PROJECT CONCEPT NOTE

CARBON OFFSET UNIT (COU) PROJECT

Title under UCR:
Wind Power Project by NSL Kayathar in Maharashtra, India
Version 01
Date 15/06/2025

First COU Issuance Period: 06 years 09 months 2 days
Date: 30/03/2024 to 31/12/2030

Project Concept Note (PCN)
CARBON OFFSET UNIT (CoU) PROJECT

BASIC INFORMATION	
Title of the project activity	Wind Power Project by NSL Kayathar in Maharashtra, India
Scale of the project activity	Project
Completion date of the PCN	15/06/2025
Project participants	M/s NSL Wind Power Company (Kayathar) Pvt. Ltd.
Host Party	India
Applied methodologies and standardized baselines	Applied Baseline Methodology: ACM0002: "Grid-connected electricity generation from renewable sources", version 16.0.0[1] (Large-scale Consolidated Methodology) Standardized Methodology: Not Applicable.
Sectoral scopes	01 Energy industries (Renewable/Non-Renewable Sources)
Estimated amount of total GHG emission reductions	To be estimated during verification [An ex-ante estimate is 89,522 COUs per year]

[1] This project is a VCS registered project with CDM Methodology version 16, hence same is followed under UCR. Further details explained under the section B.6.

SECTION A. Description of project activity

A.1. Purpose and general description of Carbon offset Unit (CoU) project activity >>

The project titled "**Wind Power Project by NSL Kayathar in Maharashtra, India**" is a grid connected wind power project located in the Jath Taluka, Sangli district of Maharashtra, India. The project is an operational activity with continuous reduction of GHG under Voluntary Standard; currently being applied under "Universal Carbon Registry" (UCR).

Purpose of the project activity:

The project activity involves installation of 67.5 MW capacity wind power generation project out of which 37.5 MW is developed and operated by "NSL Wind Power Company (Kayathar) Pvt. Ltd." and 30.0 MW capacity wind power generation project by "Jath Wind Energy Private Limited" (part of NSL Group); hereinafter called as project proponent or PP, engaged in the capacity of an Independent Power Producer (IPP) focusing on developing green power projects in India. The project activity is defined as the installation and operation of total 40 Wind Turbine Generators (WTGs) having individual capacity of 1.5 MW for 25 WTG s and 2.0 MW for 15 WTGs; having different mechanism such as REC etc. Thus, the total aggregated installed capacity is 67.5 MW, is operational in the Jath Taluka, Sangli district of Maharashtra, India.

The project activity harnesses kinetic energy of wind (renewable source) to generate electricity. It is capable to generate around 118,260 MWh of annualized average green electricity, which is estimated based on an operational utilization factor of 20% with efficient utilization of the available wind energy through adoption of an efficient and modern technology. The power generated by this project activity has been supplied to Maharashtra state electricity grid, which is a part of Indian Grid system. Thus, the project activity contributes to emission reductions which would have otherwise caused due to the consumption of grid electricity which is predominantly fossil fuel based. Also, the project activity helps reducing the demand-supply gap in the state and also helps in contributing to the sustainable development attributes in the project region.

This activity involves total installation and operations of following WTGs:

Project Proponent	Number of WTG	Supplier of WTG	Rated Capacity	Total Installed Capacity	Location
NSL Wind Power Company (Kayathar) Pvt. Ltd.	25	ReGen Power Vensys V87	1.5 MW	37.5 MW	Taluka: Jath, District: Sangli, State: Maharashtra in India
Jath Wind Energy Private Limited	15	Inox Wind Ltd. WT- 2000 DF	2.0 MW	30.0 MW	Taluka: Jath, District: Sangli, State: Maharashtra in India
Total Project Capacity				67.5 MW	

The commissioning dates of the WTGs are listed in the Appendix 2.

The project is a green field project activity harnessing clean energy from wind. The project activity replaces anthropogenic emissions of greenhouse gases (GHGs) from the atmosphere, by displacing the equivalent amount of electricity generation through the operation of existing fuel mix in the grid comprising mainly fossil fuel-based power plants.

The power generated by the operation of wind turbines is emission free. In the absence of the project activity the equivalent amount of electricity would have been generated from the connected/ new power plants to the NEWNE grid, which are/will be predominantly based on fossil fuels. As the project activity is a green field facility, the baseline scenario is the same as the conditions existing prior to the project initiation. Please refer to Section 2.4 (Baseline Scenario)

Hence, project activity is displacing the estimated annual net electricity generation i.e., 118,260 MWh from the grid, which otherwise would have been generated from fossil fuel based thermal power plant and exported to the national grid. The project activity doesn't involve any GHG emission sources. The estimated annual average CO_2e emission reduction by the project activity is expected to be 89,522 tCO_2e; whereas actual emission reduction achieved during the first CoU period shall be submitted as a part of first monitoring and verification.

Since the project activity will generate electricity through wind energy, a clean renewable energy source it will not cause any negative impact on the environment and thereby contributes to climate change mitigation efforts.

A.2 Do no harm or Impact test of the project activity>>

There are social, environmental, economic and technological benefits which contribute to sustainable development. Ministry of Environment and Forests has stipulated economic, social, Environment and technological well-being as the four indicators of sustainable development. The project contributes to sustainable development using the following ways:

1. Social benefits:

The project helped in generating employment opportunities during the construction and operation phases. There are local people who are currently employed under the project. The project activity has led to development in infrastructure in the region like development of roads and also promotes business with improved power generation.

2. Environmental benefits:

The project is a clean technology investment in the region, which would not have been taken place in the absence of the carbon benefits, being availed by the project activity. The project activity also helps reducing the demand supply gap in the state.

By nature, the wind energy does not emit toxic substances or contaminants into the air as compared to the project baseline being established (i.e. Grid), which can be very damaging to the environment and to human beings. Toxic substances can acidify land and water ecosystems and corrode buildings. Air contaminants can trigger heart disease, cancer and respiratory diseases like asthma. It is a very clean energy source, which does not release any pollution or produce any waste during operation. Thus, wind project has zero negative impacts, while adding many environmental benefits.

