Project design document form
(Version 11.0)

BASIC INFORMATION	
Title of the project activity	Wind Power Project at Vaspet, Maharashtra
Scale of the project activity	☒ Large-scale ☐ Small-scale
Version number of the PDD	06
Completion date of the PDD	11/11/2019
Project participants	M/s ReNew Wind Energy Delhi Private Limited M/s ReNew Wind Energy (Rajkot) Private Limited
Host Party	India
Applied methodologies and standardized baselines	ACM 0002 "Consolidated baseline methodology for grid connected electricity generation from renewable sources" (Version 19.0)[1] Standardized Baseline: Not Applicable
Sectoral scopes	**Sectoral Scope: 1** Energy industries (renewable / non-renewable sources)
Estimated amount of annual average GHG emission reductions	94,425 tCO_2e

[1] https://cdm.unfccc.int/methodologies/DB/VJI9AX539D9MLOPXN2AY9UR1N4IYGD

SECTION A. Description of project activity

A.1. Purpose and general description of project activity

Purpose of the Project activity:

The purpose of the project activity is to generate electricity using wind as renewable energy source and helping in reducing usage of fossil fuels which are used for electricity generation. This would reduce the dependency on fossil fuels and reduce the Green House Gas (GHG) emissions.

General description of project activity:

ReNew Wind Energy Delhi Private Limited and ReNew Wind Energy (Rajkot) Private Limited the Project Proponents (PP), are setting up wind power project of 45 MW capacity at Village: Vaspet of Sangli district of Maharashtra. The project consists of installation of 30Vensys make wind turbines of 1.5 MW (Model V82) capacity each. The machines are supplied by ReGen Powertech. The electricity generated from this wind farm is planned to be sold to state utility. The project is expected to generate 660,975 tCO_2 of GHG emission reductions during its first crediting period with annual average of 94,425.

Baseline Scenario[2]:

Since the project activity will be utilizing renewable source of energy (Wind), it will reduce GHG emissions and protect the local environment by avoiding emissions from electrical generation using fossil fuels. In absence of the project activity, the Indian (erstwhile NEWNE) grid will continue to operate and expand based on fossil fuel generation and in turn, the wind resource in the region will remain untapped. Hence, generation mix of Indian grid is considered as the baseline scenario. The baseline scenario has thoroughly been explained in section B.4 of the respective PDD.

Contribution to Sustainable Development:

National CDM Authority (DNA for India), Ministry of Environment & Forests, Government of India has stipulated the following indicators for sustainable development in the interim approval guidelines for CDM projects[3]:

Social well-being:

Since, the project activity is in a rural area of Maharashtra, it will help in the overall development of the region. The project activity will result in generation of direct and indirect employment opportunities for the local people residing in nearby villages of Sangli, both during construction and operation phases of the project activity.

Economic well-being:

The project will create a business opportunity for local stakeholders such as suppliers, manufacturers, contractors etc in Sangli region of Maharashtra.

Environmental well-being:

Since, the project uses wind as renewable source for power generation; it does not lead to any greenhouse gas emission. It will avoid the fossil fuel consumption in the Indian (erstwhile NEWNE) grid and in turn it will result in SO_x, NO_x particulate matter emission reduction.

[2]Similar to the scenario existing prior to the prior to implementation of project activity

[3]http://ncdmaindia.gov.in/approval_process.aspx

Technological well-being:

The technology that is being used in the project activity is environmentally safe and sound. The project demonstrates harnessing wind power potential in Maharashtra and encourages setting up such projects in near future.

Proposed action plan for Action Plan for Sustainable Development:

PP plans to use 2% of the net revenues accrued from the sale of Certified Emission Reductions (CERs) of this Project activity post its accrual in areas related to sustainable development. Detailed Credible Monitorable action plan has been submitted to the host country DNA.

A.2. Location of project activity

Host Country	**:**	India
State	**:**	Maharashtra
District	**:**	Sangli
Taluka	**:**	Jat
Village	**:**	Kolgiri and Karajangi

Physical/Geographical location

The geographical co-ordinates of proposed site are attached as Annexure-2. The site is located in Sangli district of Maharashtra. The site is located from 114 km from Sangli, Nearest Airport: Kolhapur and Pune, Nearest Port: Ratnagiri, Nearest railway stations: Pandharpur, Miraj.

WTG wise location has been given below:

Loc. Label	UTM E	UTM N	LATITUDE	LONGITUDE
RVP01	534487	1889615	17° 05' 6.3775" N	75° 19' 25.7525" E
RVP02	534370	1890106	17° 05' 42.0625" N	75° 19' 25.7796" E
RVP03	534256	1890596	17° 05' 58.5413" N	75° 19' 17.8222" E
RVP04	534152	1891085	17° 06' 14.2948" N	75° 19' 15.6835" E
RVP05	535347	1889050	17° 04' 55.1391" N	75° 20' 4.8796" E
RVP06	535233	1889530	17° 05' 24.8716" N	75° 19' 51.4995" E
RVP07	535119	1890024	17° 05' 39.7157" N	75° 19' 48.3450" E
RVP08	535001	1890514	17° 05' 55.7664" N	75° 19' 43.6021" E
RVP09	534898	1890998	17° 06' 11.4869" N	75° 19' 41.8024" E
RVP10	536091	1888968	17° 05' 7.4976" N	75° 20' 9.3003" E
RVP11	535982	1889448	17° 05' 20.7277" N	75° 20' 17.9184" E
RVP12	535868	1889947	17° 05' 37.1683" N	75° 20' 13.6846" E
RVP13	535754	1890431	17° 05' 52.9248" N	75° 20' 9.8554" E
RVP14	535644	1890916	17° 06' 8.5841" N	75° 20' 5.7552" E
RVP15	535184	1892869	17° 07' 3.3670" N	75° 19' 36.3433" E
RVP16	535937	1892782	17° 07' 9.4194" N	75° 20' 16.1858" E
RVP17	536047	1892297	17° 06' 53.6306" N	75° 20' 19.8798" E
RVP18	536840	1888882	17° 05' 3.1396" N	75° 20' 46.4439" E
RVP19	536717	1889368	17° 05' 18.2784" N	75° 20' 42.3776" E
RVP20	536612	1889856	17° 05' 34.1647" N	75° 20' 38.8540" E
RVP21	536279	1891323	17° 06' 21.9221" N	75° 20' 27.6732" E
RVP22	537593	1888800	17° 05' 0.8190" N	75° 21' 11.2071" E
RVP23	538332	1888718	17° 04' 56.4780" N	75° 21' 37.0827" E
RVP24	538226	1889360	17° 05' 17.9294" N	75° 21' 33.4358" E
RVP25	537561	1889864	17° 05' 34.3698" N	75° 21' 10.9657" E
RVP26	537256	1890267	17° 05' 47.5019" N	75° 21' 0.6699" E
RVP27	537142	1890757	17° 06' 3.4539" N	75° 20' 56.8422" E
RVP28	536909	1891731	17° 06' 35.1628" N	75° 20' 49.0165" E
RVP29	536800	1892206	17° 06' 48.9986" N	75° 20' 45.7258" E
RVP30	536682	1892704	17° 07' 5.5371" N	75° 20' 41.3569" E

A.3. Technologies/measures

The project activity involves installations of 30 wind turbines of Vensys make V-82 model having a capacity of 1.5 MW each. The wind turbines are being supplied by ReGen Powertech. The total wind farm capacity is 45 MW. Brief technical details of the project are as follows:

Description	Specifications
Wind speed at rated output	10.3 m/s
Cut out speed	22 m/s
Hub height	85 m
Power regulation	Pitch
Rotor Diameter	82 m
Swept area	5258 sq. m.
Generator rated power output	1500 kW
Life Period	20 years

This project will generate clean energy by installing wind turbines in Maharashtra. The development of the project activity would reduce the Green House Gas (GHG) emissions produced by the Indian (erstwhile NEWNE) grid generation mix.

These turbines are supplied by ReGen Powertech and are designed for particular wind conditions. The technology for the same is environmentally safe and sound and there is no technology transfer to the host party involved in the same. Lifetime of the WTGs is expected to be 20 years as per data shared by the technology supplier.

As per the Energy Estimate report issued by a third party agency, the project activity is expected to supply of 100.80 GWh electricity to the Indian Grid of India each year. This translates into a Plant Load Factor (PLF) of 25.57%. In the absence of the project activity, the power demand equivalent to that supplied by the project activity would have been met from the fossil fuel intensive Indian grid. Hence the project's implementation will result in emission reductions of 94,425 tCO_2e per year of operation.

A.4. Parties and project participants

Parties involved	Project participants	Indicate if the Party involved wishes to be considered as project participant (Yes/No)
India (host)	ReNew Wind Energy Delhi Private Limited	No
	ReNew Wind Energy (Rajkot) Private Limited	
Netherlands	Amsterdam Capital Trading B.V.	No

A.5. Public funding of project activity

There is no public funding involved from parties included in the Annex I for the implementation of the Project activity.

