

WIND POWER PROJECT IN MAHARASHTRA, INDIA – ANDHRA LAKE PHASE - I



Document Prepared By CLP Wind Farms (India) Private Limited

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1 PROJECT DETAILS

1.1 Summary Description of the Project

CLP Wind Farms (India) Private Limited (CLPWF), now onwards referred as the Project Proponent (PP) in this PD, has developed a green-field wind based electricity generation project at Andhra Lake, Pune District, in the State of Maharashtra.

Project Proponent plans to eventually establish 113.6 MW wind farm in three phases. Currently Phase – I of 56.0 MW capacity and Phase-II of 50.4 MW capacity has been commissioned. Phase-III of 7.2 MW is under development. Project activity under this PDD refers to development of 56.0 MW (Andhra Lake Phase - I) and will be referred as the Project in this PD.

The Project would install 70 number of Enercon (India) Limited (EIL) make E-53 Wind Turbine Generators (WTGs) to generate electrical power for export to the distribution licensee. In the baseline scenario, the similar quantum of electricity would have been generated by the operation of grid- connected power plants and by the addition of new generation sources that would have led to emission of Green House Gases (GHGs).

The project was registered at UNFCCC (Ref. No. 6882) on 10-Aug-2012 and the details of the same can be viewed on <http://cdm.unfccc.int/Projects/DB/LRQA%20Ltd1343392693.61/view>

1.2 Sectoral Scope and Project Type

Sectoral Scope : 01 Energy Industries (renewable-'non renewable)
Project Type : Type 1 Renewable Energy Projects
Project Category : ACM0002 version 12.3.0
Tool : Tool for the demonstration and assessment of additionality (Version 06.0.0, EB 65)
 Tool to calculate the emission factor for an electricity system (Version 02.2.1, EB 63)

1.3 Project Proponent

Organization name	CLP Wind Farms (India) Private Limited
Contact person	Mr. Dipjay Sanchania
Title	Head – CDM
Address	15 th Floor, Oberoi Commerz, Off. Western Express Highway, Goregaon (E), Mumbai 400 063 India
Telephone	+ 91 22 6758 8888
Email	carbon@clpindia.in

1.4 Other Entities Involved in the Project

Organization name	Not Applicable
Role in the project	Not Applicable
Contact person	Not Applicable
Title	Not Applicable
Address	Not Applicable
Telephone	Not Applicable
Email	Not Applicable

1.5 Project Start Date

19-Aug-2011, being the date of commissioning of first WEG installed under the project activity.

1.6 Project Crediting Period

Crediting Period: 10 years 0 months (renewable twice)

Start Date of Crediting Period: 19-Aug-2011

End Date of Crediting Period: 18-Aug-2021

The Project Proponent confirms that the Project is also registered under CDM¹ on 10/08/2012 and they will claim emissions reductions from the Project only in one mechanism for a particular period to avoid double counting. Crediting period for the CDM Program is 31 Jul 13 - 30 Jul 20 (Renewable).

1.7 Project Scale and Estimated GHG Emission Reductions or Removals

Project Scale	
Project	Project activity falls under this category as estimated GHG emission reduction are below 300,000 tones of CO ₂ e per year as shown in below table.
Large project	Not applicable.

Year	Estimated GHG emission reductions or removals (tCO ₂ e)
2011-12	84,461
2012-13	84,461
2013-14	84,461
2014-15	84,461

¹ <http://cdm.unfccc.int/Projects/DB/LRQA%20Ltd1343392693.61/view>

Year	Estimated GHG emission reductions or removals (tCO ₂ e)
2015-16	84,461
2016-17	84,461
2017-18	84,461
2018-19	84,461
2019-20	84,461
2020-21	84,461
Total estimated ERs	844,610
Total number of crediting years	10
Average annual ERs	84,461

1.8 Description of the Project Activity

Please refer section A.4.2 of the registered PDD for technical specification and Section B.5 for date of Commissioning. The PDD can be found at this link.

