISPLACEMENT AND RESETTLEMENT

P.4.1 |Sites of Cultural and Historical Heritage

P.4.1.1 |	Does the project involve altering, damaging, or removing sites, objects, or structures of significant cultural heritage?	☐ YES ☒ NO

If the answer to question above is "yes," please explain the reason and how the project will ensure compliance with applicable requirements.
NOT APPLICABLE
Would the project potentially involve or lead to:

P.4.1.1 |	activities adjacent to or within a cultural heritage site?	☐ YES ☐ POTENTIALLY ☒ NO
P.4.1.1 |	significant excavations, demolitions, movement of earth, flooding or other environmental changes?	☐ YES ☐ POTENTIALLY ☒ NO
P.4.1.1 |	alterations to landscapes and natural features with cultural significance?	☐ YES ☐ POTENTIALLY ☒ NO
P.4.1.1 |	adverse impacts to sites, structures, or objects with historical, cultural, artistic, traditional or religious values or intangible forms of culture (e.g., knowledge, innovations, practices)? (Note: projects intended to protect and conserve Cultural Heritage may also have inadvertent adverse impacts)	☐ YES ☐ POTENTIALLY ☒ NO
P.4.1.2 |	utilisation of tangible and/or intangible forms (e.g., practices, traditional knowledge) of Cultural Heritage for commercial or other purposes?	☐ YES ☐ POTENTIALLY ☒ NO
P.4.1.2 |	If answer to question above is "YES" or "POTENTIALLY" - are the communities made aware of their right under the law, scope and nature of proposed development and its potential consequences?	☐ YES ☒ NO ☐ NA
P.4.1.3 |	If answer to question above is "YES" - does the project provide equitable sharing of benefits from commercialisation of such knowledge, innovation, or practice, consistent with their customs and traditions?	☐ YES ☒ NO ☐ NA
P.4.1.4 |	If answer to question above is "YES" - are opinions and recommendations of an Expert Stakeholder(s) not sought and demonstrated as being included in the project design?	☐ YES ☒ NO ☐ NA

P.4.1.4 |	If answer to question above is "YES", has project design been changed, modified, updated considering opinions and recommendations of an Expert Stakeholder?	☐ YES ☒ NO ☐ NA

If the answer is "yes" or "potentially" to any of the above questions, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

NOT APPLICABLE

P.4.2 |*Forced Eviction and Displacement*

P.4.2.1 |	Does the project involve any risks related to involuntary relocation of people?	☐ YES ☒ NO

If the answer to question above is "yes," please explain the reason and how the project will ensure compliance with applicable requirements.

NOT APPLICABLE

Would the project potentially involve or lead to:

P.4.2.1 |	risk of forced evictions or involuntary relocation of people?	☐ YES ☐ POTENTIALLY ☒ NO
P.4.2.2 |	temporary or permanent and full or partial physical displacement (including people without legally recognisable claims to land)?	☐ YES ☐ POTENTIALLY ☒ NO
P.4.2.2 |	economic displacement (e.g., loss of assets or access to resources due to land acquisition or access restrictions – even in the absence of physical relocation)?	☐ YES ☐ POTENTIALLY ☒ NO
P.4.2.2 |	If answer to question above is "YES" or "POTENTIALLY", - has the project developed Resettlement Action Plan or Livelihood Action Plan in consultation and agreement with affected individual, group or community? - has the project integrated Resettlement Action Plan or Livelihood Action Plan into the Project design?	☐ YES ☒ NO ☐ NA
P.4.2.3 |	If answer to question above is "YES" - are opinions and recommendations of an Expert Stakeholder(s) not sought and demonstrated as being included in the project design?	☐ YES ☒ NO ☐ NA
P.4.2.3 |	If answer to question above is "YES", have project design been changed, modified, updated considering opinions and recommendations of an Expert Stakeholder?	☐ YES ☒ NO ☐ NA

If the answer is "yes" or "potentially" to any of the above questions, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

NOT APPLICABLE

P.4.3 |LAND TENURE AND OTHER RIGHTS

P.4.3.1 |	Does the project involve any risks related to identifying and managing legitimate tenure rights that may be affected by the project?	☐ YES ☒ NO

If the answer to question above is "yes," please explain the reason and how the project will ensure compliance with applicable requirements.