A.6. History of project activity

The project activity has already commissioned. The registration date of the project activity under CDM mechanism is 13/12/2012. Currently, the project is applying for Renewal of Crediting Period.

A.7. Debundling

Not applicable

SECTION B. Application of methodologies and standardized baselines

B.1. References to methodologies and standardized baselines

Title: "Consolidated baseline methodology for grid-connected electricity generation from renewable sources" ACM0002 (Version 19.0, EB 100)

Reference: ACM0002 (Version 19.0, EB 100) draws upon the following tools which have been used in the PDD:

1. Tool to calculate the emission factor for an electricity system (Version 07)
2. Tool for demonstration and assessment of additionality (Version 07.0)

B.2. Applicability of methodologies and standardized baselines

The project activity involves generation of grid connected electricity from renewable wind energy. The project activity has a proposed capacity of 45 MW which will qualify for a large scale CDM project activity under Type-I of the large scale methodologies. The project status is corresponding to the methodology ACM0002 version 19.0 and applicability of methodology are discussed below.

Tool to calculate the emission factor for an electricity system[4] - Version 07.0 (EB 100, Annex 04)

Applicability Criterion	Project Case
This tool may be applied to estimate the OM, BM and/or CM when calculating baseline emissions for a project activity that substitutes grid electricity that is where a project activity supplies electricity to a grid or a project activity that results in savings of electricity that would have been provided by the grid (e.g. demand-side energy efficiency projects).	The project is a grid connected Greenfield wind power project and thus the tool is applicable.
Under this tool, the emission factor for the project electricity system can be calculated either for grid power plants only or, as an option, can include off-grid power plants. In the latter case, two sub-options under the step 2 of the tool are available to the project participants, i.e. option IIa and option IIb. If option IIa is chosen, the conditions specified in "Appendix 2: Procedures related to off-grid power generation" should be met. Namely, the total capacity of off-grid power plants (in MW) should be at least 10 per cent of the total capacity of grid power plants in the electricity system; or the total electricity generation by off-grid power plants (in MWh) should be at least 10 per cent of the total electricity generation by grid power plants in the electricity system; and that factors which negatively affect the reliability and stability of the grid are primarily due to constraints in generation and not to other aspects such as transmission capacity.	Steps involved in calculation of Emission Factor is included in section B.6.2 of the PDD as per the requirement of the tool
In case of CDM projects the tool is not applicable if the project electricity system is	Project is located in non-Annex I country and hence the tool is applicable

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

Applicability Criterion	Project Case
located partially or totally in an Annex I country.	
Under this tool, the value applied to the CO_2 emission factor of biofuels is zero.	The project is a wind power project and there is no involvement of biofuels.

Methodological Tool- Tool for the demonstration and assessment of additionality- Version 07.0

Applicability Criteria has been demonstrated in section on additionality below.

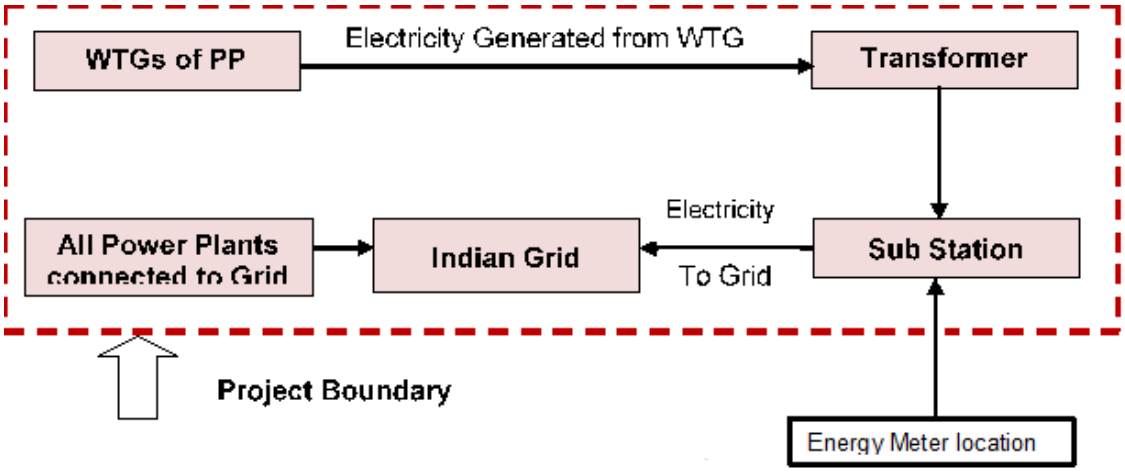
The project activity qualifies as Type I during every year of the crediting period in accordance with applicable provisions for project activity eligibility as discussed above. Also the total installed capacity of project activity is 45 MW which is applicable as per large scale project activities methodology ACM0002: Grid-connected electricity generation from renewable sources Version 19.0. The project capacity will be always remain the same and hence the project activity will always be large scale project activities throughout the crediting period and thereafter.

B.3. Project boundary, sources and greenhouse gases (GHGs)

As per ACM0002 version 19.0 - "The spatial extent of the project boundary includes the project power plant and all power plants connected physically to the electricity system that the CDM project power plant is connected to".

Project Boundary for the Wind Project

The project boundary includes the WTGs of the project, sub-stations, grid and all power plants connected to grid. The proposed project activity will evacuate power to the Indian grid. Therefore the entire Indian grid and all connected power plants have been considered in the project boundary for the present CDM project activity.



Source		Gas	Included	Justification/explanation
Baseline	CO_2 emissions from electricity generation in fossil fuel fired power plants that are displaced due to the project activity	CO_2	Yes	Main emission source
		CH_4	No	Minor emission source
		N_2O	No	Minor emission source
Project activity	For dry or flash steam geothermal power plants, emissions of CH_4 and CO_2 from non-condensable gases contained in geothermal steam	CO_2	No	The project activity does not emit carbon dioxide.
		CH_4	No	The project activity does not emit CH_4.
		N_2O	No	The project activity does not emit N_2O.
	For binary geothermal power plants, fugitive emissions of CH_4 and CO_2 from non-condensable gases contained in geothermal steam	CO_2	No	The project activity does not emit carbon dioxide.
		CH_4	No	The project activity does not emit CH_4.
		N_2O	No	The project activity does not emit N_2O.
	For binary geothermal power plants, fugitive emissions of hydrocarbons such as n-butane and isopentane (working fluid) contained in the heat exchangers	Low GWP hydrocarbon/ refrigerant	NO	Project is wind power project
	CO_2 emissions from combustion of fossil fuels for electricity generation in solar thermal power plants and geothermal power plants	CO_2	No	The project activity does not emit carbon dioxide.
		CH_4	No	The project activity does not emit CH_4.
		N_2O	No	The project activity does not emit N_2O.
	For hydro power plants, emissions of CH_4 from the reservoir	CO_2	No	The project activity does not emit carbon dioxide.
		CH_4	No	The project activity does not emit CH_4.
		N_2O	No	The project activity does not emit N_2O.

B.4. Establishment and description of baseline scenario

Updated baseline for the second crediting period in line with the “Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period.” Version 03.0.1.

This tool provides a stepwise procedure to assess the continued validity of the baseline and to update the baseline at the renewal of a crediting period, as required by paragraph 274 to 295 of Project Standard version 02.0.

The tool stipulates the following steps to be carried out.

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

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

The baseline scenario remains unchanged and is in compliance with all the relevant mandatory national and/or sectoral policies.

Step 1.2: Assess the impact of circumstances

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

Nevertheless, there is an impressive growth attained by the Indian Power Sector within the recent years, the installed capacity has grown from mere 1,713 MW in 1950 to 344,002.39 MW as on 31.03.2018, consisting of 222,906.59 MW Thermal, 69,022.39 MW Renew and 6,780 MW Nuclear. Sector-wise details of installed capacity are shown in Table 1. However, it is evident from Table 1[5] that the installed capacity is predominantly coal based and therefore, is a major source of carbon dioxide emissions in India. Hence, there exists scope for reducing the CO_2 emissions in the country by increased use of renewable energy sources.

Furthermore, project participant has considered the latest available CO_2 Baseline Database (CEA database, version 14) at the time of requesting renewal of the crediting period for establishing the baseline emission factor, which itself considered all the new circumstances. Hence, the new circumstances do not have an impact on the baseline emission. As per below table, the fossil fuel based thermal power generation is dominant over the renewable based power generation, thus baseline scenario remains same as original.

