



GRID CONNECTED WIND ENERGY PROJECT IN TAMIL NADU

Document Prepared by Apraava Wind Energy (Theni – Project II) Private Limited¹

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Prepared by	Apraava Wind Energy (Theni – Project II) Private Limited 7 th Floor, FULCRUM, Sahar Road, Andheri (East), Mumbai – 400 099, India T: +91-22-6758 8888, F: +91-22-6758 8811 Email: carbongroup@apraava.com , www.apraava.com

¹ The name of the company has been changed from CLP Wind Farms (Theni – Project II) Private Limited to Apraava Wind Energy (Theni – Project II) Private Limited with effect from 10/12/2021.

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PROJECT DETAILS

1.1 Summary Description of the Implementation Status of the Project

The project has been implemented by Apraava Wind Energy (Theni – Project II) Private Limited (AWEPL)² formerly known as CLP Wind Farms (Theni – Project II) Private Limited (“CLP”) in the state of Tamil Nadu. The Wind Energy Generators (“WEG”) have been supplied by Vestas Wind Technology India Private Limited (“Vestas”). As per the Supply and Services agreement signed between CLP and Vestas, later is responsible for technology and equipment supply, as well as the operation and maintenance of the WEGs. The Project uses wind energy to generate electricity using 1.65 MW Wind Turbine Generators (WEGs) in the Tamil Nadu state in India. Total 30 numbers 1.65 MW of Vestas make WEGs are installed as part of this Project by CLP. The total capacity of project activity is 49.5 MW. The power generated from this project activity is supplied to the state electricity grid which is a part of Southern regional grid of India *and now same is now part of integrated Indian grid*. The Project is fully commissioned and is supplying electricity to Integrated Indian Grid system.

The Project activity helps to reduce the demand- supply gap in the country and also helps in contributing to the sustainable development by using wind energy as the source of power generation and reduction of GHG emissions.

The first machine under this project activity was commissioned on 25-Jun-2010 and last machine was commissioned on 02-Jul-2010.

During this monitoring period the project activity has exported 75,456.27 MWh of net energy to the Southern Grid of India (same is now part of integrated Indian grid). The total emission reductions achieved during the monitoring period from 01-Jan-2024 to 31-Dec-2024 (both days inclusive) is 70,521 tCO₂e.

1.2 Audit History

Audit type	Period	Program	Validation/verification body name	Number of years
Validation and Verification	25-Jun-2010 – 10-May-2012	VCS	URS Verification Private Limited	1 year, 10 months
Verification	11-May-2012 – 03-Oct-2012	VCS	URS Verification Private Limited	4 months,
Verification	04-Oct-2012 – 09-Jun-2016	VCS	Bureau Veritas Certification	3 years, 8 months

² The name of the company has been changed from CLP Wind Farms (Theni – Project II) Private Limited to Apraava Wind Energy (Theni – Project II) Private Limited with effect from 10/12/2021.

Verification	10-Jun-2016 – 09-Oct-2017	VCS	LGAI Technological Center	1 year, 4 months
Verification	10-Oct-2017 – 09-Sep-2018	VCS	Earthood Services Private Limited	11 months
Verification	10-Sep-2018 – 24-Jun-2020	VCS	Earthood Services Private Limited	1 year, 9 months
Validation and Verification	25-Jun-2020 – 30-Sep-2021	VCS	LGAI Technological Center	1 year, 3 months
Verification	01-Oct-2021 – 31-Dec-2022	VCS	Earthood Services Private Limited	1 year, 3 months
Verification	01-Jan-2023 – 31-Dec-2023	VCS	EcoLance Private Limited	1 year
Verification	01-Jan-2024 – 31-Dec-2024	VCS	EcoLance Private Limited	1 year

1.3 Sectoral Scope and Project Type

Sectoral scope ³	01-Energy Industries (renewable/non-renewable sources)
Project activity type	Type I – Renewable Energy Projects

Sectoral scope	Not applicable
AFOLU project category ⁴	Not applicable
Project activity type	Not applicable

1.4 Project Proponent

Organization name	Apraava Wind Energy (Theni – Project II) Private Limited
Contact person	Jogendra Behera
Title	Head – Non-Utility Markets (Renewables)
Address	7th Floor, Fulcrum, Sahar Road, Andheri East, Mumbai - 400099
Telephone	+91- 22-67588888
Email	carbongroup@apraava.com

³Projects, activities, or methodologies may be developed under any of the 16 VCS sectoral scopes: <https://verra.org/programs/verified-carbon-standard/vcs-program-details/#sectoral-scopes>

⁴See Appendix 1 of the VCS Standard

1.5 Other Entities Involved in the Project

At present, Apraava Wind Energy (Theni – Project II) Private Limited is the sole entity involved in the project.

Organization name	NA
Role in the project	NA
Contact person	NA
Title	NA
Address	NA
Telephone	NA
Email	NA

1.6 Project Start Date

Project start date	25-Jun-2010
Justification	As per the Section 3.8 of the VCS Standard v.4.7, “The project start date of a non-AFOLU project is the date on which the project began generating GHG emission reductions or removals”. The project is a non-AFOLU project and the earliest date of interconnection with the grid is 25-Jun-2010. Hence, the start date of the project is 25-Jun-2010.