<http://cdm.unfccc.int/Projects/DB/LRQA%20Ltd1343392693.61/view>

1.9 Project Location

Site : Andhra Lake

District : Pune

State : Maharashtra

Host Party : India

The Project activity is located in the Khed and Maval taluk of Pune district in Maharashtra. The nearest airport and railway station is in Pune city. The coordinates of individual WEGs of this site are as below:

Sr. No.	Location No.	Date of WEC commissioning	Latitude			Longitude		
			Deg.	Minutes	Second	Deg.	Minutes	Second
1	141	19-Aug-11	18	56	54.2	73	39	18.0
2	140	19-Aug-11	18	56	57.0	73	39	10.6
3	139	19-Aug-11	18	57	1.4	73	39	2.6
4	138	19-Aug-11	18	57	3.9	73	38	54.6
5	137	19-Aug-11	18	57	8.2	73	38	42.1
6	136	19-Aug-11	18	57	9.6	73	38	33.4

Sr. No.	Location No.	Date of WEC commissioning	Latitude			Longitude		
			Deg.	Minutes	Second	Deg.	Minutes	Second
7	135	19-Aug-11	18	57	16.4	73	38	32.4
8	134	19-Aug-11	18	57	21.9	73	38	28.8
9	133	19-Aug-11	18	57	26.6	73	38	26.3
10	132	19-Aug-11	18	57	31.3	73	38	23.3
11	131	19-Aug-11	18	57	37.0	73	38	21.6
12	130	19-Aug-11	18	57	41.0	73	38	19.2
13	129	19-Aug-11	18	57	46.4	73	38	15.9
14	128	19-Aug-11	18	57	51.6	73	38	14.9
15	127	19-Aug-11	18	57	56.9	73	38	15.9
16	48	19-Aug-11	18	53	46.1	73	35	48.3
17	49	19-Aug-11	18	53	49.5	73	35	45.0
18	50	19-Aug-11	18	53	54.4	73	35	41.9
19	53	19-Aug-11	18	54	10.6	73	35	25.9
20	54	19-Aug-11	18	54	8.3	73	35	39.2
21	55	19-Aug-11	18	54	16.7	73	35	35.2
22	56	19-Aug-11	18	54	20.4	73	35	31.1
23	57	19-Aug-11	18	54	27.4	73	35	26.5
24	58	19-Aug-11	18	54	32.6	73	35	26.5
25	59	19-Aug-11	18	54	41.7	73	35	21.2
26	60	19-Aug-11	18	54	45.9	73	35	17.3
27	62	19-Aug-11	18	54	54.3	73	35	12.2
28	65	19-Aug-11	18	55	9.8	73	35	6.7
29	66	19-Aug-11	18	55	14.6	73	35	5.6
30	67	19-Aug-11	18	55	17.3	73	34	49.7
31	68	19-Aug-11	18	55	24.5	73	34	54.5
32	70	19-Aug-11	18	55	36.0	73	34	26.1
33	71	19-Aug-11	18	55	40.5	73	34	20.6
34	72	19-Aug-11	18	55	43.0	73	34	15.0
35	98	19-Aug-11	18	58	12.0	73	31	54.2
36	99	19-Aug-11	18	58	17.6	73	31	51.3
37	100	19-Aug-11	18	58	21.7	73	31	47.0