NOT APPLICABLE

Would the project potentially involve or lead to:

P.4.3.1 |	impacts on or changes to land tenure arrangements and/or community-based property rights/customary rights to land, territories and/or resources?	☐ YES ☐ POTENTIALLY ☒ NO
P.4.3.1 |	uncertainties with regards to land tenure, access rights, usage rights or land ownership? Examples include, but are not limited to water access rights, community-based property rights and customary rights.	☐ YES ☐ POTENTIALLY ☒ NO
P.4.3.2 |	Changes in legal arrangements, if yes, are the changes done in line with relevant laws and regulations?	☐ YES ☒ NO ☐ NA
P.4.3.2 |	Changes in legal arrangements, if yes, are these changes agree with free, prior and informed consent of the involved stakeholders?	☐ YES ☒ NO ☐ NA
P.4.3.3 |	Does some other entity (other than the project developer) hold uncontested land title for the entire Project Boundary?	☐ YES ☒ NO ☐ NA
P.4.3.4 |	Are opinions and recommendations of an Expert Stakeholder(s) not sought and demonstrated as being included in the project design?	☐ YES ☒ NO ☐ NA
P.4.3.4 |	If answer to question above is “YES”, have project design been changed, modified, updated considering opinions and recommendations of an Expert Stakeholder?	☐ YES ☒ NO ☐ NA
P.4.3.5 |	Have project developer in consultation with stakeholders established a functioning mechanism to receive, process, resolve, communicate and record grievances?	☐ YES ☒ NO ☐ NA

If the answer is "yes" or "potentially" to any of the above questions, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

NOT APPLICABLE

P.4.4 |INDIGENOUS PEOPLES

P.4.4.1 |	Does the project involve Indigenous People within the Project area of influence who may be affected directly or indirectly by the Project?	☐ YES ☒ NO

If the answer to question above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.

NOT APPLICABLE

Would the project potentially involve or lead to:		
P.4.4.1 |	affect areas where indigenous peoples are present (including project area of influence)	☐ YES ☐ POTENTIALLY ☒ NO
P.4.4.1 |	affect areas, land and territory claimed by indigenous peoples?	☐ YES ☐ POTENTIALLY ☒ NO
P.4.4.1 |	impacts (positive or negative) to the human rights, lands, natural resources, territories, and traditional livelihoods of indigenous peoples?	☐ YES ☐ POTENTIALLY ☒ NO
P.4.4.7 |	If answer to above questions is ''YES'' or "POTENTIALLY", - Is it determined that the proposed project may affect the rights, lands, resources, or territories of indigenous people? - Has an "Indigenous People Plan" (IPP) or "Indigenous People Plan Framework" been elaborated and included in the project documentation? - Was the plan developed in accordance with the effective and meaningful participation of indigenous peoples and in accordance with UNDP Guidelines?	☐ YES ☒ NO ☐ NA
P.4.4.3 |	risk of forcibly removing indigenous people from their lands and territories?	☐ YES ☐ POTENTIALLY ☒ NO
P.4.4.4 |	utilisation and/or commercial development of natural resources on lands and territories claimed by indigenous peoples? Consider, and where appropriate ensure, consistency with the answers under Principle 4.1 above	☐ YES ☐ POTENTIALLY ☒ NO
P.4.4.5 | P.4.4.6 |	If answer to question above is "YES" or "POTENTIALLY" - Did the project obtain free, prior and informed consent from indigenous people before taking their cultural, intellectual, religious, and/or spiritual property? - Does the project ensure that the indigenous people receive an equitable sharing of benefits resulting from the use of their traditional knowledge and practices? ? - Does the project ensure that the sharing of benefits resulting from the use of indigenous peoples' traditional knowledge and practices is culturally appropriate and inclusive?	☐ YES ☒ NO ☐ NA

	- Does the project ensure that the provision of equitable sharing of benefits does not impede land rights or equal access to basic services including health services, clean water, energy, education, safe and decent working conditions, and housing?	
P.4.4.8 |	Does the project lack appropriate feedback and grievance channels for Indigenous Peoples and their representatives?	☐ YES ☒ NO ☐ NA
P.4.4.8 |	Has a grievance mechanism not been established at the beginning of programme or project implementation with due consideration given to customary dispute settlement mechanisms among the Indigenous Peoples concerned and will it remain operational throughout the project cycle?	☐ YES ☒ NO ☐ NA
P.4.4.9 |	Are opinions and recommendations of an Expert Stakeholder(s) not sought and demonstrated as being included in the project design?	☐ YES ☒ NO ☐ NA
P.4.4.9 |	If answer to question above is "YES", have project design been changed, modified, updated considering opinions and recommendations of an Expert Stakeholder?	☐ YES ☒ NO ☐ NA

If the answer is "yes" or "potentially" to any of the above questions, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

NOT APPLICABLE

P.5 |CORRUPTION

P.5.1.1 |	Does the project involve, or is it complicit in, contributing to or reinforcing corruption or corrupt projects?	☐ YES ☒ NO
P.5.1.1 |	Does the project have a risk of encouraging bribery, kickbacks, or other unethical behavior?	☐ YES ☒ NO

If the answer to any of the questions above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.