3. Economic benefits:

Wind energy projects provide many economic benefits to neighbouring communities: jobs, a new source of revenue for farmers and ranchers in the form of land lease payments, and an increased local tax base. Wind projects can also attract tourists who want to see wind farms in person. Locally owned community wind projects create even more of an economic opportunity for those involved. The following sections describe some of the potential economic impacts of wind development.

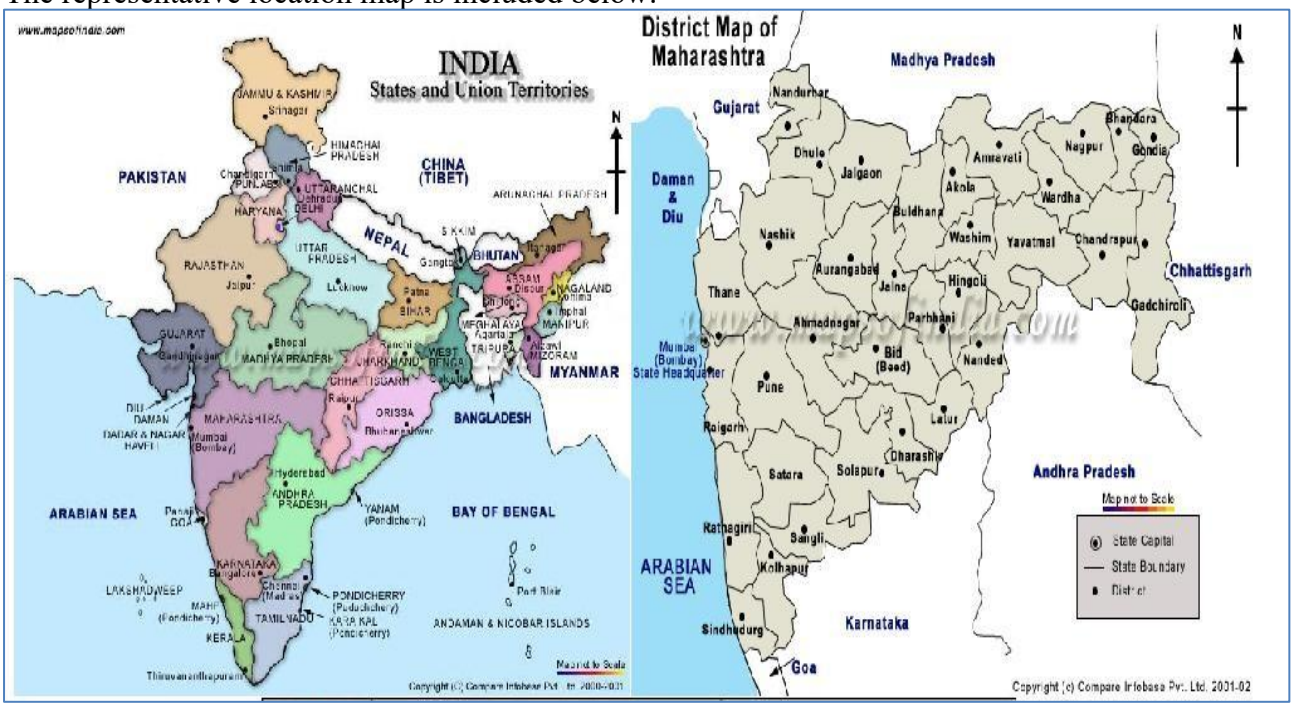
4. Technical benefits:

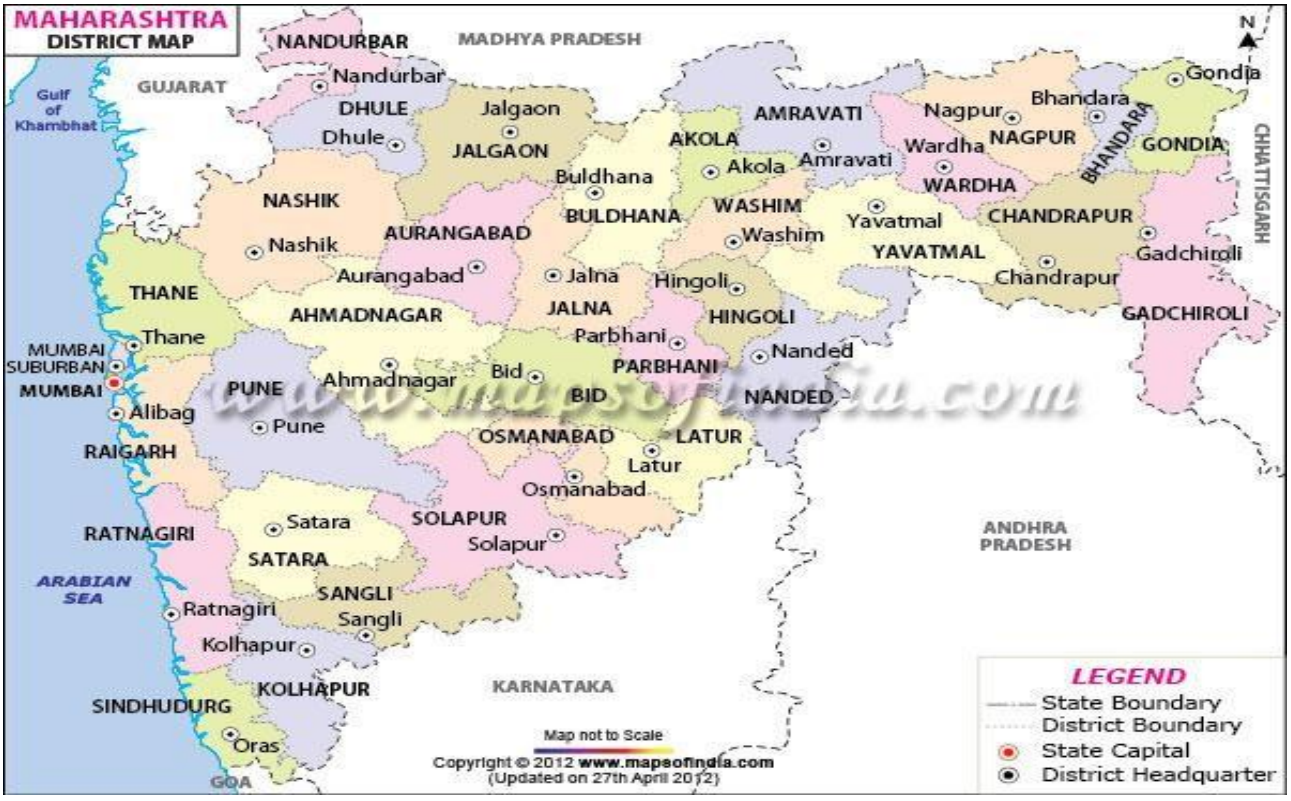
Project being a wind energy projects the technology itself is a clean and green; it has helped promoting clean technology drive in the state and also contributing to the national clean energy and thus addressing the concern of energy security in the country.