Table 1: Sector- wise installed capacity (MW) as on 31/03/2018 (CEA Database version 14)

Sector	Thermal				Nuclear	Hydro	RES	Total
	Coal	Gas	Diesel	Total				
State	64670.50	7078.95	363.93	72113.38	0.00	29858.00	2003.37	103974.75
Central	56955.00	7237.91	0.00	64192.91	6780.00	12041.42	1502.30	84516.63
Private	75546.00	10580.60	473.70	86600.30	0.00	3394.00	65516.72	155511.02
All India	197171.50	24897.46	837.63	222906.59	6780.00	45293.42	69022.39	344002.39

Thus, current baseline remain same and there is no impact if circumstances, existing at the time of requesting renewal of crediting period.

[5] http://www.cea.nic.in/reports/others/thermal/tpece/cdm_co2/user_guide_ver14.pdf

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

As explained in step 1.2, the baseline scenario was the electricity import/generation from the power plants connected to the electricity grid. The project activity in green field project and there is no any baseline equipment or investment involved in project activity. Therefore this condition is not applicable to the project activity.

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

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

In the context of the present project activity the emission factor has been updated along with the approach used to calculate the emission factor.

Step 2: Update the current baseline and the data and parameters

As evident from the explanation provided above the baseline scenario remains unchanged. Only the approach used to calculate the baseline emission factor is updated as per the latest version of CEA database available at the time of PDD submission for renewal.

In line with the project standard version 02.0, the impact of new relevant national and/or sectoral policies and circumstances on the baseline taking into account relevant EB guidance with regard to renewal of the crediting period at the time of requesting renewal of crediting period; and the correctness of the application of an approved baseline methodology for the determination of the continued validity of the baseline or its update, and the estimation of emission reductions for the applicable crediting period

Impact of the national and/or sectoral policies and circumstances upon the baseline scenario of the project activity

The Government of India enacted the Electricity Act in the year 2003 to harmonize and rationalize the provisions in the existing laws. The Act consolidated the laws relating to generation, transmission, distribution, trading and use of electricity. With the Enactment of the act, the then existing laws viz, The Indian Electricity Act 1910, The Electricity Supply Act, 1948 and The Electricity Regulatory Commissions Act, 1998 were repealed. The Electricity Act 2003 was in force at the time of the completion of the baseline study for the registered PDD.

Section 3 of the said act required the Central Government to prepare the national electricity policy and tariff policy, in consultation with the State Governments and the Authority for development of the power system based on optimal utilization of resources such as coal, natural gas, nuclear substances or materials, hydro and renewable sources of energy. In accordance with the section 3 of the Electricity Act 2003, the Central Government notified the National Electricity Policy[6] on 12th February 2005 which was in force at the time of completion of the baseline study as stated in the registered PDD of the project activity. This policy has not been revised since then and is currently in force as well.

In addition to the above policies, State Electricity Regulatory Commissions (SERCs) have announced preferential tariffs and Indian Renewable Energy Development Agency (IREDA) provides term loan assistance towards establishing biomass power projects. All these fiscal and financial

[6] http://www.cercind.gov.in/Act-with-amendment.pdf

incentives were in force at the time of completion of the baseline study for the registered PDD of the project activity and still continue to exist.

The state electricity regulatory commission issues tariff order in respect of procurement of power generated wind generators and there is no mandatory national and/or sectoral policies have come into effect that would affect the compliance of the current baseline. Hence, it can be concluded the current baseline complies with all relevant mandatory national and/or sectoral policies that have come into effect after the submission of the project activity for validation and are applicable at the time of requesting renewal of the crediting period.

However, in spite of the financial incentives given by the government to renewable power projects in India the generation from the low cost must run resources connected to the Southern Grid has not increased to such an extent that this would lead to more than 50% contribution from the low cost must run resources towards the total generation from the Southern Grid.

The approved consolidated baseline methodology, ACM0002 (Version 19), has been used to determine the baseline and the estimation of emission reductions for the applicable crediting period. As referred in the methodology "*Tool to calculate the emission factor for an electricity system*" *(version 07.0)* has been used to determine continued validity of the baseline based on combined margin (CM) calculations.

As per CEA database version 14, the fossil fuel dominated electricity is more than renewable sector and is continuing with same pattern. In light of the above discussion it is to be concluded that in accordance with relevant guidelines stipulated in the Project Standard version 02.0, national and/or sectoral policies and circumstances had been considered towards formulating the OM & BM baseline scenario. Hence the baseline scenario as applied for the present project activity remains justified.

As per the approved consolidated Methodology ACM0002 (Version 19.0) "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".

The project activity involves setting up of wind energy project to produce electricity and supply to the grid. In the absence of the project activity, the equivalent amount of power would have been supplied by the Indian grid, which is fed mainly by fossil fuel fired plants.

In the absence of the project activity, the equivalent amount of power would have been drawn from the Indian grid. Hence, the baseline for the project activity is the equivalent amount of power from the Indian grid.
The combined margin ($EF_{grid,\ CM,y}$) is the result of a weighted average of two emission factor pertaining to the electricity system: the operating margin (OM) and build margin (BM).
Calculations for this combined margin must be based on data from an official source (where available) and made publically available. The CEA database version 14 is the latest available data at the time of PD submission to DOE for validation, hence same is considered for emission factor calculations.

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

Parameter	Value	Nomenclature	Source
$EF_{grid,CM,y}$	0.9368 tCO_2/MWh	Combined margin CO_2 emission factor for the project electricity system in year y	Calculated as the weighted average of the operating margin (0.75) & build margin (0.25) values, sourced from Baseline CO_2 Emission Database, Version 14.0, Dec 2018 published by Central Electricity Authority (CEA), Government of India
$EF_{grid,OM,y}$	0.9610 tCO_2/MWh	Operating margin CO_2 emission factor for the project electricity system in year y	Calculated as the last 3 year (2015-16, 2016-17, 2017-18) generation-weighted average, sourced from Baseline CO_2 Emission Database, Version 14.0, Dec 2018 published by Central Electricity Authority (CEA), Government of India
$EF_{grid,BM,y}$	0.8723 tCO_2/MWh	Build margin CO_2 emission factor for the project electricity system in year y	Baseline CO_2 Emission Database, Version 14.0[7], May 2018 published by Central Electricity Authority (CEA), Government of India

B.5. Demonstration of additionality

The additionality of the Project activity is ascertained in line with the applicable guidance from the UNFCCC. As per decision 17/cp.7, paragraph 43; which states a CDM project activity is additional if anthropogenic emissions of greenhouse gases by sources are reduced below those that would have occurred in absence of registered CDM project activity.

The demonstration of additionality for the proposed Project activity is being carried out in accordance with the additionality tool provided by the UNFCCC i.e. "Tool for demonstration and assessment of Additionality" Version 07.0,. The tool provides a step-wise approach to demonstrate additionality which is displayed below:

Step 1: Identification of alternatives to the project activity consistent with current laws and regulations

Sub-step 1a: Define alternatives to the project activity:
Identify realistic and credible alternative(s) available to the project participants or similar project developers that provide outputs or services comparable with the proposed CDM project activity.

The proposed Project activity envisages the installation of 30 WTGs of type V 82 supplied by ReGen and each WTG has a capacity of 1500 kW. The total installed generation capacity of the Project activity is 45 MW. As the purpose of the Project activity is to generate electrical power to be fed to the grid, the following alternatives are considered:

Alternative 1: The proposed project activity not undertaken as a CDM project activity.
The PP could proceed with the implementation of the project without CDM benefits. The electricity produced from the renewable energy project would have been sold to the grid. This is in compliance with all applicable legal and regulatory requirements and can be a part of the baseline. However, the Project activity is not feasible without CDM revenues. This argument has been discussed in step 2 of the Additionality section.

Alternative 2: No proposed project activity and equivalent amount of energy would have been produced by the grid electricity system through its currently running power plants and by new capacity addition to the grid i.e. Continuation of the present situation.

[7] http://www.cea.nic.in/reports/others/thermal/tpece/cdm_co2/user_guide_ver14.pdf

The PP would have continued without investment in Project activity with usual business activities. The grid would continue with the fossil fuel based power projects and this would result in GHG emissions. Hence, the new capacity add-on from a fossil fuel based power plant is appropriate, realistic & credible baseline alternative for the project activity.

Outcome of Sub-step 1a: All the realistic alternatives for the project activity have been enlisted above.

Sub-step 1b: Consistency with mandatory laws and regulations:

The alternative(s) shall be in compliance with all applicable legal and regulatory requirements, even if these laws and regulations have objectives other than GHG reductions, e.g. to mitigate local air pollution. (This sub-step does not consider national and local policies that do not have legally-binding status).