NOT APPLICABLE

ECONOMIC SAFEGUARDING PRINCIPLES

P.6 |ECONOMIC IMPACTS

P.6.1 |LABOUR RIGHTS AND WORKING CONDITIONS

P.6.1.1 |	Does the project involve, facilitate, or condone forced labor, or pose a potential risk of forced labor?	☐ YES ☒ NO
P.6.1.1 |	Does the project violate any labor or health and safety laws, international obligations, or ILO conventions?	☐ YES ☒ NO
P.6.1.2 |	Does the project violate the principles of equal opportunity and fair treatment in its employment decisions?	☐ YES ☒ NO

P.6.1.3 |	Does the project violate national laws, if available regarding non-discrimination in employment?	☐ YES ☒ NO
P.6.1.4 | P.6.1.5 |	Does the project allow child labor?	☐ YES ☒ NO
P.6.1.7 | P.6.1.8 |	Does the project have insufficient processes and measures in place to ensure the safety and health of project workers?	☐ YES ☒ NO
P.6.1.9 |	Does the project have insufficient measures to safeguard and support vulnerable project workers, such as women, people with disabilities, migrant workers, and young workers, and to prevent any kind of harassment, abuse, bullying, or exploitation, including gender-based violence (GBV)?	☐ YES ☒ NO
P.6.1.10 |	Does the project have no grievance mechanism available for workers to voice workplace concerns? Is information about this mechanism not provided to workers at the time of recruitment, or is it not easily accessible?	☐ YES ☒ NO

If the answer to any of the questions above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.

NOT APPLICABLE

Would the project potentially involve or lead to:
(NOTE: APPLIES TO BOTH PROJECT AND CONTRACTOR WORKERS)

P.6.1.1 |	use of forced labour?	☐ YES ☐ POTENTIALLY ☒ NO
P.6.1.1 |	working conditions that do not meet national labour laws and international commitments?	☐ YES ☐ POTENTIALLY ☒ NO
P.6.1.1 |	working conditions that may deny freedom of association and collective bargaining?	☐ YES ☐ POTENTIALLY ☒ NO
P.6.1.1 |	absence of documented working agreements with all individual workers *if such agreements do not exist, or do not address working conditions and terms of employment, the project developer shall provide reasonable working conditions and terms of employment.*	☐ YES ☐ POTENTIALLY ☒ NO
P.6.1.1 |	use of migrant workers? *if engaged, the developer shall ensure that they are engaged substantially equivalent terms and conditions to non-migrant workers carrying out similar work.*	☐ YES ☐ POTENTIALLY ☒ NO

P.6.1.1 |	having no arrangements for basic services[35] for workers? *the project developer shall put in place and implement policies on the quality and management of the accommodation and provision of basic services in a manner consistent with the principles of non-discrimination and equal opportunity. Workers' accommodation arrangements should not restrict workers' freedom of movement or of association*	☐ YES ☐ POTENTIALLY ☒ NO
P.6.1.2 |	any form of discrimination or harassment based on factors unrelated to job requirements, such as gender, race, nationality, ethnicity, social or indigenous origin, religion or belief, disability, age, or sexual orientation?	☐ YES ☐ POTENTIALLY ☒ NO
P.6.1.2 |	any form of discrimination in any aspect of employment, such as recruitment, compensation, working conditions, training, job assignment, promotion, termination, or discipline?	☐ YES ☐ POTENTIALLY ☒ NO
P.6.1.2 |	harassment, intimidation, and/or exploitation, especially in regard to women?	☐ YES ☐ POTENTIALLY ☒ NO
P.6.1.3 |	discriminatory working conditions and/or lack of equal opportunity where national law provides provision to address non-discrimination in employment?	☐ YES ☐ POTENTIALLY ☒ NO
P.6.1.4 |	use of child labour? (including third-party engaged workers)	☐ YES ☐ POTENTIALLY ☒ NO
P.6.1.4 |	inadequate and verifiable mechanisms for age verification?	☐ YES ☒ NO
P.6.1.7 |	no processes and measures in place for the safety and health of project workers?	☐ YES ☒ NO
P.6.1.7 |	No provision of safety and health training provisions, including on the proper use and maintenance of personal protective equipment conducted by competent persons and the maintenance of training records?	☐ YES ☒ NO
P.6.1.7 |	No provision to record and document accidents, diseases, incidents, and any resulting injuries, illnesses, or deaths?	☐ YES ☒ NO

[35] Basic services requirements refer to minimum space, supply of water, adequate sewage and garbage disposal system, appropriate protection against heat, cold, damp, noise, fire, and disease-carrying animals, adequate sanitary and washing facilities, ventilation, cooking and storage facilities and natural and artificial lighting, and in some cases basic medical services.