A.3. Location of project activity >>

The project sites are located at in the Mann village, in the district Satara, state of Maharashtra.

The representative location map is included below:





The details of geo-coordinated are as follows: Location of 15 WTGs from INOX (By: Jath Wind Energy Private Limited):

S. No.	WTG No.	UTM (Universal Transverse Mercator) format		DD-MM-SS (Degree/minutes/Seconds) format		Location
		Easting (m)	Northing (m)	Latitude N	Longitude E	
1	MV T-5	533120	1889212	17° 5‟ 13.4”	75° 18‟ 40.67”	Village: Valsang Tehsil: Jath District: Sangli
2	MV T-11	531602	1889817	17° 5‟ 33.16”	75° 17‟ 49.33”	Village: Karajangi Tehsil: Jath District: Sangli
3	MV T-10	531476	1889319	17° 5‟ 16.96”	75° 17‟ 45.03”	Village: Karajangi Tehsil: Jath District: Sangli
4	MV T-61	535796	1883332	17° 2‟ 1.9”	75° 20‟ 10.86”	Village: Shedyal Tehsil: Jath District: Sangli
5	MV2 T-42	530238	1879946	17° 0‟ 12.01”	75° 17‟ 2.68”	Village: Ravalgun dawadi Tehsil: Jath District: Sangli
6	MV T-45	533218	1889748	17° 5‟ 30.83”	75° 18‟ 44”	Village: Karajangi Tehsil: Jath District: Sangli
7	MV2 T - 17	531346	1879175	16° 59‟ 46.87”	75° 17‟ 40.12”	Village: Ravalgun dawadi Tehsil: Jath District: Sangli
8	MV2 T-2	532993	1880588	17° 0‟ 32.77”	75° 18‟ 35.9”	Village: Muchandi Tehsil: Jath District: Sangli
9	MV2 T-15	530784	1879320	16° 59‟ 51.61”	75° 17‟ 21.12”	Village: Ravalgun dawadi Tehsil: Jath District: Sangli
10	MV2 T-41	530175	1879560	16° 59‟ 59.45”	75° 17‟ 0.54”	Village: Ravalgun dawadi Tehsil: Jath District: Sangli
11	MV2 T-28	532352	1875997	16° 58‟ 3.4”	75° 18‟ 13.98”	Village: Ravalgun dawadi Tehsil: Jath District: Sangli

12	MV2 T-3	533289	1880081	17° 0‟ 16.25”	75° 18‟ 45.88”	Village: Muchandi Tehsil: Jath District: Sangli
13	MV T-62	534857	1882341	17° 1‟ 29.71”	75° 19‟ 39.04”	Village: Muchandi Tehsil: Jath District: Sangli
14	MV T-63	534898	1882806	17° 1‟ 44.84”	75° 19‟ 40.45”	Village: Muchandi Tehsil: Jath District: Sangli
15	MV2 T-37	531281	1880464	17° 0‟ 28.81”	75° 17‟ 37.99”	Village: Muchandi Tehsil: Jath District: Sangli

Location of 25 WTGs from Regen Power (By NSL Wind Power Company (Kayathar) Pvt. Ltd.):

S. No.	WTG No.	UTM (Universal Transverse Mercator) format		DD-MM-SS (Degree/minutes/Seconds) format		Location
		Easting (m)	Northing (m)	Latitude N	Longitude E	
1	NSL P1-332	524859	1894452	17° 8‟ 4.29”	75°14‟ 1.35”	Village: Wayphal Tehsil: Jath District: Sangli
2	NSL P1-408	525895	1895627	17° 8‟ 42”	75°14‟36.46”	Village: Wayphal Tehsil: Jath District: Sangli
3	NSL P1-186	526238	1894037	17°7‟50.73”	75°14‟48.01”	Village: Banali Tehsil: Jath District: Sangli
4	NSL P1-331	524784	1894116	17°7‟53.36”	75° 13‟ 58.8”	Village: Banali Tehsil: Jath District: Sangli
5	NSL P1179A	525198	1895440	17°8‟36.43”	75°14‟12.87”	Village: Banali Tehsil: Jath District: Sangli
6	NSL P1-179	525260	1895102	17°8‟25.43”	75°14‟14.95”	Village: Banali Tehsil: Jath District: Sangli
7	NSL P1-310	525023	1894815	17° 8‟ 16.1”	75° 14‟ 6.92”	Village: Banali Tehsil: Jath District: Sangli