1.7 Project Crediting Period

Crediting period	☐ Seven years, twice renewable ☐ Ten years, fixed ☒ Other (state the selected crediting period and justify how it conforms with the VCS Program requirements) The project was registered under VCS 2007.1 which allowed crediting period of a maximum of 10 years which may be renewed at most two times. As per VCS standard 4, the second crediting period was renewed for duration of 10 years from 25-Jun-2020 to 24-Jun-2030.
Start and end date of first or fixed crediting	25-Jun-2020 to 24-Jun-2030

period

1.8 Project Location

Villages :G.Usulampatti, Mottanoothu, Kothapatti, ShanmugaSundara Puram &Marikundu

District :Theni

State :Tamil Nadu

Host Party:India

The Project is spread across G.Usulampatti, Mottanoothu, Kothapatti, ShanmugaSundara Puram & Marikundu of Theni district of Tamil Nadu state in India. The nearest airport and railway station are in Madurai city which is located at a distance of approximately 75 km from the project activity site. The coordinates of individual WEGs of this site are as below:

Sr. No.	Loc No.	Village	Taluk	Distri ct	HTSC No.	DOC	Longitude (E)	Latitude (N)
1	35	G.Uslampatti	Andipatti	Theni	WEG T 117	02-Jul-2010	77°33'53.78"	9°57'02.06"
2	1131	Mottanuthu	Andipatti	Theni	WEG T 100	25-Jun-2010	77°34'20.08"	9°56'30.83"
3	526	Mottanuthu	Andipatti	Theni	WEG T 95	25-Jun-2010	77°35'02.04"	9°57'07.75"
4	63	Koththapatti	Andipatti	Theni	WEG T 97	25-Jun-2010	77°35'26.08"	9°56'46.16"
5	1050	Mottanuthu	Andipatti	Theni	WEG T 103	25-Jun-2010	77°34'14.52"	9°57'20.06"
6	1422	Shanmugasu ndarapuram	Andipatti	Theni	WEG T 106	25-Jun-2010	77°33'04.40"	9°59'00.59"
7	1202	Mottanuthu	Andipatti	Theni	WEG T 91	25-Jun-2010	77°34'05.23"	9°55'46.90"
8	763	Mottanuthu	Andipatti	Theni	WEG T 120	02-Jul-2010	77°33'40.54"	9°58'45.28"
9	1064	Mottanuthu	Andipatti	Theni	WEG T 102	25-Jun-2010	77°34'34.83"	9°56'58.04"
10	177	Marikundu	Andipatti	Theni	WEG T 108	25-Jun-2010	77°33'20.37"	9°57'39.66"
11	26	Mottanuthu	Andipatti	Theni	WEG T 122	02-Jul-2010	77°35'19.41"	9°58'53.99"
12	781	Mottanuthu	Andipatti	Theni	WEG T 104	25-Jun-2010	77°34'06.37"	9°58'33.47"
13	64	G.Uslampatti	Andipatti	Theni	WEG T 118	02-Jul-2010	77°33'41.62"	9°56'30.64"
14	185	Marikundu	Andipatti	Theni	WEG T 119	02-Jul-2010	77°33'00.32"	9°57'56.24"
15	645	Mottanuthu	Andipatti	Theni	WEG T 101	25-Jun-2010	77°34'59.71"	9°58'14.94"
16	1087	Mottanuthu	Andipatti	Theni	WEG T 116	02-Jul-2010	77°34'11.23"	9°56'45.05"
17	1143	Mottanuthu	Andipatti	Theni	WEG T 99	25-Jun-2010	77°34'28.19"	9°56'19.93"

Sr. No.	Loc No.	Village	Taluk	Distri ct	HTSC No.	DOC	Longitude (E)	Latitude (N)
18	488	Mottanuthu	Andipatti	Theni	WEG T 92	25-Jun-2010	77°34'40.75"	9°56'43.03"
19	473	Mottanuthu	Andipatti	Theni	WEG T 93	25-Jun-2010	77°34'49.98"	9°56'32.52"
20	293	Mottanuthu	Andipatti	Theni	WEG T 114	02-Jul-2010	77°35'06.63"	9°56'50.57"
21	274	Mottanuthu	Andipatti	Theni	WEG T 115	02-Jul-2010	77°35'24.86"	9°57'01.23"
22	542	Mottanuthu	Andipatti	Theni	WEG T 98	25-Jun-2010	77°34'53.27"	9°57'24.12"
23	443	Mottanuthu	Andipatti	Theni	WEG T 94	25-Jun-2010	77°34'59.07"	9°56'20.61"
24	694	Mottanuthu	Andipatti	Theni	WEG T 121	02-Jul-2010	77°34'53.77"	9°58'36.03"
25	1194	Mottanuthu	Andipatti	Theni	WEG T 113	02-Jul-2010	77°34'03.96"	9°56'04.90"
26	197	Mottanuthu	Andipatti	Theni	WEG T 96	25-Jun-2010	77°35'29.19"	9°57'27.12"
27	292	Marikundu	Andipatti	Theni	WEG T 109	25-Jun-2010	77°32'53.88"	9°57'21.68"
28	1165	Mottanuthu	Andipatti	Theni	WEG T 90	25-Jun-2010	77°34'23.87"	9°55'55.31"
29	1149	Shanmugasu ndarapuram	Andipatti	Theni	WEG T 105	25-Jun-2010	77°33'35.52"	9°59'27.51"
30	195	Marikundu	Andipatti	Theni	WEG T 107	25-Jun-2010	77°32'41.36"	9°57'57.56"