P.6.1.8 |	occupational health and safety risks due to physical, chemical, biological and psychosocial hazards (including violence and harassment) throughout the project life-cycle?	☒ YES ☐ NO
P.6.1.9 |	No measures to protect vulnerable project workers from harassment, exploitation, and gender-based violence (GBV)? This includes women, people with disabilities, migrant workers, and young workers.	☐ YES ☒ NO
P.6.1.10 |	No grievance mechanism available for workers to voice workplace concerns.	☐ YES ☒ NO
P.6.1.11 |	No measures for due diligence and the establishment of policies and procedures to manage and monitor the performance of third-party employees in the project?	☐ YES ☒ NO

If the answer is "yes" or "potentially" to any of the above questions, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

P.6.1.8 - The Project Developer ensures the training of workers, documentation and reporting of accidents and incidents and emergency preparedness and response measures.

All the supporting documents are provided as follows:

- Training Attendance sheets.
- Employee Records
- Salary slips of the employees

P.6.2 |NEGATIVE ECONOMIC CONSEQUENCES

P.6.2.1 |	Is there a risk of project failure during implementation or after project certification due to a lack of financial resources?	☐ YES ☒ NO
P.6.2.2 |	Does the project have potential negative impacts or pose a risk to the local economy?	☐ YES ☒ NO
P.6.2.2 |	Are there any potential risks or negative impacts this project may have on vulnerable or marginalised social groups, despite the benefits it may bring?	☐ YES ☒ NO

If the answer to any of the questions above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.

NOT APPLICABLE

Would the project involve or lead to:

P.6.2.2 |	economic impacts (negative/detrimental) to the local economy?	☐ YES ☐ POTENTIALLY ☒ NO
P.6.2.2 |	negative economic consequences during and after project implementation, e.g., for vulnerable and marginalised social groups in targeted communities?	☐ YES ☐ POTENTIALLY ☒ NO

If the answer is "yes" or "potentially" to any of the above questions, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

NOT APPLICABLE

P.7 |CLIMATE AND ENERGY

P.7.1 |GHG EMISSIONS

P.7.1.1 |	Does the project have a risk of increasing greenhouse gas emissions over the Baseline Scenario?	☐ YES ☒ NO

If the answer to question above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.
NOT APPLICABLE
Would the project involve or lead to:

P.7.1.1 |	increase greenhouse gas emissions over the Baseline Scenario?	☐ YES ☐ POTENTIALLY ☒ NO

If the answer is "yes" or "potentially" to the above question, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.
NOT APPLICABLE

P.7.2 |ENERGY SUPPLY

P.7.2.1 |	Does the project pose a risk to the availability and reliability of energy supply to other users?	☐ YES ☒ NO

If the answer to question above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.
NOT APPLICABLE
Would the project involve or lead to:

P.7.2.1 |	negative impact on the availability and reliability of energy supply to other users?	☐ YES ☐ POTENTIALLY ☒ NO

If the answer is "yes" or "potentially" to the above question, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.
NOT APPLICABLE

P.8 |WATER

P.8.1 |IMPACT ON NATURAL WATER PATTERNS/FLOWS

P.8.1.1 |	Does the project increase water usage to a level that will not allow for the maintenance of environmental flows?	☐ YES ☒ NO
P.8.1.1 |	Does the project result in the discharge of wastewater that does not meet the required standard for beneficial reuse and could therefore negatively impact the environmental flow?	☐ YES ☒ NO
P.8.1.1 |	Does the project have the potential risk to exceed the rate of recharge for the groundwater source?	☐ YES

		☒ NO
P.8.1.1 |	Does the project involve any processes or activities that could contaminate the groundwater and render it unsuitable for use?	☐ YES ☒ NO
If the answer to any of the questions above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.		
NOT APPLICABLE		
Would the project involve or lead to:		
P.8.1.1 |	affect the natural or pre-existing pattern of watercourses, groundwater and/or the watershed(s) such as high seasonal flow variability, flooding potential, lack of aquatic connectivity or water scarcity?	☐ YES ☐ POTENTIALLY ☒ NO
P.8.1.1 |	Wastewater discharge of quality that does not meet the required standard for beneficial reuse?	☐ YES ☐ POTENTIALLY ☒ NO
P.8.1.1 |	significant extraction, diversion of ground water? For example, construction of dams, reservoirs, river basin developments, groundwater extraction	☐ YES ☐ POTENTIALLY ☒ NO
P.8.1.2 |	Are opinions and recommendations of an Expert Stakeholder(s) not sought and demonstrated as being included in the project design?	☐ YES ☒ NO ☐ NA
If the answer is "yes" or "potentially" to any of the above questions, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.		
NOT APPLICABLE		
P.8.2 |EROSION AND/OR WATER BODY INSTABILITY		
P.8.2.1 |	Does the project have a risk of negatively impacting the catchment and has it been assessed and addressed?	☐ YES ☒ NO
If the answer to question above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.		
NOT APPLICABLE		
Would the project involve or lead to:		
P.8.2.2 | - P.8.2.5 |	negatively impact on the catchment area? *If yes, Erosion prevention measures, including soil and slope protection measures, must be implemented before project commencement. These measures should involve natural terracing, infiltration strips, permanent ground cover, hedge and tree rows, and effective slope length assessment. Regular reassessment of these measures is necessary.*	☐ YES ☐ POTENTIALLY ☒ NO