8	NSL P11001	527255	1898405	17°10‟12.3”	75°15‟22.62”	Village: Wayphal Tehsil: Jath District: Sangli
9	NSL P11000	527255	1898405	17°10‟12.3”	75°15‟22.62”	Village: Wayphal Tehsil: Jath District: Sangli
10	NSL P11028	527971	1897996	17°9‟59.49”	75°15‟46.84”	Village: Wayphal Tehsil: Jath District: Sangli
11	NSL P1-95	528098	1897567	17°9‟45.52”	75°15‟51.12”	Village: Wayphal Tehsil: Jath District: Sangli
12	NSL P1-930	527308	1899768	17°10‟57.8”	75°15‟24.47”	Village: Wayphal Tehsil: Jath District: Sangli
13	NSL P1-229	527201	1894912	17° 8‟ 19.16”	75°15‟20.64”	Village: Wayphal Tehsil: Jath District: Sangli
14	NSL P1-929	527156	1899108	17°10‟35.7”	75°15‟19.303”	Village: Wayphal Tehsil: Jath District: Sangli
15	NSL P1-276	527115	1895607	17° 8‟ 41.79”	75° 15‟ 17.76”	Village: Wayphal Tehsil: Jath District: Sangli
16	NSL P11034	527184	1897750	17° 9‟ 51.51”	75° 15‟ 20.19”	Village: Wayphal Tehsil: Jath District: Sangli
17	NSLP11078/1	526377	1896547	17° 9‟12.41”	75° 14‟ 52.82”	Village: Wayphal Tehsil: Jath District: Sangli
18	NSL P1169A	524926	1896003	17° 8‟ 54.76”	75° 14‟ 3.68”	Village: Banali Tehsil: Jath District: Sangli
19	NSL P1169B	524882	1896306	17° 9‟ 4.62”	75° 14‟ 2.21”	Village: Banali Tehsil: Jath District: Sangli
20	NSL P1252A	525005	1893004	17° 7‟ 17.16”	75° 14‟ 6.23”	Village: Banali Tehsil: Jath District: Sangli
21	NSL P1252B	525073	1892655	17° 7‟ 5.81”	75° 14‟ 8.52”	Village: Banali Tehsil: Jath District: Sangli
22	NSL P1-407	525915	1895958	17° 8‟ 53.25”	75° 14‟ 37.16”	Village: Wayphal Tehsil: Jath District: Sangli
23	NSL P1-216	528475	1896022	17° 8‟ 55.23”	75° 16‟ 3.81”	Village: Wayphal Tehsil: Jath District: Sangli

24	NSL P1-236	526679	1894772	17° 8‟ 14.63”	75° 15‟ 2.96”	Village: Wayphal Tehsil: Jath District: Sangli
25	NSL P1-171,172	530643	1887491	17° 4‟ 17.52”	75° 17‟ 16.76”	Village: Valsang Tehsil: Jath District: Sangli

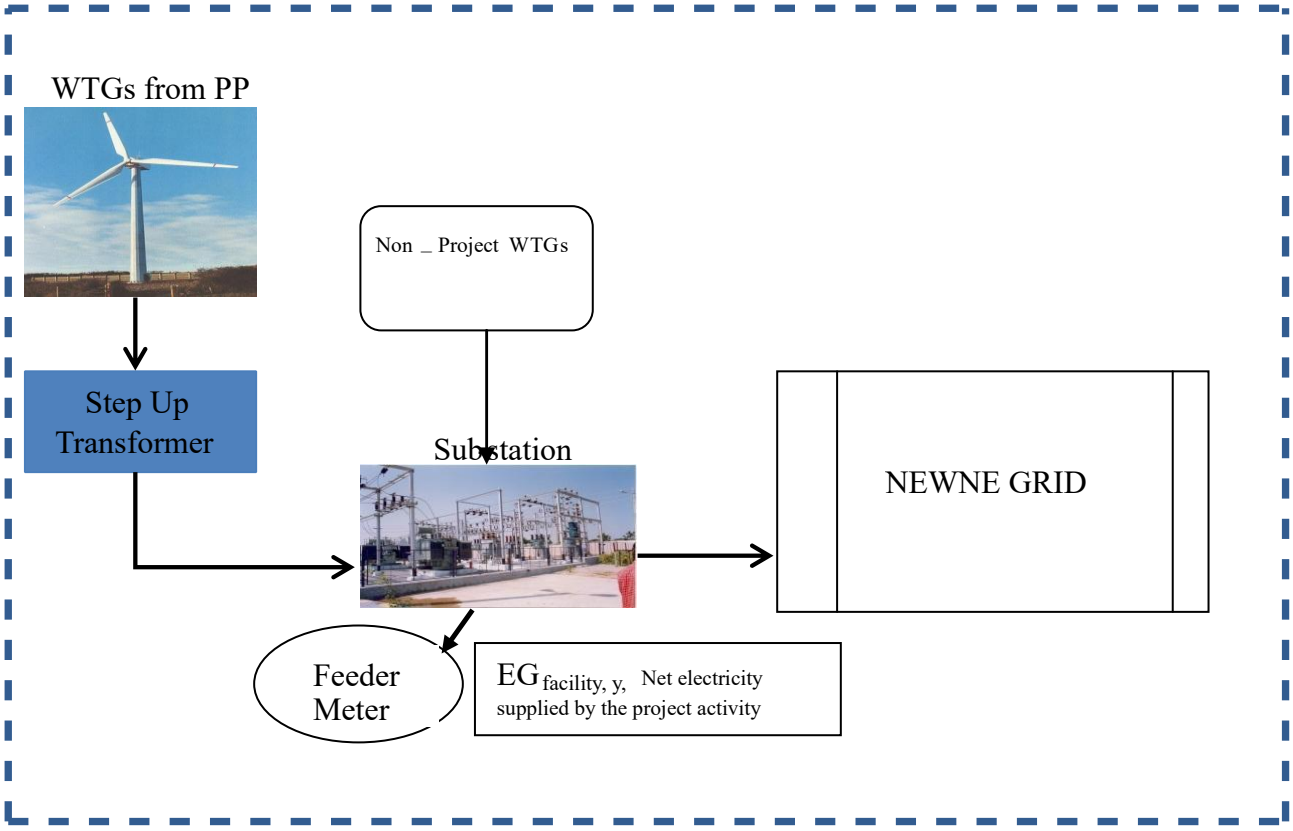
The spatial extent of this project activity includes the project site, and all the power plants connected physically to the electricity system that the project is connected to, i.e. the NEWNE Grid. Thus, the project boundary includes all the power plants physically connected to the NEWNE grid

A.4. Technologies/measures >>

The project activity employs state-of-art horizontal axis wind turbines. The WTGs comprising the project activity generates clean power which is then exported to the nearest receiving station of NEWNW grid at Satara. The WTGs are grid connected and houses the metering, switchgear and other protection equipment. Representation of the same is provided below.