The relevant national laws and regulations pertaining to generation of energy in India are:

- Electricity Act 2003[8]
- National Electricity Policy 2005[9]
- Tariff Policy 2006[10]

The Project activity conforms to all the applicable laws and regulations in India:

- Power generation using wind energy is not a legal requirement or a mandatory option. There are state and sectoral policies, framed primarily to encourage wind power projects. These policies have also been drafted realizing the extent of risks involved in the projects and to attract private investments.
- The Indian Electricity Act, 2003 (May 2007 Amendment) does not influence the choice of fuel used for power generation.
- There is no legal requirement on the choice of a particular technology for power generation.

Outcome of Sub-step 1b: Hence, both the alternatives enlisted above are found to comply with the mandatory laws and regulations taking into account the enforcement of the legislations in the region or country and EB decisions on national and/or sectoral policies and regulations. Alternative 2 has been selected as the appropriate baseline alternative.

Step 2: Investment analysis

Determine whether the proposed project activity is economically or financially less attractive than at least one other alternative, identified in step 1, without the revenue from the sale of certified emission reductions (CERs). To conduct the investment analysis, use the following sub-steps:

Sub-step 2a: Determine appropriate analysis method

The Project activity envisages to export the power to Indian (erstwhile NEWNE) grid and the revenues from the sale would be generated in accordance with the terms and tariffs established in the Power Purchase Agreement (PPA). Thus, simple cost analysis cannot be used as the analysis method as the sale of the units of generated electricity shall result in a revenue stream during the operations of the Project activity.

[8] https://powermin.nic.in/sites/default/files/uploads/The%20Electricity%20Act_2003.pdf

[9] https://powermin.nic.in/en/content/national-electricity-policy

[10] https://powermin.nic.in/en/content/tariff-policy

After eliminating Option I, the use of Benchmark analysis (Option III) is the method of analysis that has been selected as the most suitable method. This method determines the attractiveness of the project activity for the investors, as well as provides a measure of the viability of the investment to generate revenues during its operation, as compared with other avenues and investment options. Hence, the Benchmark analysis method is to be employed for analysis of the said project.

Sub-step 2b (Option III): Apply benchmark analysis

The investment analysis using Benchmark analysis approach (Option III) has been chosen. Further, this method illustrates the evaluation of the Project by the PP before the decision to undertake the project was taken and management approval granted.

Choice of Financial Indicator:

As allowed by the Guidance on the Assessment of Investment Analysis (Version 5)[11], Equity Internal Rate of Return (IRR) was selected as the financial indicator to assess the attractiveness of the project.

Choice of Benchmark:

The project proponent has chosen Equity IRR as the financial indicator. As per para. 12 of EB62 Annex 5, "Required/expected returns on equity are appropriate benchmarks for an equity IRR". Hence the PP has appropriately chosen RoE as the benchmark for the project activity. Further as per Appendix of the same guideline, Default values for the expected return on equity for Group 1 projects in India has been taken. This value (11.75%) is expressed in percentages in real terms. Further as the financial analysis has been carried out in nominal terms, as per para. 7 of the Appendix, project participant has converted the real term values provided to nominal values by adding the inflation rate. As allowed by the guidance, the inflation rate has been obtained from the inflation forecast of the central bank of the host country for 10 year duration.

As per Section IV Selection and Validation of Appropriate Benchmarks, Point 15 of Guidelines on the assessment of the investment analysis (Version 05, EB 62), the value for cost of equity is selected from Appendix. The value of Return on Equity for Group-1 projects in India is 11.75%.

As per paragraph 7 of Appendix of the above mentioned document,
In situations where an investment analysis is carried out in nominal terms, project participants can convert the real term values provided in the table below to nominal values by adding the inflation rate. The inflation rate shall be obtained from **the inflation forecast of the central bank of the host country for the duration of the crediting period**. If this information is not available, the target inflation rate of the central bank shall be used. If this information is also not available, then the average forecasted inflation rate for the host country published by the IMF (International Monetary Fund World Economic Outlook) or the World Bank for the next five years after the start of the project activity shall be used.

Thus, the inflation forecast value has been considered as 6.00%[12] which is the forecasted value for the crediting period (available at the time of investment decision) published by the Central Bank (Reserve Bank of India) of the host country.

Thus, the benchmark is 11.75%+6.00%= 17.75%.

The key parameters used for calculation of the Equity IRR are tabulated below:

[11] http://cdm.unfccc.int/Reference/Guidclarif/reg/reg_guid03.pdf

[12] 10 Yr WPI Inflation (Median Values) as per Table 9: Long Term Median Forecasts for Growth and Inflation at http://rbi.org.in/scripts/PublicationsView.aspx?id=14021

Particulars	Value	Unit	Source
No. of wind turbines	30	Nos	Offer from Technology Supplier
Capacity of each wind turbine	1.5	MW	Technical Specifications
Capacity of the project	45	MW	Calculated
Net Generation	100.80	Million kWh	Wind Assessment Study by third party (Table 6, Pg.19)
Net PLF	25.57%	%	Calculated
Cost payable to Technology Supplier	102.00	INR Million Per WEG	Offer from Technology Supplier
Total Project cost	3,161.77	INR Million	Calculated
Debt	70%	INR Million	Pg 27, MERC RE tariff order_April 2011
Debt Contribution	2213.24	INR Million	Calculated
Equity Contribution	948.53	INR Million	Calculated
Operation and Maintenance Cost (first year)	0.726	INR Million per MW	Pg 30, MERC RE tariff order_April 2011
Operation and Maintenance Cost (first year)	32.67	INR Million	Calculated
Escalation in O & M	5.72%	%	Pg 30, MERC RE tariff order_April 2011
Working capital: O & M Expenses for 1 month	1	Month	Page 29, MERC RE Tariff Order_April 2011
Receivables equivalent to 2 Months of energy charges for sale of electricity	2	Month	Page 29, MERC RE Tariff Order_April 2011
Maintenance Charges	15.00%	% of O&M	Page 29, MERC RE Tariff Order_April 2011
Service Tax on O&M	12.36%	%	Indian IT Act for FY 12-13
Preferential Tariff	5.37	INR/kWh	Page 32, MERC RE Tariff Order_April 2011
Depreciation Rate (Companies Act) - Plant & Machinery	5.28%	%	Indian Companies Act
IT Depreciation Rate - Plant & Machinery	7.69%	%	Appendix IA of IT Rules
Income tax rate	33.22%	%	Indian IT Act
Interest rate	14.70%	%	Average BPLR for 5 Banks in the host country
Moratorium	0	year	Page 60, MERC RE Tariff Order_April 2011
Debt repayment	10	years	Page 60, MERC RE Tariff Order_April 2011
Salvage value	10%	%	Page 60, MERC RE Tariff Order_April 2011
MAT rate	20.01%	%	Indian IT Act for FY 12-13

With above mentioned assumptions, Equity IRR is 12.40%.

Sub-step 2c: Sensitivity Analysis:

As per guidance provided in the latest version of "Tool for the demonstration and assessment of additionality", the variables, including the initial investment cost, that constitute more than 20% of total project costs or total project revenues have been identified and subjected to a reasonable variation and the results of this variation have been presented below:

Change in net generation	+10.00%	0.00%	-10.00%	Break-Even Point	19%
Equity IRR	15.20%	12.40 %	9.64%		17.8%
Change in Preferential tariff	+10.00%	0.00%	-10.00%	Break-Even Point	19%
Equity IRR	15.20%	12.40 %	9.64%		17.8%
Change in O&M Cost	+10.00%	0.00%	-10.00%	Break-Even Point	-208%
Equity IRR	12.13%	12.40 %	12.67%		17.78 %
Change in Total Project Cost	+10.00%	0.00%	-10.00%	Break-Even Point	-18%
Equity IRR	10.13%	12.40 %	15.24%		18.13 %

It can be observed from above table that in various scenarios wherein there are changes in tariff, O&M cost, net generation and total project cost, the Equity IRR does not cross the benchmark. Thus, it can be concluded that revenue from sale of CERs is important to alleviate this gap and hence the project has been considered to be additional.

Break-Even analysis:
Apart from the sensitivity analysis, PP has also performed a break-even analysis which tests the scenarios under which the equity IRR would cross the estimated benchmark rate of return. The description on probability of occurrence of such scenarios is provided below:

1**. Change in net generation:** The break-even point would be achieved when the net generation increases by 19%. This translates into a net PLF of 30.43% which is an unrealistic PLF in the Maharashtra state. Further, the MERC tariff order 2011 which has been referred to by PP for tariff determination provides and indicative PLF/CUF of 20% for projects installed in Zone- regions. The PLF assumed by PP is already 30% higher than the aforementioned indicative PLF/CUF and hence there is no likelihood of the project's PLF/CUF to increase by another 20%

2. **Change in Preferential tariff:** The break-even point would be achieved when the preferential tariff increases by 19%. This scenario is not likely to occur as the preferential tariff is governed by the state tariff orders and is fixed for the long term, typically 20 years. Once the PPA is signed, the PP is bound to receive the tariff mentioned in the PPA for the lifetime of the project activity. In this case, PP has assumed the highest available tariff (that of Zone-I) as per MERC order, 2011 and there is no probability of the same increasing by 20% more during the lifetime of the project activity.