1.9 Title and Reference of Methodology

Type (methodology, tool or module).	Reference ID, if applicable	Title	Version
Methodology	ACM0002	Grid-connected electricity generation from renewable sources	20.0
Tool	Tool 07	Tool to calculate the emission factor for an electricity system	7.0
Tool	Tool 01	Tool for the demonstration and assessment of additionality	7.0

1.10 Double Counting and Participation under Other GHG Programs

1.10.1 No Double Issuance

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

☐ Yes ☒ No

1.10.2 Registration in Other GHG Programs

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

☒ Yes ☐ No

All the 15 WTGs of this project activity are part of registered CDM Project activity which has total 30 WTGs (49.5 MW) as follows:

Project Title: Grid Connected Wind Power Project in Tamil Nadu

UNFCCC Registration Number: 7415

(<https://cdm.unfccc.int/Projects/DB/RWTUV1348481875.12/view?cp=1>)

Crediting period: 04-Oct-2012 - 03-Oct-2019 (Renewable)

Renewal Status: Renewal of crediting period of the CDM has been successfully registered

Duration of 2nd crediting period: 04-Oct-2019 - 03-Oct-2026

Now the project has been transferred from CDM to VERRA, hence no double counting.

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

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

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

☐ Yes ☒ No

1.11.2 No Double Claiming with Other Forms of Environmental Credit

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

☐ Yes ☒ No

1.11.3 Supply Chain (Scope 3) Emissions

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

☐ Yes

☒ No

The Project Activity is a wind power project and does not involve any supply chain in the project such as manufacturers, wholesalers, distributors and retailers. So, no indirect upstream and downstream GHG emissions are involved in the project activity. Thus, the Scope 3 emissions are not applicable in this project activity.

1.12 Sustainable Development Contributions

The main purpose of this project activity is to generate clean electricity through renewable wind energy source. The project is a wind project which is located at Theni (Theni – Project II) district of Tamil Nadu state in India. The capacity of the project is 49.5 MW. The Project activity is a new facility (Greenfield) and the electricity generated by the project is exported to the Indian electricity grid. The project will therefore displace an equivalent amount of electricity which would have otherwise been generated by fossil fuel dominant electricity grid. The project activity is expected to supply 120.65 GWh/year of energy to the integrated Indian Grid, which is mainly dominated by thermal/fossil fuel-based power plant. This is expected to result in emission reductions of 112,763 tCO_{2e} per year of operation.

The project activity has resulted in various contributions towards the SDGs has been given below:

SDG 7.2.1: Renewable energy share in the total final energy consumption: The Project activity is a new facility (Greenfield) and the electricity generated by the project is exported to the Indian electricity grid. The project therefore displaces an equivalent amount of electricity which would have otherwise been generated by fossil fuel dominant electricity grid. During the current monitoring period 75,456.27 MWh electricity has supplied to Indian grid.

SDG 8 Quality of Employment: The implementation of the project activity has led to increase in the Quality of Employment and skill upliftment. During the current monitoring period, One training has been organized for staff on the technology, plant operation, emergency and safety procedure.

SDG 13 Climate Action: The main purpose of this project activity is to generate a clean electricity through renewable wind energy sources. The project is a wind project which is located at Theni district in the state of Tamil Nadu in India. The capacity of 49.5 MW has been installed at Indian state of Tamil Nadu. The project supplies clean electricity from the wind power plants to the Indian Grid, hence displacing the electricity generated from grid connected fossil fuel power plants and thereby avoiding the equivalent Carbon dioxide which is a greenhouse gas. By supplying 75,456.27 MWh clean electricity to Indian grid, the project avoided release of 70,521 tCO_{2e} into the atmosphere during the current monitoring period.

Table 1: Sustainable Development Contributions

Row number	SDG target	SDG indicator	Net impact on SDG indicator	Current project contributions	Contributions over project lifetime
1	7.2	7.2.1: Renewable energy share in the total final energy consumption	Implemented activities to increase	About 75,456.27 MWh renewable electricity has been supplied to Central Grid to Indian Electricity grid during the reported period that helps to increase the renewable energy share in the energy mix.	A total of 1,372,012.21 MWh renewable electricity will be supplied to the Indian grid by the project activity since commissioning.
2	8	Quality of Employment	Implemented activities to increase	1 Training has been provided during current verification period, the training was organized for staff on the work related safety training, Site safety induction training.	Overall, 1 Training per year has been provided, the training was organized for staff on the work related safety training, site safety induction training.
3	13	Tonnes of greenhouse gas emissions avoided or removed	Implemented activities to increase	By generating 75,456.27 MWh renewable electricity the project has avoided emission of 70,521 tCO2e in the atmosphere.	Since commissioning the project has avoided emission of 1,244,785 tCO2e in the atmosphere.

1.13 Commercially Sensitive Information

No commercially sensitive information has been excluded from the public version of the monitoring report.