P.8.2.6 |	Are opinions and recommendations of an Expert Stakeholder(s) not sought and demonstrated as being included in the project design?	☐ YES ☐ NO ☒ NA

If the answer is "yes" or "potentially" to any of the above questions, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

NOT APPLICABLE

P.9 |ENVIRONMENT, ECOLOGY AND LAND USE

P.9.1 |LANDSCAPE MODIFICATION AND SOIL

P.9.1.1 | - P.9.1.3 |	Is there any risk of soil resource degradation or loss of ecosystem services provided by soils in the project? *If yes, the project shall maintain healthy soils by minimising negative impacts on soil health, productivity, structure, and water retention. Steps to minimise soil degradation include crop rotation, composting, using N-fixing plants, and reducing tillage and ecologically harmful substances.*	☐ YES ☒ NO

If the answer to question above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.

NOT APPLICABLE

Would the project involve or lead to:

P.9.1.4 |	production, harvesting, and/or management of living natural resources by small-scale landholders and/or local communities?	☐ YES ☐ POTENTIALLY ☒ NO
P.9.1.4 |	if answer to above question "yes" or "potentially", does project adopt appropriate and culturally sensitive sustainable resource management practices?	☐ YES ☒ NO ☐ NA

If the answer is "yes" or "potentially" to any of the above questions, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

NOT APPLICABLE

P.9.2 |VULNERABILITY TO NATURAL DISASTER

P.9.2.1 |	Does the project have any risks associated with natural or man-made hazards that could result from land use changes due to the project?	☐ YES ☒ NO

If the answer to question above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.

NOT APPLICABLE

Would the project involve or lead to:

P.9.2.2 |	any potential risks that require emergency preparedness and response planning?	☐ YES ☐ POTENTIALLY ☒ NO

P.9.2.2 |	if answer to above question "yes" or "potentially", did the project developer disclose appropriate information about emergency preparedness and response to affected communities?	☐ YES ☒ NO ☐ NA

If the answer is "yes" or "potentially" to any of the above questions, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

NOT APPLICABLE

P.9.3 |BIOSAFETY AND GENETIC RESOURCES

P.9.3.1 |	Does the project involve the transfer, handling, and use of genetically modified organisms/living modified organisms that may result in adverse effects on biological diversity?	☐ YES ☒ NO

If the answer to question above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.

NOT APPLICABLE

Would the project involve or lead to:

P.9.3.1 |	the transfer, handling and use of genetically modified organisms/living modified organisms (GMOs/LMOs) that result from modern biotechnology	☐ YES ☐ POTENTIALLY ☒ NO
P.9.3.1 |	If answer to above question is "yes" has a risk assessment by a competent Expert stakeholder been carried out in accordance with Annex iii of the Cartagena protocol on biosafety to the convention on biological diversity?	☐ YES ☒ NO ☐ NA
P.9.3.2 |	If answer to above question is "yes" has any risks identified in the risk assessment?	☐ YES ☒ NO ☐ NA
P.9.3.3 |	Forestry (for example Afforestation/Reforestation) involving GMO planting? *Note - Forestry projects (for example Afforestation/ Reforestation) involving GMO planting are not eligible for Certification under Gold Standard for the Global Goals.*	☐ YES ☒ NO ☐ NA

If the answer is "yes" or "potentially" to any of the above questions, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

NOT APPLICABLE

P.9.4 |RELEASE OF POLLUTANTS

P.9.4.1 |	Does the project have a risk of releasing pollutants to air, water, and land in routine, non-routine, or accidental circumstances?	☐ YES ☒ NO

If the answer to question above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.

NOT APPLICABLE

Would the project involve or lead to:

P.9.4.1 |	any potential risk of pollutant release that cannot be avoided?	☐ YES

		☐ POTENTIALLY ☒ NO
P.9.4.3 |	If answer to above question is "Yes" or "potentially", has the project identified all potential pollution sources that may degrade the quality of soil, air, surface, and groundwater in the project area?	☐ YES ☒ NO ☐ NA
P.9.4.2 |	If answer to above question is "Yes" or "potentially", do the pollution prevention and control technologies and practices applied during the project life cycle align with national regulations or international best practices?	☐ YES ☒ NO ☐ NA
P.9.4.3 |	If answer to above question is "Yes", is there a monitoring plan to ensure that mitigation measures are implemented, and resources are protected?	☐ YES ☒ NO ☐ NA

If the answer is "yes" or "potentially" to any of the above questions, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

NOT APPLICABLE

P.9.5 |HAZARDOUS AND NON-HAZARDOUS WASTE

P.9.5.1 |	Does the project involve the generation of waste materials (both hazardous and non-hazardous)?	☒ YES ☐ NO
P.9.5.3 |	Does the project involve risk of release of hazardous materials resulting from their production, transportation, handling, storage, or use?	☒ YES ☐ NO
P.9.5.5 |	Does the project involve the use of any chemicals or materials subject to international bans or phase-outs?	☐ YES ☒ NO

If the answer to any of the questions above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.