3. **Change in O&M Cost:** The break-even point would be achieved when the O&M cost decreases by 208%. O&M costs are typically fixed by long term agreements (say for 10 years). Due to inflation, the same are escalated year on year and hence there is no probability of the O&M cost decreasing by 208% and the equity IRR breaching the benchmark.

4. **Change in Total Project Cost:** The break-even point would be achieved when the Project cost decreases by 18%. The project cost has been assumed based on the offer received by from the technology supplier. The project cost has now been firmed up by signing legally binding agreements with the technology supplier. The firmed up project cost based on the signed Supply, Erection & Commissioning and Development agreements is INR 2835.0 Million. This is about 11% lesser than that estimated at the time of taking investment decision. Once this cost is firmed up, there is no probability of the same decreasing further. Hence, it is unlikely that the Project cost would decrease by 18%.

Step 4 – Common practice Analysis

In the context of the present project activity, the following parameters are defined in line with paragraphs 5 – 10 of this approved methodological tool:

Measure: The project activity falls under the following measure:
"(b) Switch of technology with or without change of energy source (including energy efficiency improvement as well as use of renewable energies);"

Output: As per paragraph 7, "power generation" may be considered to be the output in the context of the project activity. Further as per Step 1 of paragraph 47 of the same tool, the applicable output range will be 22.5 MW to 67.5 MW, i.e. ±50% of installed capacity of the project activity (45 MW)

As per paragraph 47 of the approved methodological tool, the following Stepwise approach has been followed by the project activity to demonstrate that it is not a Common Practice in the applicable geographical area:

Step 1: Calculate applicable output range as +/- 50% of the design output or capacity of the proposed project activity

The capacity of the project activity is 56 MW. The project capacity has been subject to the variation in the range of +/- 50%, the following table depicts the outcome of the variation applied. Hence, the applicable output range will be 22.5 MW to 67.5 MW, i.e. ±50% of installed capacity of the project activity.
Step 2: In the applicable geographical area, identify all plants that deliver the same output or capacity, within the applicable output range calculated in Step 1, as the proposed project activity and have started commercial operation before the start date of the project. Note their number Nall. Registered CDM project activities shall not be included in this step.

India has been considered applicable geographical area as a default, for the common practice analysis of project activity. All power plants generating electricity within the capacity range of 22.5 MW to 67.5 MW and having commercial operations date before project activity start date (30/03/2012)[13] have been considered in this analysis. The power generation plants identified in this step are hydro, thermal, nuclear, biomass based, solar and wind power projects. The total number of power plants in the applicable output range = 454.

Category of Power plants	**No. of Projects**
Thermal	156
Hydro	255
Wind	11
Nuclear	0
Solar	0
Biomass	32
Total (N_{all})	**454**

Therefore N_{all} =454.

Note: Registered CDM project activities have been excluded in this step .The spreadsheet containing the list of the plants identified has been provided separately to the DOE.

Step 3: Within plants identified in Step 2, identify those that apply technologies different that the technology applied in the proposed project activity. Note their number N_{diff}.

[13]In some cases, the latest publicly available data has been used. The complete list will be shared with the DOE during validation.

In accordance with Guidelines on Common practice following criterion has been used to arrive at the number of different technology power plants;

Different technologies in the context of the project activity:

Energy Source / Fuel
The project activity involves electricity generation from wind. The other project activities using water (Hydro, Biomass, Solar), conventional fuels (Coal, Lignite, Natural Gas & Liquid Fuel based – i.e. Thermal) as energy sources for the generation of electricity respectively are considered as plants with different technologies and included under N_{diff}.

The N_{diff} value is thus arrived at as tabulated below:

Category of Power plants	No. of Projects
Thermal	156
Hydro	255
Wind	0
Nuclear	0
Solar	0
Biomass	32
Total (N_{diff})	**443**

Step 4: Calculate factor $F=1-N_{diff}/N_{all}$ representing the share of plants using technology similar to the technology used in the proposed project activity in all plants that deliver the same output or capacity as the proposed project activity

Nall	454
Ndiff	443
Nall - Ndiff	11
F = 1-Ndiff/Nall	0.0242

The factor F and N_{all}-N_{diff} is calculated and following values are arrived at;
F = 0.0242;
N_{all}-N_{diff} = 11

As value of F is less than 0.2 so it can be concluded that the project activity is not a common practice in the applicable geographical area.

The above discussions show that wind power development is not a common practice in the applicable geographical area and the Project activity is not financially attractive; hence the Project activity is additional.

In view of the above, the PP had considered CDM as a source of additional revenue to improve financial viability of the project while deciding to make invest in the Project activity.

The chronology of events related to the Project activity and the efforts of the PP to secure CDM funding for the Project activity are summarized below:

Sr. No.	Event	Date
1.	Appointment of CDM Consultant	15/03/2012
2.	Signing of Agreement with Technology Supplier (Start Date)	30/03/2012
3.	Appointment of DoE	02/05/2012
4.	Prior Consideration of CDM – Intimation sent to UNFCCC and Host Country DNA	14/05/2012

	(MoEF, India)	
5.	Web hosting of PDD on UNFCC's website	17/05/2012
6.	Commissioning of Project Activity (expected)	By 30/11/2012

B.6. Estimation of emission reductions

B.6.1. Explanation of methodological choices

As per the approved consolidated Methodology ACM0002, version 19:

Baseline emissions include only CO_2 emissions from electricity generation in fossil fuel fired 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:

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

Where:

BE_y = Baseline emissions in year y (t CO_2/yr)

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

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

Note: Being greenfield project activity, the Quantity of net electricity generation that is produced and fed into the grid is represented as $EG_{PJ,y}$. However in the registered PDD & methodology the same had been represented as $EG_{facility,y}$. So in order to maintain the consistency $EG_{facility,y}$ has been used in the PPD Version 08. Thus, $EG_{PJ,y} = EG_{facility,y}$

As per methodology, combined grid emission factor as per the "Tool to calculate the emission factor for an electricity system" version 07 is calculated as below.

CO_2 Baseline Database for the Indian Power Sector, Version 14, December 2018[14] published by Central Electricity Authority (CEA), Government of India has been used for the calculation of emission reduction.

As per Methodological tool: Tool to calculate the emission factor for an electricity system (Version 07.0, EB 100, Annex 4), following six steps have been followed:

(a) **Step 1:** Identify the relevant electricity systems;

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

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

(d) **Step 4:** Calculate the operating margin emission factor according to the selected method;

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

[14] http://www.cea.nic.in/reports/others/thermal/tpece/cdm_co2/user_guide_ver14.pdf

(f) **Step 6:** Calculate the combined margin (CM) emission factor.

Step 1: Identify the relevant electricity systems

As described in tool "For determining the electricity emission factors, identify the relevant project electricity system. Similarly, identify any connected electricity systems". It also states that "If the DNA of the host country has published a delineation of the project electricity system and connected electricity systems, these delineations should be used". Keeping this into consideration, the Central Electricity Authority (CEA), Government of India has divided the Indian Power Sector into five regional grids viz. Northern, Eastern, Western, North-eastern and Southern.

However since August 2006, however, all regional grids except the Southern Grid had been integrated and were operating in synchronous mode, i.e. at same frequency. Consequently, the Northern, Eastern, Western and North-Eastern grids were treated as a single grid named as NEWNE grid from FY 2007-08 onwards for the purpose of this CO2 Baseline Database. As of 31 December 2013, the Southern grid has also been synchronised with the NEWNE grid, hence forming one unified Indian Grid. Since the project supplies electricity to the Indian grid, emissions generated due to the electricity generated by the Indian grid as per CM calculations will serve as the baseline for this project.

Table: Geographical Scope of Indian Electricity Grid

Northern	Eastern	Western	North-Eastern	Southern
Chandigarh	Bihar	Chhattisgarh	Arunachal Pradesh	Andhra Pradesh
Delhi	Jharkhand	Gujarat	Assam	Karnataka
Haryana	Orissa	Daman & Diu	Manipur	Kerala
Himachal Pradesh	West Bengal	Dadar& Nagar Haveli	Meghalaya	Tamil Nadu
Jammu & Kashmir	Sikkim	Madhya Pradesh	Mizoram	Telangana
Punjab	Andaman & Nicobar	**Maharashtra**	Nagaland	Puducherry
Rajasthan		Goa	Tripura	Lakshadweep
Uttar Pradesh				
Uttarakhand				

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

Project participants may choose between the following two options to calculate the operating margin and build margin emission factor:

Option I: Only grid power plants are included in the calculation.
Option II: Both grid power plants and off-grid power plants are included in the calculation.
The Project Participant has chosen only grid power plants in the calculation.