2 SAFEGUARDS AND STAKEHOLDER ENGAGEMENT

2.1 Stakeholder Engagement and Consultation

2.1.1 Stakeholder Identification

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

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

2.1.2 Stakeholder Consultation and Ongoing Communication

Ongoing consultation	Stakeholders' consultation is a continuous process and hence a feedback register is kept at the project site office where any stakeholder can come and share his/her feedback. The feedback irrespective of the type is taken care by PP with utmost priority.
Date(s) of stakeholder consultation	18-Feb-2010
Communication of monitored results	Monitored outcomes are conveyed to the stakeholders in two ways: 1. Through VERRA Website: - PP submits third-party (i.e., VVB) verified monitoring results to VERRA, and once approved, the project documentation is made publicly

	available on the VERRA webpage for each monitoring period. 2.Through PP regional office: - A copy of all the project related documents and monitoring data (e.g., grievance register) is available at regional offices of the PP, which is accessible to all the stakeholders associated with the project activity.
Consultation records	The Local Stakeholder Consultation(LSC) records were submitted to VVB at the time of validation and grievance register records for the current monitoring period will be submitted to VVB.
Stakeholder input	Stakeholder input/feedback received during LSC and the LSC report for the same had been submitted to the VVB during validation. Furthermore, the stakeholder feedback/grievance received during the current MP, through ongoing consultation mechanism, has been taken care as per the standard procedure adopted by PP, provided in section 2.1.4 of the VCS-MR. There were no major comments from the stakeholders which could impact on the design of the project.

2.1.3 Free, Prior, and Informed Consent

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

2.1.4 Grievance Redress Procedure

Grievances received	Resolution and outcome
No grievances were received	NA

during the current monitoring period

The grievance mechanism process could be illustrated as below:

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

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

2.1.5 Public Comments

No public comment was received during current monitoring period.

Summary of comments received	Actions taken
No comments from stakeholder during current monitoring period and registration of the VCS PD.	No action is required

2.2 Risks to Stakeholders and the Environment

2.2.1 Management Experience

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

2.2.2 Risk assessment

	Risk identified	Mitigation or preventative measure(s) taken
Natural and human-induced	No risk identified	Project activity involves the

risks to stakeholders' wellbeing		installation of WTG which are consider as nature friendly and placed far away from human interference, hence no risk to human and nature.
Risks to stakeholder participation	No risk identified	Project activity only has benefits for the stakeholders as it provided clean energy with zero risk to human and nature.
Working conditions	Safety of employees at project site	PP has a health and safety policy, and procedure manual in place to ensure favorable working condition.
Safety of women and girls	Sexual harassment at workplace	PP has Health, Safety, Security and Environment (HSSE) Policy and Prevention of Sexual Harassment at Work policies are stated as per the safety of both women and girls (Apraava Energy HSSE Policy, https://www.apraava.com/getmedia/cd8c962d-c86b-42db-8976-15c1d494b54d/Apraava-Energy-HSSE-Policy.pdf PreventionofSexualHarassmentat Workplace https://www.apraava.com/getmedia/b485f4e1-aaf3-49ae-9864-ea38aefbb18e/Handbook-on-Prevention-of-Sexual-Harassment-at-Workplace-Oct-2023.pdf)
Safety of minority and marginalized groups, including children	No risk identified	PP has followed all the regulations and safety protocols provided to the minority and marginalized groups. (Ref Apraava Energy Annual Integrated Report FY 2022-23)
Pollutants (air, noise, discharges to water, generation of waste, and release of hazardous	No risk identified	The project activity involves installation of wind power project, which do not emit any kind of air, water, soil, and hazardous

materials and chemical pesticides and fertilizers)		material. The waste/used oil from the turbines and transformer oil is disposed as per applicable laws. No waste water generation is envisaged from operation of wind farm. There will be only a marginal increase in noise levels due to operation of wind farm and there will be no significant impact on the noise levels due to the Project.
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2.3 Respect for Human Rights and Equity

2.3.1 Labor and Work

	Risks identified ⁵	Mitigation or preventative measure(s) taken
Discrimination	Discrimination on the basis of individual's race, gender, age, disability, ethnicity or cultural affiliation, sexual orientation, belief, educational background, or any other basis.	PP is committed to providing an environment free from sexual harassment. PP follows company policy on 'Prevention of Sexual Harassment at the Workplace Policy' which protects from sexual harassment by vendors, contractors, and third parties. (Ref Human Rights Policy, https://www.apraava.com/getmedia/c5d64657-fa1d-4fad-a803-a8ca9727c2fa/Human-Rights-Policy.pdf) Prevention of Sexual Harassment at Workplace

⁵The identified risks and commensurate mitigation or preventative measure(s) for forced labor, child labor, and human trafficking, must be inclusive of staff and contracted workers employed by third parties.

		https://www.apraava.com/getmedia/b485f4e1-aaf3-49ae-9864-ea38aefbb18e/Handbook-on-Prevention-of-Sexual-Harassment-at-Workplace-Oct-2023.pdf
Sexual harassment	Unwelcome acts or behavior (whether directly or by implication)	PP is committed to providing an environment free from sexual harassment. PP follows company policy on 'Prevention of Sexual Harassment at the Workplace Policy' which protects from sexual harassment by vendors, contractors, and third parties.
Gender equity in labor and work	Biasness in hiring, promotions or terminations	The PP is Independent Power Producer (IPP) and has been in the renewable energy business for more than 20 years. The PP has policies in place to ensure fair opportunity and equal pay for work done to both men and women.
Forced labor	No risk identified	PP complies with the core labour standards for the ADB financed portion of the Project by engaging those contractors and other providers of goods and services who do not employ forced labour
Child labor	No risk identified	PP complies with the core labour standards for the ADB financed portion of the Project by engaging those contractors and other providers of goods and services who do not employ child labour
Human trafficking	No risk identified	The PP works with ethical suppliers as per code of conduct policy and no such scenario is envisaged for the project activity.