Technical details:

Single Line Diagram of the project:



Further Technical Specification details given under the appendix 1.

A.5. Parties and project participants >>

Party (Host)	Participants
India	**<u>Project Developer/Proponent:</u>** **NSL Wind Power Company (Kayathar) Private Limited** **<u>Authorized Representative:</u>** **NSL Renewable Power Private Limited** **Contact details:** Mr. Rajnikant. A rajnikant.a@nslpower.com **Address:** 8 - 2-684/2/A, 4th Floor, Road.No.12, Banjara Hills, Hyderabad - 500034, Telangana, India.

A.6. Baseline Emissions>>

The baseline scenario identified at the PCN stage of the project activity is:

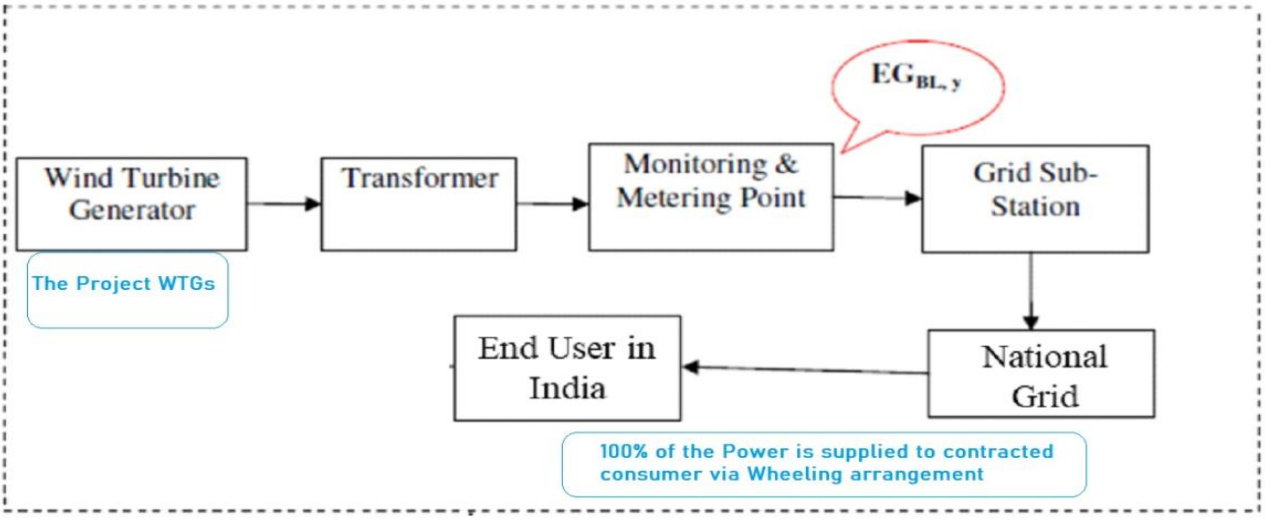
- Grid

In the absence of the project activity, the equivalent amount of electricity would have been generated from fossil fuel-based power plants and exported to the regional grid as national grid is predominantly sourcing from fossil fuel-based power plants. Thus, the project activity contributes to emission reductions which would have otherwise caused due to the consumption of grid electricity which is predominantly fossil fuel based.

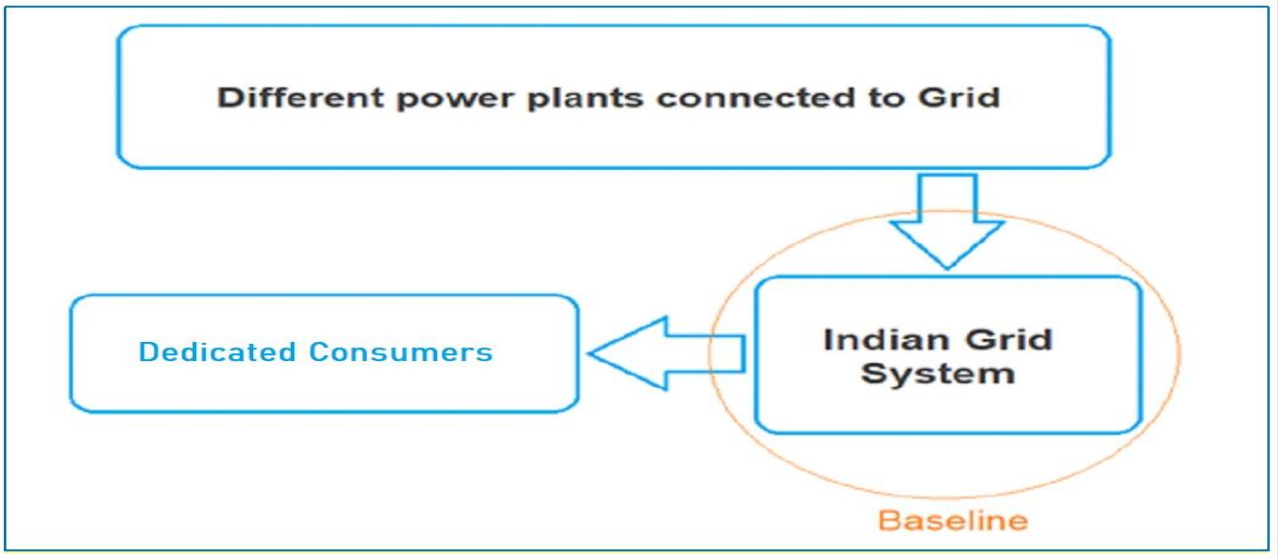
Hence, baseline scenario of the project activity is the grid-based electricity system, which is also the pre-project scenario.

Schematic diagram showing the baseline scenario:

Project Scenario:



Baseline Scenario:



A.7. Debundling>>

This project activity is not a debundled component of a project activity.