P.9.5.1 and P.9.5.3- A hazardous waste inventory is maintained as per the provisions of the Hazardous Waste (Management, Handling and Transboundary Movement) Rules, 2008.

Would the project involve or lead to:

P.9.5.1 |	the generation and management of waste materials?	☒ YES ☐ POTENTIALLY ☐ NO
P.9.5.1 |	treatment, destruction, or disposal of waste material?	☒ YES ☐ NO ☐ NA
P.9.5.1 |	If answer to above question is "Yes", does the project involve an environmentally friendly method that includes appropriate control of emissions and residues resulting from the handling and processing of waste material?	☒ YES ☐ NO ☐ NA
P.9.5.3 |	risk of release of hazardous materials resulting from their production, transportation, handling, storage, or use?	☐ YES ☒ NO ☐ NA
P.9.5.3 |	If answer to above question is "yes", does project has measures in place to address health risks?	☐ YES

		☐ NO ☒ NA
P.9.5.4 |	Involve manufacture, trade, and use of chemicals and hazardous materials subject to international bans or phase-outs due to their high toxicity to living organisms, environmental persistence, potential for bioaccumulation, or potential for depletion of the ozone layer	☐ YES ☐ POTENTIALLY ☒ NO

If the answer is "yes" or "potentially" to any of the above questions, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

P 9.5.1 and P 9.5.3- A hazardous waste inventory is maintained as per the provisions of the Hazardous Waste (Management, Handling and Transboundary Movement) Rules, 2008.

The waste is disposed to the waste handlers and the firm complies with all the local laws for monitoring and disposal.

P.9.6 |PESTICIDES & FERTILISERS

P.9.6.1 |	Does the project involve the use of chemical pesticides?	☐ YES ☒ NO
P.9.6.5 |	Does the project involve purchase, store, manufacture, trade or use products that fall in Classes IA (extremely hazardous) and IB (highly hazardous)	☐ YES ☒ NO
P.9.6.6 |	Does the project use fertilisers, and if so, are measures being taken to minimise their use and nutrient losses to the environment?	☐ YES ☒ NO

If the answer to any of the questions above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.

NOT APPLICABLE

Would the project involve or lead to:

P.9.6.1 |	chemical pesticides use for pest management?	☐ YES ☐ POTENTIALLY ☒ NO
P.9.6.4 |	If answer to question above is "yes" or "potentially", does project has documented Chemical Pesticides Policy in place?	☐ YES ☐ NO ☒ NA
P.9.6.5 |	purchase, store, use, manufacture, or trade in Class II (moderately hazardous) pesticides?	☐ YES ☐ POTENTIALLY ☒ NO
P.9.6.5 |	If answer to question above is "yes" or "potentially", does project has appropriate controls on manufacture, procurement, or distribution and/or use of these chemicals?	☐ YES ☐ NO ☒ NA

If the answer is "yes" or "potentially" to any of the above questions, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

NOT APPLICABLE

P.9.7 |HARVESTING OF FORESTS		
P.9.7.1 |	Does the project have a risk of unsustainable forest management, including timber harvesting?	☐ YES ☒ NO
P.9.7.1 |	Does the project pose a risk of depleting biodiversity and ecosystem functionality in areas where improved forest management is undertaken?	☐ YES ☒ NO
P.9.7.1 |	Does the project risk not meeting requirements for environment-friendly, socially beneficial, and economically viable plantations using native species whenever possible?	☐ YES ☒ NO
If the answer to any of the questions above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.		
NOT APPLICABLE		

P.9.8 |FOOD SECURITY		
P.9.8.1 |	Does the project involve the risk of negatively influencing access to and availability of food for people affected?	☐ YES ☒ NO
If the answer to the question above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.		
NOT APPLICABLE		
Would the project involve or lead to:		
P.9.8.1 |	modification of the quantity or nutritional quality of food available such as through crop regime alteration or export or economic incentives?	☐ YES ☐ POTENTIALLY ☒ NO
If the answer is "yes" or "potentially" to the above question, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.		
NOT APPLICABLE		