Sr. No.	Location No.	Date of WEC commissioning	Latitude			Longitude		
			Deg.	Minutes	Second	Deg.	Minutes	Second
38	101	19-Aug-11	18	58	27.0	73	31	45.0
39	102	19-Aug-11	18	58	31.	73	31	42.3
40	103	19-Aug-11	18	58	36.0	73	31	42.1
41	104	19-Aug-11	18	58	42.1	73	31	42.1
42	105	19-Aug-11	18	58	45.5	73	31	41.9
43	506	19-Aug-11	18	58	55.5	73	31	50.4
44	106	19-Aug-11	18	58	50.3	73	31	43.8
45	73	18-Oct-11	18	55	51.2	73	34	16.1
46	74	18-Oct-11	18	55	57.1	73	34	13.1
47	75	18-Oct-11	18	56	1.0	73	34	7.6
48	77	18-Oct-11	18	56	16.9	73	33	47.9
49	78	18-Oct-11	18	56	19.9	73	33	46.1
50	79	18-Oct-11	18	56	26.7	73	33	45.5
51	80	18-Oct-11	18	56	31.7	73	33	43.7
52	82	18-Oct-11	18	56	45.2	73	33	0.9
53	84	18-Oct-11	18	56	56.5	73	32	57.5
54	85	18-Oct-11	18	56	59.6	73	32	53.6
55	63	31-Oct-11	18	54	59.9	73	35	10.0
56	64	31-Oct-11	18	55	4.9	73	35	8.1
57	69	31-Oct-11	18	55	30.5	73	34	53.9
58	88	31-Oct-11	18	57	41	73	38	19.2
59	51	28-Dec-11	18	53	59.1	73	35	37.7
60	52	28-Dec-11	18	54	4.0	73	35	33.7
61	61	28-Dec-11	18	54	48.9	73	35	15.5
62	76	28-Dec-11	18	57	21.9	73	38	28.8
63	83	28-Dec-11	18	56	51.0	73	33	0.1
64	86	28-Dec-11	18	57	9.6	73	38	33.4
65	87	28-Dec-11	18	57	6.2	73	32	40.6
66	89	28-Dec-11	18	57	14.8	73	32	27.1
67	90	28-Dec-11	18	57	22.7	73	32	26.3
68	91	28-Dec-11	18	57	29.3	73	32	27.5

Sr. No.	Location No.	Date of WEC commissioning	Latitude			Longitude		
			Deg.	Minutes	Second	Deg.	Minutes	Second
69	92	28-Dec-11	18	57	33.9	73	32	26.2
70	93	28-Dec-11	18	57	38.4	73	32	20.1

1.10 Conditions Prior to Project Initiation

This is a Greenfield project. The project activity replaces the carbon intensive grid electricity. Thereby reducing the dependence on fossil fuel based generation units and as there are no associated emissions with this project it contributes to the reduction of greenhouse gases (GHG) emissions. Please refer section A.1 and B.4 of the registered PDD. The PDD can be found at this web link mentioned below:

<http://cdm.unfccc.int/Projects/DB/LRQA%20Ltd1343392693.61/view>

1.11 Compliance with Laws, Statutes and Other Regulatory Frameworks

The project activity is not mandated by any local or national laws. Please refer section B.5 of the UNFCCC registered CDM project with Ref No: 6882

1.12 Ownership and Other Programs

1.12.1 Right of Use

For the ownership details of the project any of the following may be referred to:

- Commissioning certificates – issued by MSEDCL (Maharashtra State Electricity Distribution Company Limited)
- Power purchase agreement – between PP & MSEDCL (Maharashtra State Electricity Distribution Company Limited)

1.12.2 Emissions Trading Programs and Other Binding Limits

India is Non-annex country and there is no compliance with an emission trading program or to meet binding limits on GHG emissions for this project activity.

1.12.3 Other Forms of Environmental Credit

The project activity generates Carbon Credits under Clean Development Mechanism (Ref.No:6882) from 31/07/2013. We hereby confirm that the project activity does not result in creation of another form of environmental credit during the period for which VCUs are claimed.

1.12.4 Participation under Other GHG Programs

This is registered CDM project. The reference no. for the project is 6882 and it was registered on 10/08/2012. Please refer to the registered PDD. The web link for the same is mentioned below:

<http://cdm.unfccc.int/Projects/DB/LRQA%20Ltd1343392693.61/view>

1.12.5 Projects Rejected by Other GHG Programs

This project has not been rejected by any other GHG program.

1.13 Additional Information Relevant to the Project

Eligibility Criteria

This is not a grouped project hence the criteria is not applicable.

Leakage Management

No leakage emissions are considered for this Project activity since no energy generating equipment is transferred from another activity and/or the existing equipment is transferred to another activity. Please refer section B.6.1. of the registered PDD. The PDD can be found at web link mentioned below:

<http://cdm.unfccc.int/Projects/DB/LRQA%20Ltd1343392693.61/view>

Commercially Sensitive Information

There is no such information which is deemed as commercially sensitive.

Further Information

Not Applicable

2 APPLICATION OF METHODOLOGY

2.1 Title and Reference of Methodology

Provide the title, reference and version number of the methodology or methodologies applied to the project. Include also the title and version number of any tools applied by the project.