SECTION B. Application of methodologies and standardized baselines

B.1. References to methodologies and standardized baselines >>

SECTORAL SCOPE:
01, Energy industries (Renewable/Non-renewable sources)

TYPE:
I - Renewable Energy Projects

CATEGORY:
ACM0002, version 16

Note: The current available version of the methodology is version 22.0; however, PP had applied the version 16 of the methodology as the project is a VCS registered project under the VCS ID 1519 with the version 16 of the applied methodology. Hence, for UCR registration the same version (i.e. version 16.0) of the methodology has been considered for emission reduction calculation which is in consistency with VCS registration of the project.

B.2. Applicability of methodologies and standardized baselines >>

The project activity involves generation of grid connected electricity from the operation of a new wind power project. The project activity has installed capacity of 30 MW which will qualify for a project activity under Type-I of the Large-scale Consolidated Methodology. The project status is corresponding to the methodology ACM0002, version 16 and applicability of methodology is discussed below:

Applicability Criterion	Project Case
Para.03 of ACM0002, version 16.0: This methodology is applicable to grid-connected renewable power generation project activities that: (a) Install a Greenfield plant); (b) Involve a capacity addition to (an) existing plants. (c) Involve a retrofit of (an) existing operating plant(s)/units; or (d) Involve a rehabilitation of (an) existing plant(s)/unit(s); or (e) Involve a replacement of (an) existing plant(s)/units.	The project activity is the installation of a new Grid connected renewable (wind) power project activity at a site where no renewable power plant was operated prior to the implementation of the project activity (greenfield plant); Therefore, the project activity applicable under this methodology. Hence, the criterion is satisfied as per point (a)
Para.04 of ACM0002, version 16.0: The methodology is applicable under the following conditions: (a) The project activity may include renewable energy power plant/unit of one of the following types: hydro power plant/unit with	• The project is installing a wind power plant. Hence the criterion is satisfied as per Point (a) of Para 04 of ACM0002, version 16.0. • The project is not a capacity additions, retrofits or replacements.

Applicability Criterion	Project Case
or without a run-of-river 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 or replacements (except for wind, solar, wave or tidal power capacity addition projects the existing plant 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 or retrofit of the plant has been undertaken between the start of this minimum historical reference period and the implementation of the project activity.	Hence this criterion Point (b) of Para 04 of ACM0002, version 16.0 is not applicable.
Para.05 of ACM0002, version 16.0: In case of hydro power plants: One of the following conditions must apply: a) The project activity is implemented in an existing single or multiple reservoirs, with no change in the volume of any of reservoirs; or b) The project activity is implemented in an existing single or multiple reservoirs, where the volume of any of reservoirs is increased and the power density of each reservoir, as per the definitions given in the project emissions section, is greater than 4 W/m2; or c) The project activity results in new single or multiple reservoirs and the power density Calculated using equation (3), 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 using equation (3), is lower than or equal to 4 W/m2, all of the following conditions shall apply: I. The power density calculated using the total installed capacity of the integrated project, as per equation (4) is greater than 4 W/m2;	The project is a wind power project; hence none of the conditions discussed under Para.05 of ACM0002, version 16.0 are applicable for the project activity.

Applicability Criterion	Project Case
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/m^2 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.	
Para.06, 07. 08 of ACM0002, version 16.0: Para 06: In the case of integrated hydro power projects, project participant shall: Para 07: 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 Para 08: 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 five years prior to implementation of CDM project activity.	The project is a wind power project, hence none of the conditions discussed under Para.06, 07 & 08 of ACM0002, version 16.0 is not applicable for the project activity.
Para.09 of ACM0002, version 16.0: 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.	The project is a wind power project, hence none of the conditions discussed under Para.09 of ACM0002, version 16.0 is applicable for the project activity.
Para.10 of ACM0002, version 16.0: In the case of retrofits, rehabilitations, replacements, or capacity additions, this methodology is only applicable if the most plausible baseline scenario, as a result of the identification of baseline scenario, is "the continuation of the current situation, i.e. to use the power generation equipment that was already in use prior to the implementation of the project	The project is not of retrofits, rehabilitations, replacements, or capacity additions. Hence the condition discussed under Para.10 of ACM0002, version 16.0 is not applicable for the project activity.

Applicability Criterion	Project Case
activity and undertaking business as usual maintenance"	

Conclusions: The project activity is a Greenfield wind power project of 67.5 MW, which is greater than 15 MW. The project proposed to export the power generated to the Maharashtra state electricity grid. Thus, methodology is applicable.

B.3. Applicability of double counting emission reductions >>

There is no double accounting of emission reductions in the project activity due to the following reasons:

- Project is uniquely identifiable based on its location coordinates,
- Project has dedicated commissioning certificate and connection point,
- Project is associated with energy meters which are dedicated to the generation/feeding point with the grid.

B.4. Project boundary, sources and greenhouse gases (GHGs)>>

As per applicable methodology ACM0002, version 16.0, Para 21: "*The spatial extent of the project boundary includes the project power plant, and all power plants connected physically to the electricity system that the project power plant is connected to*."

Therefore, the project boundary includes all the 40 numbers of WTGs along with the WTGs of the other project participant connected to the sub-station, which is further connected to the network of the NEWNE grid, i.e. the project boundary also includes the NEWNE grid. Thus, the project boundary further includes all the power plants physically connected to the NEWNE grid.

Source		Gas	Included?	Justification/Explanation
Baseline	Grid connected fossil fuel-based electricity generation	**CO_2**	**Yes**	**Main emission source**
		CH_4	No	Minor emission source
		N_2O	No	Minor emission source
		Other	No	No other GHG emissions were emitted from the project
Project	Greenfield Wind Power Project Activity	CO_2	No	No CO_2 emissions are emitted from the project
		CH_4	No	Project activity does not emit CH_4
		N_2O	No	Project activity does not emit N_2O
		Other	No	No other emissions are emitted from the project

B.5. Establishment and description of baseline scenario >>

This section provides details of emission displacement rates/coefficients/factors established by the applicable methodology selected for the project.