2.3.2 Human Rights

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

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

2.3.4 Property Right

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

2.3.5 Benefit Sharing

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

2.4 Ecosystem Health

	Risk identified	Mitigation or preventative measure(s) taken during the monitoring period
Impacts on biodiversity and ecosystems	No risk identified	This project activity does not involve any activity which may negatively impact biodiversity and ecosystem. The locations identified for the WTG

		do not comprise of any trees or shrubs in the immediate vicinity. Provision of adequate spaces between each turbine for movement of birds which reduces the potential for accidental collision has been provided as per the project site layout plan.
Soil degradation and soil erosion	Dispersion of soil	Temporary paved areas are constructed to be used while refueling the machineries, in case of any accidental spill the soil will be cut and stored securely for disposal with hazardous waste.
Water consumption and stress	No risk identified	Since the project activity is wind power plant, there is no water consumption and stress is likely to be caused.

2.4.1 Rare, Threatened, and Endangered species

Species or habitat	Since the project activity is greenfield wind power project, no ecosystem impact were identified during validation
Areas needed for habitat connectivity	Not Applicable

	Risks identified	Mitigation or preventative measure(s) taken
Habitats for rare, threatened, and endangered species	Since the project activity is greenfield wind power project, no ecosystem impact were identified during validation	Not Applicable
Areas for habitat connectivity	Since the project activity is greenfield wind power project, no ecosystem impact were identified during validation	Not Applicable

2.4.2 Introduction of species

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

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

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

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

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

2.4.3 Ecosystem conversion

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

	Risks identified	Mitigation or preventative measure(s) taken
Ecosystem conversion	NA	NA

3 IMPLEMENTATION STATUS

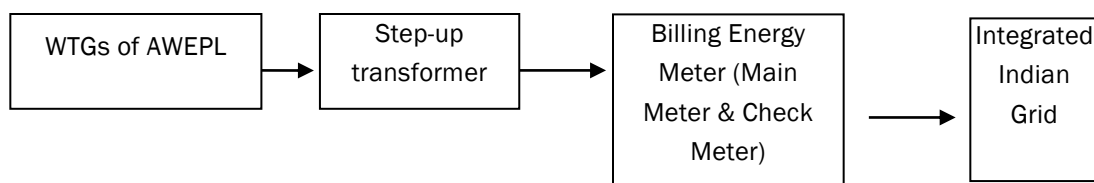
3.1 Implementation Status of the Project Activity

All the WTGs of the Project are commissioned and the Project is fully implemented. The commissioning dates of the individual WTGs have been provided in section 1.8.

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

There are few event of minor breakdown, repair and maintenance for which there was no energy generation by the WTGs, for that period PP has applied the error factor as prescribed by the technical specification of the WTGs. Regular O&M activities were conducted but barring them the project activity has been exporting electricity continuously since commissioning. There were neither major breakdowns nor other events for the project activity during the monitoring period that may impact the GHG emission reductions for the project activity.

Monitoring equipment line diagram at project Site is detailed as below: -



No events or situations happened during the reported monitoring period which can alter the applicability of the applied methodology.

3.2 Deviations

3.2.1 Methodology Deviations

No methodology deviation is applied during the monitoring period.

3.2.2 Project Description Deviations

PP name has been changed from CLP Wind Farms (Theni – Project II) Private Limited to Apraava Wind Energy (Theni – Project II) Private Limited as mentioned in section 1.1.

3.3 Grouped Projects

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

3.4 Baseline Reassessment

Did the project undergo baseline reassessment during the monitoring period?

☐ Yes

☒ No

4 DATA AND PARAMETERS

4.1 Data and Parameters Available at Validation

Data / Parameter	$EF_{grid,OM,y}$
Data unit	tCO ₂ e/MWh
Description	Operating Margin emission factor for Integrated Indian grid
Source of data	Referred from CO ₂ Baseline Database for the Indian Power Sector prepared by Central Electricity Authority Version 16.0.

Value applied:	0.9568
Justification of choice of data or description of measurement methods and procedures applied	Calculated it as CEA sourced data 3 years vintage data (2017-18, 2018-19 and 2019-20) and option of ex ante calculation based on Simple Operating Margin Method. Computed once during PDD finalization.
Purpose of Data	To calculate the baseline emission calculation
Comments	Operating margin emission factor is fixed ex-ante throughout the crediting period

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

Data / Parameter	$EF_{grid,CM,y}$
Data unit	tCO ₂ e/MWh
Description	Combined Margin (CM) Emission Factor for Integrated Indian grid
Source of data	Estimated figure based on 75% of OM and 25% of BM values

Value applied:	0.9346 tCO ₂ e/MWh
Justification of choice of data or description of measurement methods and procedures applied	CEA has calculated it as per ACM0002 with 3 years vintage data and option of ex ante calculation based on 75% of OM and 25% of BM values approach. Computed once during PDD finalization.
Purpose of Data	To calculate the baseline emission calculation
Comments	This value is determined and fixed ex-ante.