P.9.9 | ANIMAL WELFARE		
P.9.9.1 |	Does the project involve any risks to animal welfare? Animal welfare shall be ensured by providing access to water and food, appropriate environment, humane treatment, and staff training. Evidence of mistreatment will be treated as an immediate non-conformity.	☐ YES ☒ NO
P.9.9.2 |	Does the project involve any potential risk of excessive or inadequate use of veterinary medicines?	☐ YES ☒ NO
P.9.9.4 |	Does the project involve the risk of administering synthetic growth promoters, including hormones?	☐ YES ☒ NO
If the answer to any of the questions above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.		
NOT APPLICABLE		

Would the project involve or lead to:		
P.9.9.1 |	animal husbandry or harvesting of fish populations or other aquatic species?[36]	☐ YES ☐ NO ☒ NA
P.9.9.1 |	limiting access for animals to basic needs like drinking water, adequate food, daylight, appropriate shelter etc.?	☐ YES ☐ POTENTIALLY ☒ NO
P.9.9.3 |	inadequate measures to isolate sick animals and control the spread of disease, especially zoonotic diseases?	☐ YES ☒ NO ☐ NA
P.9.9.5 |	inadequate low-stress methods, equipment, and facilities that facilitate calm animal movement.	☐ YES ☒ NO ☐ NA
P.9.9.6 |	inadequate measures to ensure that animals are exposed to the least stress possible during transportation and slaughtering?	☐ YES ☐ NO ☒ NA
P.9.9.7 |	inappropriate spacing per animal and stocking rates per land unit?	☐ YES ☐ NO ☒ NA
P.9.9.8 |	inadequate measures to address the specific needs of aquatic animals?	☐ YES ☐ NO ☒ NA
P.9.9.9 | P.9.9.10 |	primary production of living natural resources such as animal husbandry, aquaculture, and fisheries? If the answer is yes, implement industry-standard sustainable management practices in line with to one or more relevant and credible standards and utilise available technologies.	☐ YES ☐ NO ☒ NA
If the answer is "yes" or "potentially" to any of the above question, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.		
NOT APPLICABLE		
P.9.10 |HIGH CONSERVATION VALUE AREAS AND CRITICAL HABITATS		
P.9.10.1 |	Does the project have the risk of negatively impacting HCV areas and/or critical habitats?	☐ YES ☒ NO

[36] 'Involve' means if the project mechanism and/or impact(s) are achieved via changing animal husbandry practices in some way.

P.9.10.2 |	Does the project in the project area or area of downstream impacts have risks to the following: native tree patches, individual native trees, freshwater resources (including rivers, lakes, swamps, temporary water bodies, and wells), habitats of rare, threatened, and endangered species, and biodiversity-enhancing areas?	☒ YES ☐ NO

If the answer to any of the questions above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.

Since this is wind power plant birds may strike into their spinning blade while flying but by applying contrast painting to the rotor blades significantly reduced the collision risk. The appointed personnel of O&M team maintains a Bird strike register.
During the siting activity, it was ensured that there are no water bodies beside WTGs also water pits are not allowed around the WTGs and none of the area of WTGs erection or transmission lines are under sensitive or under areas of conservation importance.

Would the project involve or lead to:

P.9.10.1 |	identified habitats as HCV areas and or Critical habitats?	☐ YES ☐ POTENTIALLY ☒ NO
P.9.10.1 |	If answer to above question is "yes", does the project have any risks that could negatively impact the catchment, project success, and surrounding HCV and ecological assets, as well as any measurable adverse impacts on the criteria or biodiversity values for which the critical habitat was designated, and on the ecological processes supporting that biodiversity?	☐ YES ☐ NO ☒ NA
P.9.10.1 |	If answer to above question is "yes", is a robust, appropriately designed, and long-term Habitats and Biodiversity Action Plan absent which will make the project unable to achieve net gains of those biodiversity values for which the critical habitat was designated?	☐ YES ☒ NO ☐ N/A
P.9.10.2 |	Does the project area or area of downstream impacts have native tree patches, individual native trees, freshwater resources (including rivers, lakes, swamps, temporary water bodies, and wells), habitats of rare, threatened, and endangered species, and biodiversity-enhancing areas?	☐ YES ☒ POTENTIALLY ☐ NO
P.9.10.2 |	If the answer to the above question is "yes", will the project have any adverse effects on these areas?	☐ YES ☒ No ☐ NA
P.9.10.3 |	If the answer to above question is "yes", does the project has opportunities to minimise unwarranted conversion or degradation of the habitat and to enhance the habitat as part of its development?	☐ YES ☒ No ☐ NA
P.9.10.4 |	Is the project applying Land Use & Forest Activity Requirements and managing a minimum 10% of the project area to protect or enhance the biological diversity of native ecosystems following HCV approach as per the given requirements?	☐ YES ☒ No ☐ NA
P.9.10.5 |	Are opinions and recommendations of an Expert Stakeholder(s) not sought and demonstrated as being included in the project design?	☐ YES ☒ NO ☐ NA