As the project activity is a new grid connected renewable powers project, hence the baseline scenario for the project activity according to ACM0002, Version 16.0; Para 23 is:

"If the project activity is the installation of a Greenfield power plant, 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".

In the absence of the project activity, the equivalent amount of power would have been generated by the operation of grid-connected fossil fuel-based power plants and by the addition of new fossil fuel-based generation sources into the grid. The power produced at grid from the other conventional sources which are predominantly fossil fuel based. Hence, the baseline for the project activity is the equivalent amount of power produced at the Indian grid.

A "grid emission factor" refers to a CO_2 emission factor (tCO_2/MWh) which will be associated with each unit of electricity provided by an electricity system. The UCR recommends an emission factor of 0.757 tCO_2/MWh for the 2024 vintage years as a fairly conservative estimate for Indian projects not previously verified under any GHG program. Also, for the vintage 2024, the combined margin emission factor calculated from CEA database in India results into higher emission than the default value. Hence, the same emission factor has been considered to calculate the emission reduction under conservative approach.

Net GHG Emission Reductions and Removals

Thus, $ER_y = BE_y – PE_y – LE_y$

Where:

ER_y = Emission reductions in year y (tCO_2/y)

BE_y = Baseline Emissions in year y ($t CO_2/y$)

PE_y = Project emissions in year y (tCO_2/y)

LE_y = Leakage emissions in year y (tCO_2/y)

Baseline Emissions

Baseline emissions include only CO_2 emissions from electricity generation in power plants that are displaced due to the project activity. The methodology assumes that all project electricity generation above baseline levels would have been generated by existing grid-connected power plants and the addition of new grid-connected power plants.

The baseline emissions are to be calculated as follows:

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

Where:

BE_y	=	Baseline emissions in year y (t CO_2)
$EG_{BL,y}$	=	Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the UCR project activity in year y (MWh)
$EF_{grid,y}$	=	UCR recommended emission factor of 0.757 tCO_2/MWh has been considered. (Reference: General Project Eligibility Criteria and Guidance, UCR Standard, page 4)

Project Emissions

As per ACM0002, version 16, only emission associated with the fossil fuel combustion, emission from operation of geo-thermal power plants due to release of non-condensable gases, emission from water reservoir of wind should be accounted for the project emission. Since the project activity is a wind power project, project emission for renewable energy plant is nil.

Thus, PE_y = 0.

Leakage

As per ACM0002, version 16, 'If the energy generating equipment is transferred from another activity, leakage is to be considered.' In the project activity, there is no transfer of energy generating equipment and therefore the leakage from the project activity is considered as zero.

Hence, LE_y = 0

The actual emission reduction achieved during the first CoU period shall be submitted as a part of first monitoring and verification. However, for the purpose of an ex-ante estimation, following calculation has been submitted:

Estimated annual baseline emission reductions (BE_y):

= 118,260 MWh/year ✕ 0.757 tCO_2/MWh
= 89,522.82 tCO_2/year **(i.e., 89,522 CoUs/year)**

B.6. Prior History>>

The first WTG under the project was commissioned on 30th March 2014 and the project is under continuous operation since then. The entire project was fully commissioned as on 31st October 2015.

The project was mainly invested based on carbon revenue; hence the project was initially submitted for registration under the Clean Development Mechanism (CDM); however, it was not registered. Subsequently, it was submitted for registration under the Verified Carbon Standard (VCS) mechanism and got registered as project (VCS ID 1520) to secure position under voluntary platform. The crediting period of the project under VCS was started on 30th March 2014 and ends on 29th March 2024. The project has already claimed carbon credits under VCS for the period "30th March 2014 to 29th Mar 2024". Thereafter, the project was considered under VCS mechanism till 29th March 2024. However, the project has not been further under VCS beyond 29th March 2024.

In continuation with the same, the UCR project has been considered crediting of GHG emission reductions from 30th March 2024. Hence, the first monitoring period considered under UCR is from 30th March 2024, thus there is no concern of double accounting of emission reductions.

B.7. Changes to start date of crediting period >>

Not applicable, this is the first submission of the PCN under UCR for initial registration.
The start date of crediting under UCR is considered as 30th March 2024 as explained under the section B.6. However, if any change is considered the same will be addressed during the first verification.

B.8. Permanent changes from PCN monitoring plan, applied methodology or applied standardized baseline >>

Not applicable.

B.9. Monitoring period number and duration>>

Number : 01 (First Monitoring Period)
Duration : 06 Years, 09 months, 2 days
30/03/2024 to 31/12/2030 (inclusive of both dates)

B.8. Monitoring plan>>

Data and Parameters available at validation (ex-ante values):

Data / Parameter	UCR recommended emission factor
Data unit	tCO_2 /MWh
Description	A "grid emission factor" refers to a CO_2 emission factor (tCO_2/MWh) which will be associated with each unit of electricity provided by an electricity system. The UCR recommends an emission factor of 0.757 tCO_2/MWh for the 2024 vintage year as a fairly conservative estimate for Indian projects not previously verified under any GHG program. Hence, the same emission factor has been considered to calculate the emission reduction under conservative approach.
Source of data	https://medium.com/@UniversalCarbonRegistry/ucr-cou-standard-update-2024-vintage-ucr-indian-grid-emission-factor-announced-ddb790cdc603
Value applied	0.757
Measurement methods and procedures	-
Monitoring frequency	Ex-ante fixed parameter
Purpose of Data	For the calculation of Emission Factor of the grid
Additional Comment	The combined margin emission factor as per CEA database (current version 17, Year 2022) results into higher emission factor. Hence for 2024 vintage UCR default emission factor remains conservative.