4.2 Data and Parameters Monitored

Data / Parameter	EG _{PJ,y}
Data unit	MWh (Mega-watt hour)
Description	Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the project activity in year y
Source of data	The electricity supplied to the grid would be taken from the Joint Meter Reading Report carried out at the TNEB meter located near each WEG.
Description of measurement methods and procedures to be applied	The net electricity supplied to the grid is measured by the main meters (export and import values) installed by TNEB at the metering point near each WEG. The Total Net Electricity supplied to TNEB grid by the project activity is the summation of Net Electricity supplied by individual 30 WEGs of the project activity
Frequency of monitoring/recording	The meter readings at the Metering Point are undertaken every month jointly by the representatives of the State Grid/ TNEB and Vestas representative for the previous month. The meter readings are jointly certified by representatives of the State Grid/ TNEB and Vestas. The project proponent has installed Real Time TOD Meters with online reading features at the Metering Point
Value monitored	75,456.27 MWh
Monitoring equipment	The project proponent has installed two identical 0.2s accuracy class energy meters referred as main and check meters. These meters are located at the foot of the turbine on 33kv outgoing feeders. (Metering Point) Reading of the main meter is taken for the billing purpose, while the same is getting cross checked using the check meter. The metering equipments (main and check) are duly approved, tested and sealed by TNEB in the presence of the parties involved (TNEB

	and Vestas). The meter details and calibration are provided in the appendix-2 of MR.
QA/QC procedures to be applied	The quantity of net electricity supplied will be cross-verified from the invoice raised to TNEB by the project proponent. The TNEB carries out the calibration, periodical testing, sealing and maintenance of meters in the presence of Vestas representative. The frequency of meter testing is once in 5 year. All meters are tested at the Metering Point.
Purpose of the data	Calculation of baseline emissions
Calculation method	Measured Quantity
Comments	The data will be archived for crediting period + 2 years.

4.3 Monitoring Plan

The approved large-scale methodology ACM0002 (Version 20.0.0), stipulates the monitoring of the net electricity generation supplied by the project plant/unit to the grid.

Description of the Monitoring Plan

Each of the 30 WEGs considered in the Project has Main and Check meters installed on the 33 kV outgoing feeder for metering of electricity produced/ consumed by the WEGs Both of these Main and Check meters are identical in terms of technical specification.

The TNEB carries out the calibration, periodical testing, sealing and maintenance of meters in the presence of Vestas representative. The frequency of meter testing is once in 5 years. All meters are tested at the Metering Point.

Metering procedure

The generated electricity is measured through a two steps procedure wherein the first metering is carried out at the micro-processor based controller (Local Control System) specially designed to control the WEG. The primary function of the LCS is to ensure that all the components of the WEG remain fully operational under all conditions. In order to meet this requirement, it is necessary to monitor wind speed, wind direction, temperature, rotational speeds, electricity generated, voltage etc. The LCS display and keyboard enable control of all WEG functions. The electricity generation details are displayed in the LCS. The monitoring of all these wind turbines is done from a common monitoring station as a part of central monitoring system. The system consists of a state- of- the- art controlling and monitoring and well trained staff personnel of O&M contractor, Vestas, are always present on site to monitor various parameters of power generation and deal with any problems related to generation, transmission or maintenance.

The metering is carried out at TNEB meter located near each WEG. This is the metering point wherein the Joint Meter Reading (JMR) is carried out every month in presence of the representatives of the project proponent & the state electricity utility (TNEB). This JMR is used for calculation of the amount of electricity supplied to the grid against which the utility makes

the payment to the project proponent. The JMR gives both the “export” and “import” of the electricity to/ from the national grid. There is a single meter which gives both the export and import values, this metered reading gave value net of line losses (negligible since metering/JMR point is very close to the WEG) and auxiliary consumption. The details of metering equipment, calibrations are provided in Appendix 1.

Organizational structure, responsibilities and competencies

The representatives of Operations and Maintenance contractor (Vestas) record the readings and prepare daily generation reports of all the WEGs. The primary recording of the electricity fed to the electricity grid is being carried out jointly at the TNEB meter located near each WEG. The operations and maintenance structure for the project activity is as follows:



Flow of information

Generating, Recording, Storing, Aggregating, Collating and Reporting of Data:

The meter readings at the Metering Point (main meter and check meter) are undertaken every month jointly by the representatives of the TNEB and Vestas representative for the previous month and it is certified by representatives of TNEB. The reporting structure has been presented in the preceding section. The monthly data is recorded and stored by the project proponent.

Procedures for handling data uncertainty (internal auditing and non-conformities):

- In case main meter is faulty- check meter is used to calculate the electricity exported to the grid. Main meter is immediately replaced by a new meter and meter reading from the replaced meter is used thereafter.

- b. In case the check meter is faulty- The check meter is immediately replaced. The emission reduction calculation would not be affected as reading from main meter is used to calculate the net electricity exported to the grid.
- c. In case error is identified during annual accuracy testing- If during the annual tests, the meter is found to be beyond the permissible limits of error, the meter shall be immediately calibrated and replaced, if necessary. The error that is identified in the annual accuracy testing would be applied to all the readings of electricity exported as indicated in the credit note from the state utility from the date of last accuracy testing. Billing for the period thereafter shall be as per the calibrated meter.