If the answer is "yes" or "potentially" to any of the above question, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.		
NOT APPLICABLE		
P.9.11 |ENDANGERED SPECIES		
P.9.11.1 |	Does the project lead to the reduction or negative impact on any recognised Endangered, Vulnerable or Critically Endangered species?	☐ YES ☒ NO
If the answer to question above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.		
NOT APPLICABLE		
Would the project involve or lead to:		
P.9.11.2 |	distortion of habitats of endangered species?	☐ YES ☐ POTENTIALLY ☒ NA
P.9.11.2 |	If answer to the above question is “yes”, does the project plan to protect and enhance them?	☐ YES ☐ POTENTIALLY ☐ NO ☒ N/A
P.9.11.2 |	Are opinions and recommendations of an Expert Stakeholder(s) not sought and demonstrated as being included in the project design?	☐ YES ☐ NO ☒ NA
If the answer is "yes" or "potentially" to any of the above question, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.		
NOT APPLICABLE		
P.9.12 |INVASIVE ALIEN SPECIES		
P.9.12.1 |	Does project introduce any alien species (not currently established in the country or region of the project) into new environments?	☐ YES ☒ NO
If the answer to question above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.		
NOT APPLICABLE		
Would the project involve or lead to:		
P.9.12.1 |	risk of introducing any alien species with a high risk of invasive behaviour regardless of whether such introductions are permitted under the existing regulatory framework?	☐ YES ☐ POTENTIALLY ☒ NO
P.9.12.1 |	risk of potential accidental or unintended introductions including the transportation of substrates and vectors (such as soil, ballast, and plant materials) that may harbour alien species.	☐ YES ☐ POTENTIALLY ☒ NO
P.9.12.2 |	risk of spreading alien species into areas in which they have not already been established?	☐ YES

		☐ POTENTIALLY ☒ NO

If the answer is "yes" or "potentially" to any of the above question, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

NOT APPLICABLE

APPENDIX 2 - CONTACT INFORMATION OF PROJECT DEVELOPER(S)

Organization name	Greenko Sironj Wind Power Pvt Ltd.
Registration number with relevant authority	U40300DL2011PTC274906
Street/P.O. Box	Plot no. 13, Sy.No.64 Part,
Building	Block-D, Madhapur
City	Hyderabad
State/Region	Telangana
Postcode	500081
Country	India
Telephone	+91(40) 4030 1004
E-mail	muraliraju.m@greenkogroup.com
Website	https://greenkogroup.com/
Contact person	Mr. Murali Krishnam Raju M
Title	Vice President
Salutation	Mr.
Last name	Raju M
Middle name	Krishnam
First name	Murali
Department	-
Mobile	+91(40) 4030 1004
Direct tel.	+91(40) 4030 1103
Personal e-mail	muraliraju.m@greenkogroup.com

APPENDIX 3 - LUF ADDITIONAL INFORMATION

This is a wind power project hence the section is Not applicable.

APPENDIX 4 - DESIGN CHANGES

There is no design change from previous PDD hence, the section is Not applicable.

APPENDIX 5 – CALIBRATION DETAILS

The total capacity of the project activity is 200 MW which is 2 MW of 100 WTGs. Project site has one main meter, one check meter along with that one standby meter.

Details	**Main meter**	**Check meter**	**Standby meter**
Make	Secure	Secure	Secure
Meter number	SA0011A	SA0012A	SA0015A
Location	PGCIL,400/230kV control room, Tuticorin	PGCIL,400/230kV control room, Tuticorin	PGCIL,230/33kV Pooling station, Control room, Thoothukudi
Accuracy	0.2S	0.2S	0.2S
Calibration frequency as per PD	Once in 5 years	Once in 5 years	Once in 5 years
Calibration date	10/04/2021	10/04/2021	11/04/2021
Calibration validity	10/04/2026	10/04/2026	10/04/2026
Calibration Agency	Yadav Measurements Private Limited		

Revision History

Version	Date	Remarks
1.5	29 June 2023	Editorial changes to match V2.1 of the Safeguarding Principles Requirements
1.4	21 June 2023	Editorial changes to match V2.0 of the Safeguarding Principles Requirements
1.3	14 April 2023	Integrated the design change memo as annex of the document. Editorial changes
1.2	14 October 2020	Hyperlinked section summary to enable quick access to key sections Improved clarity on Key Project Information Inclusion criteria table added Gender sensitive requirements added Prior consideration (1 yr rule) and Ongoing Financial Need added Safeguard Principles Assessment as annex and a new section to include applicable safeguards for clarity Improved Clarity on SDG contribution/SDG Impact term used throughout Clarity on Stakeholder Consultation information required Provision of an accompanying Guide to help the user understand detailed rules and requirements
1.1	24 August 2017	Updated to include section A.8 on 'gender sensitive' requirements
1.0	10 July 2017	Initial adoption