Data and Parameters to be monitored (ex-post monitoring values):

Data / Parameter	$EG_{BL,y}$
Data unit	MWh / year
Description	Net electricity supplied to the grid by the project activity
Source of data	NSL records / MSEDCL records
Measurement procedures (if any):	For the purpose of a simplified and reliable measurement method, PP has proposed the following procedure for the parameter: (i) If the JMR/Monthly credit notes etc. generated for the project WTGs provide net export quantity, the same will be directly considered for calculation. (ii) However, if the monthly statement does not directly provide "net electricity" units, then quantity of net electricity supplied to the grid shall be calculated using the parameters reflected in the monthly document, such as Export units, Import units and losses. However, as per the practices observed during the ER accounting under VCS for the project, the monthly accounting procedure (as may be reflected in the monthly statement e.g., JMR and Invoices etc.) includes adjustment of transmission losses both for export and import

	parameters. Thus, PP decides to consider the same given practice for ER calculation, which is conservative. Thus the final formula to be used for net electricity calculation is as follows: Net Electricity = Export – 115% of Import – Transmission Losses (%) * Export.
Measurement Frequency:	Monthly
Value applied:	118,260 (This is an annualized average value considered here for an ex-ante estimation only, whereas this is an ex-post parameter hence actual value shall be applied during monitoring and verification)
QA/QC procedures applied:	The quantity of net electricity supplied will be cross verified from the invoices raised on MSEDCL by the project participant. QA/QC procedures will be as implemented by DISCOM pursuant to the provisions of the power purchase agreement and there will be no additional QA/QC procedures.
Purpose of data:	The Data/Parameter is required to calculate the baseline emission.
Any comment:	All the data will be archived till a period of two years from the end of the crediting period.

Appendix 1: Technical Specification of WTGs

Technical specification of the wind machine:
1) WTGs supplied by ReGen Powertech:

ReGen Powertech	VENSYS 87
POWER	
Rated power	1500 kW
Cut-in wind speed (10 min. mean)	3 m/s
Rated Wind Speed (10 min. mean)	approx. 12 m/s
Cut-out wind speed (10 min. mean)	22 m/s
Survival wind speed	52.5 m/s
Generator	Variable Speed, Multi-pole Synchronous with Permanent Magnet Excitation
ROTOR	
Diameter	87
Swept area	5942 sq. m
Speed range (variable)	9 to 17.3 rpm
TOWER AND FOUNDATION	
Hub height	85 m
Design	Tubular, Four sections
Foundation type	Floating foundation
CONTROL AND SAFETY SYSTEMS	
Control of output	Pitch Regulation
Speed control	Variable, Micro-controller based
Low Voltage Ride Through (LVRT)	3 seconds
Primary brake system	Aerodynamic Brake, Single Pitch Control/triple redundant
Pitch System	Electromechanical, Maintenance Free Toothed Belt Drive (Patented)
Remote Monitoring	VPN, Visualization via web-browser
TYPE CLASSES	
Wind turbine type class	GL III B

2) WTGs supplied by INOX Wind:

No. of WTGs - 15	
	INOX WIND - MODEL WT 2000 DF
OPERATING DATA	
Rated power	2000 kW
Cut-in wind speed	3 m/s
Rated wind speed	11.5m/s
Cut-out wind speed	20 m/s
Survival wind speed	52.5 m/sec
Hub height	80 meters
Type class	TC IIIB
Rotor speed	15.9 RPM
Operational mode	Variable speed
Design Standards	Germanischer Lloyd
ROTOR	
Pitch system	Pitch control- electrical, variable speed inverters, power back up with ultra capacitor
Diameter	93 meters
Swept area	6785 sq. meters
Blade material type	Epoxy glass fibre
GENERATOR	
Type	Double fed induction generator
Rated power	2000 kW
Rated voltage	690 V AC, 3 Phase
Frequency	50 Hz
Cooling system	Water Cooled
Insulation	Class H
BRAKING SYSTEM	
Aerodynamic brake	Full span independent blade pitching
Mechanical brake	Disc brakes
DRIVE TRAIN	
Drive train	Patented integral drive train with rotor shaft and drive train as single unit
Rated drive torque	1280 kNm
Maximum static torque	2235 kNm
Type of gearing	Two planetary and one parallel shaft gear

Transmission ratio	1: ~ 114.7
Gear lubrication	Forced lubrication
Connection gear / generator	Flexible coupling
YAW SYSTEM	
Type	Driven by 4 gear motors
Bearings	Slide bearings
TOWER	
Type	Conical tubular steel tower
Tower Height	78 meters
Corrosion protection	Protective paint
Average Lifetime	20 years (Reference – CA letter & Technology Provider Specification)

Appendix 2: Commissioning Dates of the WTGs

WTG ID ref.	Date of Commissioning
NSL Wind Power Company (Kayathar) Pvt. Ltd.	
NSL P1-332	30/03/2014
NSL P1-408	30/03/2014
NSL P1-186	31/03/2014
NSL P1-331	31/03/2014
NSL P1-179A	31/03/2014
NSL P1-179	31/03/2014
NSL P1-310	31/03/2014
NSL P1-1001	31/03/2014
NSL P1-1000	31/03/2014
NSL P1-1028	31/03/2014
NSL P1-95	31/03/2014
NSL P1-930	31/03/2014
NSL P1-229	31/03/2014
NSL P1-929	31/03/2014
NSL P1-276	31/03/2014
NSL P1-1034	31/03/2014
NSL P1-1078/1	31/03/2014
NSL P1-169A	03/10/2015
NSL P1-1698	03/10/2015
NSL P1-252A	03/10/2015
NSL P1-252B	03/10/2015
NSL P1-407	03/10/2015
NSL P1-216	03/10/2015
NSL P1-236	03/10/2015
NSL P1-171,172	31/10/2015
Jath Wind Energy Private Limited	
MVT-10	30/03/2014
MVT-11	30/03/2014
MVT-45	30/03/2014

MVT-61	30/03/2014
MVT-62	30/03/2014
MVT-63	30/03/2014
MVT-05	30/03/2014
MV2T-2	31/03/2014
MV2T-41	31/03/2014
MV2T-28	31/03/2014
MV2T-42	31/03/2014
MV2T-15	31/03/2014
MV2T-17	31/03/2014
MV2T-3	31/03/2014
MV2T-37	31/10/2015