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

The calculation of the operating margin emission factor ($EF_{grid,OM,y}$) is based on one of the following methods, which are described under Step 4:

(a) Simple OM; or
(b) Simple adjusted OM; or
(c) Dispatch data analysis OM; or
(d) Average OM.

The data required to calculate Simple adjusted OM and Dispatch data analysis OM is not possible due to lack of availability of data to project developers. The choice of other two options for calculating operating margin emission factor depends on generation of electricity from low-cost/ must-run sources. In the context of the methodology low cost/must run resources typically include hydro, geothermal, wind, low cost biomass, nuclear and solar generation.

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

	2013-14	2014-15	2015-16	2016-17	2017-18
India	18.6%	16.8%	15.1%	14.6%	14.3%

Data Source: Central Electricity Authority (CEA) database Version 14, Dec 2018[15]

The above data clearly shows that the percentage of total grid generation by low-cost/ must-run plants (on the basis of average of five most recent years) for the Indian grid is less than 50 % of the total generation. Thus the Average OM method cannot be applied, as low cost/must run resources constitute less than 50% of total grid generation.

The simple OM emission factor is calculated as the generation-weighted average CO_2 emissions per unit net electricity generation (tCO_2/MWh) of all generating power plants serving the system, not including low-cost/must-run power plants/units.

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

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

OR

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

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

OM determined at validation stage will be the same throughout the crediting period. There will be no requirement to monitor & recalculate the emission factor during the crediting period.

Step 4: Calculate the operating margin emission factor ($EF_{grid,OMSimple,y}$) according to the selected method

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

Net Generation in Operating Margin (GWh) (incl. Imports)			
	2015-16	2016-17	2017-18

[15] http://www.cea.nic.in/reports/others/thermal/tpece/cdm_co2/user_guide_ver14.pdf

INDIAN Grid	871,753	916,278	960,693

Simple Operating Margin (tCO_2/MWh) (incl. Imports)			
	2015-16	**2016-17**	**2017-18**
INDIAN Grid	0.9655	0.9636	0.9543

Weighted Generation Operating Margin	
INDIAN Grid	**0.9610**

Step 5: Calculate the build margin (BM) emission factor ($EF_{grid,BM,y}$)

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

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

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

(b) **Option 2 -** For the first crediting period, the build margin emission factor shall be updated annually, ex post, including those units built up to the year of registration of the project activity or, if information up to the year of registration is not yet available, including those units built up to the latest year for which information is available. For the second crediting period, the build margin emissions factor shall be calculated ex ante, as described in Option 1 above. For the third crediting period, the build margin emission factor calculated for the second crediting period should be used.
Option 1 as described above is chosen by PP to calculate the build margin emission factor for the project activity. BM is calculated ex-ante based on the most recent information available at the time of submission of PD and is fixed for the entire crediting period.

Option 1 as described above is chosen by PP to calculate the build margin emission factor for the project activity. BM is calculated ex-ante based on the most recent information available at the time of submission of PD and is fixed for the entire crediting period.

Build Margin (tCO_2/MWh) (not adjusted for imports)	
	2017-18
INDIAN Grid	**0.8644**

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

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

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

(a) Weighted average CM; or
(b) Simplified CM.

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

The combined margin emissions factor is calculated as follows:

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

Where:

$EF_{grid,BM,y}$ = Build margin CO_2 emission factor in year y (t CO_2/MWh)
$EF_{grid,OM,y}$ = Operating margin CO_2 emission factor in year y (t CO_2/MWh)
W_{OM} = Weighting of operating margin emissions factor (per cent)
W_{BM} = Weighting of build margin emissions factor (per cent)

The following default values should be used for WOM and WBM:

Wind and solar power generation project activities: W_{OM} = 0.75 and W_{BM} = 0.25 (owing to their intermittent and non-dispatchable nature) for the first crediting period and for subsequent crediting periods. Since project activity is of wind power generation, the above weightage has been considered for OM and BM.

Therefore, $EF_{grid,CM,y}$ = 0.9610 * 0.75 + 0.8644 * 0.25
= 0.9368 tCO_2/MWh

Baseline emission factor (EF_y):

The baseline emission factor is calculated using the combined margin approach as described in Step 6 above:

Therefore, $EF_y = EF_{grid,CM,y}$ = 0.9368 tCO_2/MWh.

BE_y = 100,796 x 0.9368 = 94,425 tCO_2 during a given year y

B.6.2. Data and parameters fixed ex ante

Data/Parameter	$EF_{grid,BM,y}$
Data unit	tCO_2/MWh
Description	Build Margin CO_2 emission factor in year y
Source of data	Calculated from CEA database, Version 14, Dec 201816
Value(s) applied	0.8644
Choice of data or measurement methods and procedures	Calculated as per "Tool to calculate the emission factor for an electricity system, version 07" as per the latest data available for the most recent year 2017-18. The data is obtained from "CO_2 Baseline Database for Indian Power Sector" version 14, published by the Central Electricity Authority, Ministry of Power, and Government of India.
Purpose of data	For the calculation of the Baseline Emission
Additional comment	This parameter is fixed ex-ante for the entire crediting period.

[16] http://www.cea.nic.in/reports/others/thermal/tpece/cdm_co2/user_guide_ver14.pdf

Data/Parameter	$EF_{grid,OM,y}$
Data unit	tCO_2/MWh
Description	Operating Margin CO2 emission factor in year y
Source of data	Calculated from CEA database, Version 14, Dec 201817
Value(s) applied	0.9610
Choice of data or measurement methods and procedures	Calculated as per "Tool to calculate the emission factor for an electricity system, version 07" as 3-year generation weighted average using data for the years 2015-16, 2016-17 & 2017-18. The data are obtained from "CO_2 Baseline Database for Indian Power Sector" version 14, published by the Central Electricity Authority, Ministry of Power, Government of India.
Purpose of data	For the calculation of the Baseline Emission
Additional comment	This parameter is fixed ex-ante for the entire crediting period.

Data/Parameter	$EF_{grid,CM,y}$
Data unit	tCO_2/MWh
Description	Combined Margin CO_2 emission factor in year y
Source of data	Calculated from CEA database, Version 14, Dec 2018[18]
Value(s) applied	0.9368
Choice of data or measurement methods and procedures	The combined margin emissions factor is calculated as follows: $\mathbf{EF_{grid,CM,y} = EF_{grid,OM,y} * W_{OM} + EF_{grid,BM,y} * W_{BM}}$ Where: $EF_{grid,BM,y}$= Build margin CO_2 emission factor in year *y* (tCO_2/MWh) $EF_{grid,OM,y}$= Operating margin CO_2 emission factor in year *y* (tCO_2/MWh) W_{OM} = Weighting of operating margin emissions factor (%) = 75% W_{BM}= Weighting of build margin emissions factor (%) = 25%
Purpose of data	For the calculation of the Baseline Emission
Additional comment	This parameter is fixed ex-ante for the entire crediting period.

B.6.3. Ex ante calculation of emission reductions

Detailed Calculations:

Baseline emissions (BE_y)

The baseline emissions are to be calculated as follows:

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

Combined margin CO_2 emission factor for grid connected power generation ($EF_{grid,CM,y}$) is calculated as follows:

$EF_{grid,CM,y} = w_{OM} * EF_{grid,OM,y} + w_{BM} * EF_{grid,BM,y}$
$= 0.75 * 0.9610 + 0.25 * 0.8644$
$= 0.9368\ tCO_2e/MWh$

[17] http://www.cea.nic.in/reports/others/thermal/tpece/cdm_co2/user_guide_ver14.pdf

[18] http://www.cea.nic.in/reports/others/thermal/tpece/cdm_co2/user_guide_ver14.pdf

Thus for ex-ante emission reduction calculations, the baseline emission factor for the grid = 0.9368 tCO_2e/MWh

Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the CDM project activity ($EG_{PJ,y}$). The Quantity of net electricity generation that is produced and fed into the grid is represented as $EG_{PJ,y}$. However in the registered PDD the same had been represented as $EG_{facility,y.}$ So in order to maintain the consistency $EG_{facility,y}$ has been represented in section B.7.1.