The Project Management team of Apraava Wind Energy (Theni – Project II) Private Limited (AWEPL) receives the data from both the sources and keeps track of project activity which reduces the carbon emission reductions.

Apportioning of data:

In case the start date of Monitoring period falls in between the monthly Monitoring date, i.e. JMR date, in such case the generation data for the number of days for the monitoring period would be calculated based on the generation ratio as per the controller data. The following generation apportioning procedure will be followed, if the crediting period date of the project activity falls in – between the billing cycles:

Partial days generation of the project activity WEG's at controller of a Month: **X**

Total generation of the project activity WEG's at controller for the same month: **Y**

% Generation for partial days of generation (%): **$Z = (X/Y) * 100$**

Electricity supplied to grid by the WEGs of the project activity as per share certificate for the same month: **G⁶**

Electricity supplied to grid by the WEGs of the project activity for the partial days: **$(G * Z / 100)$** .

Further, the data would also be required to be apportioned for calculation of yearly Emission reductions in case the JMR is not as per the starting of the month. In such cases apportioning based on the number of days shall be applied.

⁶ The value of G is for the month where billing cycle date does not match with the monitoring period dates (start and/or end date). Both the parameter EG_{PJy} and G are the net electricity supplied to the grid by the WEGs of the project activity. EG_{PJy} is the net electricity supplied to the grid for the year/monitoring period. The apportioning procedure will only be used when the billing cycle and monitoring period dates does not match.

5 QUANTIFICATION OF GHG EMISSION REDUCTIONS AND REMOVALS

5.1 Baseline Emissions

The baseline emissions are calculated as follows:

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

Thus,

$$\begin{aligned} BE_y &= 75,456.27 * 0.9346 \text{ tCO}_2\text{e} \\ &= 70,521 \text{ tCO}_2\text{e} \end{aligned}$$

5.1.1 Project Emissions

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

5.2 Leakage Emissions

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

5.3 GHG Emission Reductions and Carbon Dioxide Removals

Vintage period	Baseline emissions (tCO ₂ e)	Project emissions (tCO ₂ e)	Leakage emissions (tCO ₂ e)	Reduction VCU's (tCO ₂ e)	Removal VCU's (tCO ₂ e)	Total VCUs (tCO ₂ e)
2024 (01-Jan-2024 to 31-Dec-2024)	70,521	0	0	70,521	0	70,521
Total	70,521	0	0	70,521	0	70,521

Vintage period	Ex-ante estimated reductions/removals	Achieved reductions/removals	Percent difference	Explanation for the difference
2024 (01-Jan-2024	1,12,763	70,521	-37.48%	The generation has found to be 37.48% lower than the estimated

to 31-Dec-2024)				generation which is due to seasonal and cyclical variation in wind characteristics which is beyond the control of project participant. During the current monitoring period the achieved PLF is 17.40% which is well below the PLF (27.82%) considered during investment analysis. Hence, there is no impact on additionality of the project.
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APPENDIX 1: COMMERCIALLY SENSITIVE INFORMATION

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

APPENDIX 2: CALIBRATION DETAILS

HTSC Number	Meter Type	Meter Details				
		Sr. No.	Previous Calibration Date	Latest Calibration Date	Validity	Class
T-90	Main Meter	HPL624813	23-Feb-17	22-Feb-2023	21-Feb-2028	0.2s
	Check Meter	HPL624819	22-Feb-17	22-Feb-2023	21-Feb-2028	0.2s
T-91	Main Meter	HPL624812	25-Feb-17	22-Feb-2023	21-Feb-2028	0.2s
	Check Meter	HPL624817	25-Feb-17	22-Feb-2023	21-Feb-2028	0.2s
T-92	Main Meter	HPL624814	24-Feb-17	21-Feb-2023	20-Feb-2028	0.2s
	Check Meter	HPL624978	24-Feb-17	21-Feb-2023	20-Feb-2028	0.2s
T-93	Main Meter	HPL624972	24-Feb-17	21-Feb-2023	20-Feb-2028	0.2s
	Check Meter	HPL624976	24-Feb-17	21-Feb-2023	20-Feb-2028	0.2s
T-94	Main Meter	HPL624971	24-Feb-17	21-Feb-2023	20-Feb-2028	0.2s
	Check Meter	HPL624975	24-Feb-17	21-Feb-2023	20-Feb-2028	0.2s
T-95	Main Meter	HPL624973	25-Feb-17	21-Feb-2023	20-Feb-2028	0.2s
	Check Meter	HPL624977	25-Feb-17	21-Feb-2023	20-Feb-2028	0.2s
T-96	Main Meter	HPL624979	22-Feb-17	21-Feb-2023	20-Feb-2028	0.2s
	Check Meter	HPL624980	22-Feb-17	21-Feb-2023	20-Feb-2028	0.2s
T-97	Main Meter	HPL624820	22-Feb-17	22-Feb-2023	21-Feb-2028	0.2s
	Check Meter	HPL624974	22-Feb-17	22-Feb-2023	21-Feb-2028	0.2s
T-98	Main Meter	HPL625141	23-Mar-17	21-Feb-2023	20-Feb-2028	0.2s