2.2 Applicability of Methodology

Demonstrate and justify how the project activity(s) meets each of the applicability conditions of the methodology(s), and tools (where applicable) applied by the project. Address each applicability condition separately.

2.3 Project Boundary

Define the project boundary and identify the relevant GHG sources, sinks and reservoirs for the project and baseline scenarios (including leakage if applicable).

Source		Gas	Included?	Justification/Explanation
Base line	Source 1	CO ₂		
		CH ₄		

Source		Gas	Included?	Justification/Explanation
		N ₂ O		
		Other		
	Source 2	CO ₂		
		CH ₄		
		N ₂ O		
		Other		
	Project	Source 1	CO ₂	
			CH ₄	
			N ₂ O	
			Other	
		Source 2	CO ₂	
			CH ₄	
			N ₂ O	
			Other	

In addition to the table, provide a diagram or map of the project boundary, showing clearly the physical locations of the various installations or management activities taking place as part of the project activity based on the description provided in Section 1.8 (Description of the Project Activity) above.

For non-AFOLU projects, include in the diagram the equipment, systems and flows of mass and energy. Include the GHG emission sources identified in the project boundary.

For AFOLU projects, include in the diagram or map the locations of where the various measures are taking place, any reference areas and leakage belts.

2.4 Baseline Scenario

Identify and justify the baseline scenario, in accordance with the procedure set out in the applied methodology and any relevant tools. Where the procedure in the applied methodology involves several steps, describe how each step is applied and clearly document the outcome of each step.

Explain and justify key assumptions, rationale and methodological choices. Provide all relevant references.

2.5 Additionality

Demonstrate and assess the additionality of the project, in accordance with the applied methodology and any relevant tools, taking into account of the following:

- *Where a project method is applied to demonstrate additionality and the procedure in the applied methodology or tool involves several steps, describe how each step is applied and clearly document the outcome of each step. Indicate clearly the method selected to demonstrate additionality (eg, investment analysis or barrier analysis in the case of the CDM Tool for the demonstration and assessment of additionality). Where barrier analysis, or equivalent, is used to demonstrate additionality, only include the most relevant barriers. Justify the credibility of the barriers with key facts and/or assumptions and the rationale. Provide all relevant references.*
- *Where a performance method is applied to demonstrate additionality, demonstrate that performance can be achieved to a level at least equivalent to the performance benchmark metric.*
- *Where the methodology applies an activity method for the demonstration of additionality, use this section to demonstrate regulatory surplus (only) and include a statement that notes that conformance with the positive list is demonstrated in the Applicability of Methodology section above.*

Provide sufficient information (including all relevant data and parameters, with sources) so that a reader can reproduce the additionality analysis and obtain the same results.

2.6 Methodology Deviations

Describe and justify any methodology deviations. Include evidence to demonstrate the following:

- *The deviation will not negatively impact the conservativeness of the quantification of GHG emission reductions or removals.*
- *The deviation relates only to the criteria and procedures for monitoring or measurement, and does not relate to any other part of the methodology.*

3 QUANTIFICATION OF GHG EMISSION REDUCTIONS AND REMOVALS

3.1 Baseline Emissions

Describe the procedure for quantification of baseline emissions and/or removals in accordance with the applied methodology. Include all relevant equations, and explain and justify all relevant methodological choices (eg, with respect to selection of emission factors and default values).

3.2 Project Emissions

Describe the procedure for quantification of project emissions and/or removals in accordance with the applied methodology. Include all relevant equations, and explain and justify all relevant methodological choices (eg, with respect to selection of emission factors and default values).

3.3 Leakage

Describe the procedure for quantification of leakage emissions in accordance with the applied methodology. Include all relevant equations, and explain and justify all relevant methodological choices (eg, with respect to selection of emission factors and default values).

3.4 Net GHG Emission Reductions and Removals

Describe the procedure for quantification of net GHG emission reductions and removals. Include all relevant equations. For AFOLU projects, include equations for the quantification of net change in carbon stocks.