$EG_{PJ,y} = EG_{facility,y.}$ = 100,796 MWh (As per Wind energy assessment report)

Hence, Baseline emissions are calculated as

BE_y = 100,796 * 0.9368
BE_y = 94,425 tCO2e

Project activity emissions
As per the applied methodology, for most renewable power generation project activities, $PE_y = 0$. Therefore, $PE_y = 0$ tCO_2e/annum

Overall emission reductions (ERy) are calculated as below:

$ER_y = BE\ y - PE\ y$
= 94,429-0
= 94,425 tCO_2e

B.6.4. Summary of ex ante estimates of emission reductions

Year	Baseline emissions (t CO_2e)	Project emissions (t CO_2e)	Leakage (t CO_2e)	Emission reductions (t CO_2e)
Year 1	94,425	0	0	94,425
Year 2	94,425	0	0	94,425
Year 3	94,425	0	0	94,425
Year 4	94,425	0	0	94,425
Year 5	94,425	0	0	94,425
Year 6	94,425	0	0	94,425
Year 7	94,425	0	0	94,425
Total	660,975	0	0	660,975
Total number of crediting years	7 years			
Annual average over the crediting period	94,425	0	0	94,425

B.7. Monitoring plan

B.7.1. Data and parameters to be monitored

Data/Parameter	$EG_{facility,y}$
Data unit	MWh/ year
Description	Quantity of net electricity generation supplied by the project plant/unit to the grid in year y
Source of data	Calculated
Value(s) applied	100,796 MWh
Measurement methods and procedures	Net electricity supplied will be calculated as the difference of electricity

	exported to and imported from the grid measured using the readings taken at the main/check meter installed at the respective feeders. The formula which will be used is as below: $EG_{facility,y} = \sum_{i=1}^{N} (EG_{export,i,y} - EG_{import,i,y})$ Note: In cases where there are other (non-project) WTGs connected to the same feeder, appropriate apportioning mechanism specified in PDD section B.7.2 shall be applied. Also for cases when the start/end dates of monitoring period do not match with the start/end dates of Joint Meter Reading Sheets / Generation reports issued by MSEDCL, appropriate apportioning mechanism specified in PDD section B.7.2 shall be applied.
Monitoring frequency	Continuous measurement and at least monthly recording
QA/QC procedures	Results can be cross checked with records for sold/purchased electricity (e.g., invoices raised by the PP to the electricity board/receipts received by the PP against the payments made by the electricity board). As this is a calculated parameter, no other QA/QC procedures would be required.
Purpose of data	Calculation of baseline emissions
Additional comment	The data will be kept for two years after the end of the crediting period or the last issuance of CERs for this project activity, whichever occurs later.

Data / Parameter	**$EG_{export,i,y}$**
Unit	MWh/ year
Description	Quantity of electricity exported by the Project WTGs connected to feeder i to the grid in period y
Source of data	Joint Meter Reading Sheets and generation report issued by Maharashtra State Electricity Distribution Co. Ltd. (MSEDCL) In cases where there are other (non-project) WTGs connected to the same feeder, appropriate apportioning mechanism specified in PDD section B.7.3 shall be applied. Also for cases when the start/end dates of monitoring period do not match with the start/end dates of Joint Meter Reading Sheets / Generation reports issued by MSEDCL, appropriate apportioning mechanism specified in PDD section B.7.3 shall be applied.
Value(s) applied	100,796 MWh
Measurement methods and procedures	The electricity generated and fed into the grid shall be monitored using energy meters (Main & Check meters). Meter Type: Static Recording: Electronic/ Paper Recording Frequency: Continuous monitoring and monthly recording Responsibility: The plant management shall be responsible for the regular recording of data. Testing Frequency: Once in three year Accuracy Class: 0.2S
Monitoring frequency	Continuous measurement and at least monthly recording
QA/QC procedures	The main meter readings can be cross checked with the check meter readings to ensure correctness. The main and check meters shall be calibrated and maintained by the state utility as per their own schedule but at least once in 3 years. The frequency of testing and calibration is not within the direct control of the Project Proponent.
Purpose of data	Calculation of baseline emissions
Additional comment	The data will be kept for two years after the end of the crediting period or the last issuance of CERs for this project activity, whichever occurs later.

Data / Parameter	$EG_{import,i,y}$
Unit	MWh/ year
Description	Quantity of electricity imported by the Project WTGs connected to feeder i from the grid in period y
Source of data	Joint Meter Reading Sheets and generation report issued by Maharashtra State Electricity Distribution Co. Ltd. (MSEDCL) In cases where there are other (non-project) WTGs connected to the same feeder, appropriate apportioning mechanism specified in PDD section B.7.3 shall be applied. Also for cases when the start/end dates of monitoring period do not match with the start/end dates of Joint Meter Reading Sheets / Generation reports issued by MSEDCL, appropriate apportioning mechanism specified in PDD section B.7.3 shall be applied.
Value(s) applied	0 MWh
Measurement methods and procedures	The electricity imported from the grid shall be monitored using energy meters (Main & Check meters). Meter Type: Static Recording: Electronic/ Paper Recording Frequency: Continuous monitoring and monthly recording Responsibility: The plant management shall be responsible for the regular recording of data. Testing Frequency: Once in three year Accuracy Class: 0.2S
Monitoring frequency	Continuous measurement and at least monthly recording
QA/QC procedures	The main meter readings can be cross checked with the check meter readings to ensure correctness. The main and check meters shall be calibrated and maintained by the state utility as per their own schedule but at least once in 3 years. The frequency of testing and calibration is not within the direct control of the Project Proponent.
Purpose of data	Calculation of baseline emissions
Additional comment	The data will be kept for two years after the end of the crediting period or the last issuance of CERs for this project activity, whichever occurs later.

Data / Parameter	$EG_{All\_controller,i,y}$
Unit	MWh
Description	Sum of Electricity generation measured by controllers of project and non -project WTGs connected to feeder i during period y
Source of data	Controllers meter readings of individual WTGs monitored at the Central Monitoring Station (CMS)
Value(s) applied	-

Measurement methods and procedures	This parameter would be used for calculation of EGfacility,y in cases where there are other (non-project) WTGs connected to the same feeder and also in cases when the start/end dates of monitoring period do not match with the start/end dates of Joint Meter Reading Sheets / Generation reports issued by MSEDCL. This parameter is the sum of electricity generated by WTGs connected to a particular feeder and will be measured by the inbuilt controller meters (also called LCS meters) located in each WTGs on a continuous basis. The readings will be recorded at the Central Monitoring Station (CMS) on a daily basis. O&M contactor will have the responsibility of monitoring this parameter. This value will be used in an appropriate apportioning formula specified in PDD section B.7.3
Monitoring frequency	Continuous measurement and at least monthly recording
QA/QC procedures	The LCS meters do not require calibration as the energy readings of electricity generated at the LCS meter is cross verified by the energy calculated by inverting system installed in the WTGs. In case there is any mismatch in the energy values recorded by the LCS meter and the energy values calculated by the inverting system; the machine will stop working and generate the error report. The project proponent does not have any control over the LCS meter readings of other project developers and therefore the values certified by the MSEDCL will be directly used for the purpose of calculating the electricity exports to the grid.
Purpose of data	Calculation of baseline emissions
Additional comment	The data will be kept for two years after the end of the crediting period or the last issuance of CERs for this project activity, whichever occurs later.

Data / Parameter	**$EG_{WTG\_controller,i,y}$**
Unit	MWh
Description	Sum of Electricity generation measured by controllers of all the project WTGs that are connected to feeder i during period y
Source of data	Controllers meter readings of project activity WTGs monitored at the Central Monitoring Station (CMS)
Value(s) applied	-
Measurement methods and procedures	This parameter would be used for calculation of $EG_{facility,y}$ in cases where there are other (non-project) WTGs connected to the same feeder and also in cases when the start/end dates of monitoring period do not match with the start/end dates of Joint Meter Reading Sheets / Generation reports issued by MSEDCL. This parameter is the sum of electricity generated by project WTGs connected to a particular feeder i and will be measured by the inbuilt controller meters (also called LCS meters) located in each WTGs on a continuous basis. The readings will be recorded at the Central Monitoring Station (CMS) on a daily basis. O&M contactor will have the responsibility of monitoring this parameter. This value will be used in an appropriate apportioning formula specified in PDD section B.7.3
Monitoring frequency	Continuous measurement and at least monthly recording
QA/QC procedures	The LCS meters do not require calibration as the energy readings of electricity generated at the LCS meter is cross verified by the energy calculated by inverting system installed in the WTGs. In case there is any mismatch in the energy values recorded by the LCS meter and the energy values calculated by the inverting system; the machine will stop working and generate the error report. The project proponent does not have any control over the LCS meter readings of other project developers and therefore the values certified by the MSEDCL will be directly used for the purpose of calculating the electricity exports to the grid.
Purpose of data	Calculation of baseline emissions

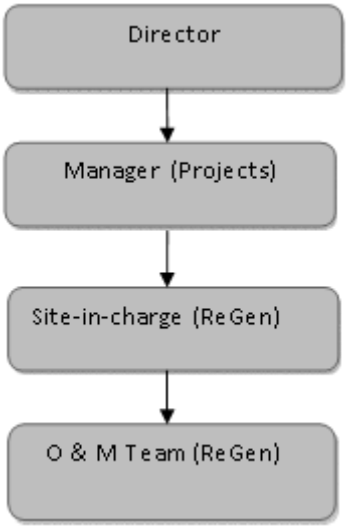
Additional comment	The data will be kept for two years after the end of the crediting period or the last issuance of CERs for this project activity, whichever occurs later.