HTSC Number	Meter Type	Meter Details				
		Sr. No.	Previous Calibration Date	Latest Calibration Date	Validity	Class
	Check Meter	HPL625146	23-Mar-17	21-Feb-2023	20-Feb-2028	0.2s
T-99	Main Meter	HPL625144	24-Mar-17	21-Feb-2023	20-Feb-2028	0.2s
	Check Meter	HPL625150	23-Mar-17	21-Feb-2023	20-Feb-2028	0.2s
T-100	Main Meter	GENUS4322544	29-May-17	21-Feb-2023	20-Feb-2028	0.2s
	Check Meter	HPL 3033738	08-Dec-17	21-Feb-2023	20-Feb-2028	0.2s
T-101	Main Meter	GENUS4321972	30-May-17	25-Jan-2023	24-Jan-2028	0.2s
	Check Meter	HPL 3033737	08-Dec-17	25-Jan-2023	24-Jan-2028	0.2s
T-102	Main Meter	HPL625145	24-Mar-17	20-Feb-2023	19-Feb-2028	0.2s
	Check Meter	HPL625149	24-Mar-17	20-Feb-2023	19-Feb-2028	0.2s
T-103*	Main Meter	23003966	05-Mar-17	10-Apr-2023	09-Apr-2028	0.2s
	Check Meter	23003991	05-Mar-17	10-Apr-2023	09-Apr-2028	0.2s
T-104	Main Meter	HT2180069	30-May-17	25-Jan-2023	24-Jan-2028	0.2s
	Check Meter	HPL 3033733	08-Dec-17	25-Jan-2023	24-Jan-2028	0.2s
T-105	Main Meter	HPL624853	22-Mar-17	25-Jan-2023	24-Jan-2028	0.2s
	Check Meter	HPL624860	22-Mar-17	25-Jan-2023	24-Jan-2028	0.2s
T-106	Main Meter	HPL624856	22-Mar-17	25-Jan-2023	24-Jan-2028	0.2s
	Check Meter	HPL624859	27-Feb-17	25-Jan-2023	24-Jan-2028	0.2s
T-107	Main Meter	HPL625142	22-Mar-17	20-Feb-2023	19-Feb-2028	0.2s
	Check Meter	HPL625148	23-Mar-17	20-Feb-	19-Feb-	0.2s

HTSC Number	Meter Type	Meter Details				
		Sr. No.	Previous Calibration Date	Latest Calibration Date	Validity	Class
				2023	2028	
T-108	Main Meter	HPL625143	23-Mar-17	20-Feb-2023	19-Feb-2028	0.2s
	Check Meter	HPL625147	23-Mar-17	20-Feb-2023	19-Feb-2028	0.2s
T-109	Main Meter	HT2180068	27-Feb-17	20-Feb-2023	19-Feb-2028	0.2s
	Check Meter	HPL624855	27-Feb-17	20-Feb-2023	19-Feb-2028	0.2s
T-113	Main Meter	HPL624811	21-Feb-17	22-Feb-2023	21-Feb-2028	0.2s
	Check Meter	HPL624816	21-Feb-17	22-Feb-2023	21-Feb-2028	0.2s
T-114	Main Meter	HPL624815	22-Feb-17	21-Feb-2023	20-Feb-2028	0.2s
	Check Meter	HPL624818	21-Feb-17	21-Feb-2023	20-Feb-2028	0.2s
T-115	Main Meter	HPL625081	23-Feb-17	22-Feb-2023	21-Feb-2028	0.2s
	Check Meter	HPL625089	23-Feb-17	22-Feb-2023	21-Feb-2028	0.2s
T-116	Main Meter	5840071	29-May-17	25-Jan-2023	24-Jan-2028	0.2s
	Check Meter	HPL 3033735	08-Dec-17	25-Jan-2023	24-Jan-2028	0.2s
T-117	Main Meter	HPL624741	25-Feb-17	25-Jan-2023	24-Jan-2028	0.2s
	Check Meter	HPL624747	25-Feb-17	25-Jan-2023	24-Jan-2028	0.2s
T-118	Main Meter	HPL624857	27-Feb-17	20-Feb-2023	19-Feb-2028	0.2s
	Check Meter	HPL624858	27-Feb-17	20-Feb-2023	19-Feb-2028	0.2s
T-119	Main Meter	HPL624743	25-Feb-17	20-Feb-2023	19-Feb-2028	0.2s
	Check Meter	HPL624745	25-Feb-17	20-Feb-2023	19-Feb-2028	0.2s

HTSC Number	Meter Type		Meter Details			
		Sr. No.	Previous Calibration Date	Latest Calibration Date	Validity	Class
T-120	Main Meter	HPL624748	27-Feb-17	25-Jan-2023	24-Jan-2028	0.2s
	Check Meter	HPL624750	25-Feb-17	25-Jan-2023	24-Jan-2028	0.2s
T-121	Main Meter	3033734	29-May-17	25-Jan-2023	24-Jan-2028	0.2s
	Check Meter	GENUS 4322548	27-Feb-17	25-Jan-2023	24-Jan-2028	0.2s
T-122	Main Meter	HT180300	30-May-17	25-Jan-2023	24-Jan-2028	0.2s
	Check Meter	HPL 3033748	08-Dec-17	25-Jan-2023	24-Jan-2028	0.2s