Provide the ex-ante calculation (estimate) of baseline emissions/removals, project emissions/removals, leakage emissions and net GHG emission reductions and removals in the table below.

For data and parameters monitored, use estimates. Document how each equation is applied, in a manner that enables the reader to reproduce the calculation. Provide example calculations for all key equations, to allow the reader to reproduce the calculation of estimated net GHG emission reductions or removals.

Year	Estimated baseline emissions or removals (tCO ₂ e)	Estimated project emissions or removals (tCO ₂ e)	Estimated leakage emissions (tCO ₂ e)	Estimated net GHG emission reductions or removals (tCO ₂ e)
Year A				
Year B				
Year C				
Year...				
Total				

4 MONITORING

4.1 Data and Parameters Available at Validation

Complete the table below for all data and parameters that are determined or available at validation, and remain fixed throughout the project crediting period (copy the table as necessary for each data/parameter). Data and parameters monitored during the operation of the project are included in Section 4.2 (Data and Parameters Monitored) below.

Data / Parameter	
Data unit	Indicate the unit of measure
Description	Provide a brief description of the data/parameter

Source of data	Indicate the source(s) of data
Value applied:	Provide the value applied
Justification of choice of data or description of measurement methods and procedures applied	Justify the choice of data source, providing references where applicable. Where values are based on measurement, include a description of the measurement methods and procedures applied (eg, what standards or protocols have been followed), indicate the responsible person/entity that undertook the measurement, the date of the measurement and the measurement results. More detailed information may be provided in an appendix.
Purpose of Data	Indicate one of the following: - Determination of baseline scenario (AFOLU projects only) - Calculation of baseline emissions - Calculation of project emissions - Calculation of leakage
Comments	Provide any additional comments

4.2 Data and Parameters Monitored

Complete the table below for all data and parameters that will be monitored during the project crediting period (copy the table as necessary for each data/parameter). Data and parameters determined or available at validation are included in Section 4.1 (Data and Parameters Available at Validation) above.

Data / Parameter	
Data unit	Indicate the unit of measure
Description	Provide a brief description of the data/parameter
Source of data	Indicate the source(s) of data
Description of measurement methods and procedures to be applied	Specify the measurement methods and procedures, any standards or protocols to be followed, and the person/entity responsible for the measurement. Include any relevant information regarding the accuracy of the measurements (eg, accuracy associated with meter equipment or laboratory tests).
Frequency of monitoring/recording	Specify measurement and recording frequency
Value applied:	Provide an estimated value for the data/parameter
Monitoring equipment	Identify equipment used to monitor the data/parameter including type, accuracy class, and serial number of equipment, as appropriate.
QA/QC procedures to be applied	Describe the quality assurance and quality control (QA/QC) procedures to be applied, including the calibration procedures where applicable.

Purpose of data	<i>Indicate one of the following:</i> • Calculation of baseline emissions • Calculation of project emissions • Calculation of leakage
Calculation method	<i>Where relevant, provide the calculation method, including any equations, used to establish the data/parameter.</i>
Comments	<i>Provide any additional comments</i>

4.3 Monitoring Plan

Monitoring plan will remain same as CDM registered PDD Section B.7. Only change is in Calibration Frequency of Energy Meters (Main & Check Meter), which is 5 years.

Calibration Frequency – As per VCS Standard 3.6.15

“Where measurement and monitoring equipment is used, the project proponent shall ensure the equipment is calibrated according to the equipment's specifications and/or relevant national or international standards.”

Hence, PP has opted for frequency of energy meter to be at least once in 5 years as per following National Regulation.

Indian Regulation - Central Electricity Authority (Installation and Operation of Meters) Regulations, 2006

Ref - http://www.aegcl.co.in/Metering_Regulations_Of_CEA_17_03_2006.pdf

5 ENVIRONMENTAL IMPACT

Summarize any environmental impact assessments carried out with respect to the project, where applicable.

6 STAKEHOLDER COMMENTS

Summarize relevant outcomes from any stakeholder consultations and mechanisms for on-going communication.

APPENDIX X: <TITLE OF APPENDIX>

Use appendices for supporting information. Delete this appendix (title and instructions) where no appendix is required.