B.7.2. Sampling plan

Since the data and parameters monitored in section B.7.1 above are not determined by a sampling Approach, the sampling plan is not provided.

B.7.3. Other elements of monitoring plan

In Monitoring &Verification protocol, the objective is to have clear, credible and accurate monitoring, evaluation and verification procedures. This involves recording, data collection of all wind turbines, metering of electricity generated at substation, on daily basis as well as on monthly basis. The general conditions for metering, recording, meter readings, meter inspections, Test & Checking and communication shall be as per the Power Purchase Agreement with the state utility.
The project proponent proposes following arrangements in order to carry out metering and O & M activities for all wind turbines:



Meter readings will be taken jointly at the appointed date by PP's representative, ReGen Powertech official and Discom officials. The same will be reported to the site-in-charge and the compiled reports will be sent to the Manager (Projects) and Director. The Manager will monitor overall activity of the project and report to the Director. As per O & M schedule, the operation and maintenance activities will be carried out by trained and qualified technical staff of ReGen Powertech.

The metering equipment at the sub-station (consisting of the Main Meter and the Check Meter) is of 0.2% accuracy class. The metering equipment is duly approved, tested and sealed by MSEDCL and is in complete control of Discom only. The meter readings are jointly certified by representatives of the State Grid/ discom and Regen Powertech Limited. However, it is the reading of the Main meter that is considered for billing & emission reduction purpose. After the main meter readings are checked and cleared by Discom authorities, the JMR readings (credit notes) are forwarded to the Circle office of the Discom.

Each party shall maintain complete and accurate records and all other data required by each of them for the purposes of proper administration and the operation of the project

Procedure for apportioning of electricity:

1. In case the start/end dates of monitoring period do not match with the start/end dates of Joint Meter Reading Sheets / Generation reports issued by Maharashtra State Electricity Distribution Co. Ltd. (MSEDCL), following apportioning procedure will be applied for the first and the last monitoring period within a particular crediting period:

Apportioning will be carried out based on ratio of generation data recorded using LCS installed at the WTG. The emission reductions of that particular period (between the start/end date of monitoring period and the end/start of the billing period) will be calculated based on percentage generation of that particular period at WTG using LCS data multiplied with the total units generated in the month as per the Joint Meter Reading Sheets / Generation report issued by Maharashtra State Electricity Distribution Co. Ltd. (MSEDCL). The calculation formula has been furnished below:

Generation from all project WTGs for the period y1= $EG_{WTG\_controller,y1}$
Generation from all project WTGs for the period y2 = $EG_{WTG\_controller,y2}$

Net energy supplied used for calculation of emission reduction for the monitoring period y1
i.e. $EG_{facility,y1}$ =

$$\sum_{i=1}^{N} ((EG_{export,i,y2} - EG_{import,i,y2}) * (EG_{WTG\_controller,i,y1} / EG_{WTG\_controller,i,y2}))$$

Where:
y1 = No. of days within a billing period up to which generation is considered for emission reduction calculation
y2 = No. of days in the billing period
N = No. of feeders to which project WTGs are connected to.

2. In case if there are project and non-project WTGs connected to a particular feeder i, the quantity of net electricity supplied by project WTGs to the grid connected to that particular feeder will be calculated based on the formula specified below:

Total generation from all project WTG(s) connected to the feeder i in period y = $EG_{WTG\_controller,i,y}$
Total generation from all project and non-project WTGs connected to the feeder i in period y
= $EG_{All\_controller,i,y}$

Quantity of electricity exported by all (project and non-project) WTGs connected to feeder i to the grid in period y= $EG_{export,i,y}$

Quantity of electricity imported by all (project and non-project) WTGs connected to feeder i to the grid in period y = $EG_{import,i,y}$

Net electricity supplied by the project WTGs connected to feeder i to the grid in period y
$EG_{facility,y}$ =

$$\sum_{i=1}^{N} ((EG_{export,i,y} - EG_{import,i,y}) * (EG_{WTG\_controller,i,y} / EG_{All\_controller,i,y}))$$

Where:
N = No. of feeders to which project WTGs are connected to.

3. In cases where both scenarios mentioned above exist at the same time (i.e. both project and no project WTGs connected to the same feeder(s) and the start/end date of the monitoring periods do not match with those of the JMR readings), firstly the apportioning as per point # 2 above will be applied for the billing period y2 to estimate the Net electricity supplied by the project WTGs connected to feeder i to the grid in period y2. Then this value would replace ($EG_{export,y2}$ - $EG_{import,y2}$) in the formula specified in point # 1 to arrive at the Net energy export used for calculation of emission reduction for the monitoring period y1.

Emergency Preparedness:

In case of failure of the main meter, it would be replaced immediately and the meter would be sent for testing and generation reading would be sourced from the check meter. If both main and check

meters fail, they would be sent for testing and during testing of the meters, one of the following two scenarios would occur and the generation values would be taken as per the scenarios:

Scenario 1

Failure of the meters such that the generation values are not affected and can be retrieved using alternative methods (e.g., failure of the display of the meter) - If such a scenario is observed during the testing of the meters, the generation values would be taken as recorded and no correction would be applied.

Scenario 2

Failure of the meters which affects the generation values and the readings recorded by the meters are deemed to be faulty - If such a scenario is observed during testing of the meters and the exact date of the failure can be determined, then the emission reductions would be calculated by applying an error factor (as per EB 52, Annex 60) to the generation values from the determined date of failure of the meters till the date of meter replacement.

If the exact date of the failure cannot be determined, then the emission reductions would be calculated by applying an error factor (as per EB 52, Annex 60) to the generation values from the date of last calibration of the meter till the date of meter replacement.

The O&M service provider (Regen Powertech) would be responsible for maintenance of the necessary spare parts for the maintenance of the wind turbines such as anemometers, wind vanes and sensors, oil filters, batteries, auxiliary motors and pumps, controllers, slip rings, limit switches and sensors, detergents & solvents etc. The service provider would also be responsible for supply of necessary main components of the WTG such as main gearboxes, blades, generators, towers, hubs, main shafts & bearings, ground and top controller and hydraulic systems. The service provider would also ensure that occupational health and safety procedures would be followed during the operation & maintenance activities.

SECTION C. Start date, crediting period type and duration

C.1. Start date of project activity

30/03/2012 (Date of signing of Supply Agreement with Technology Supplier)

C.2. Expected operational lifetime of project activity

20 years-0 months

C.3. Crediting period of project activity

C.3.1. Type of crediting period

PP has chosen a renewable crediting period. This is the Second crediting period.

C.3.2. Start date of crediting period

Renewed start date of crediting period: 15/12/2019 (Inclusive of the date)
Previous crediting period: 15/12/2012 to 14/12/2019

C.3.3. Duration of crediting period

7 years- 0 months

SECTION D. Environmental impacts

D.1. Analysis of environmental impacts

As per the Schedule 1 of the EIA notification dated 1/12/2009[19], given by the Ministry of Environment and Forests under the Environment (Protection) Act 1986, the proposed Project activity does not fall under the list of activities requiring EIA as the environmental impacts for such project are not considered as significant by the host Party or Project Proponent.

D.2. Environmental impact assessment

Not applicable as the environmental impacts for such project are not considered as significant by the host Party or Project Proponent.

SECTION E. Local stakeholder consultation

E.1. Modalities for local stakeholder consultation

The PP's had identified stakeholders for their wind power project near Vaspet in Maharashtra. The meeting was conducted on 27/04/2012 at Jath (Uma Institute), Vaspet.

Following stakeholders were invited via personal invitation letters.

1. Representatives from ReGen Powertech
2. Employees of PP
3. Local Villagers from nearby villages
4. Panchayat members
5. Site workers/operators

Above identified stakeholders were invited for meeting through personal invitation letters. These letters were sent on 11/04/2012.

E.2. Summary of comments received

Meeting started with opening speech by Col C.V.Brid, Admin Head at ReGen. He introduced all guest on dais. Followed by Mr.Kishor Rathod who then explained (In Local Language Marathi) about Technical aspects of Project to stakeholders. He also explained about social, environmental & economical benefits of Project. He also elaborated about CDM & its requirement. After detailed elaboration on Project, question answer session held where question/queries/doubts raised by stakeholders responded by guests on Dais.

Question	Asked By	Response By	Answer/Response
What is the technical life of the machines?	Mr. Zende	Mr. Shinde (Rege)	About 20 years
What will company do with the land after the project's lifetime?	Mr. Zende	Mr. Shinde (Regen)	Company may install new machines
Have you received NOC from Gram Panchayat?	Mr.Rajaram Dabae (Sarpanch-Kaledhon)	Mr.Kishor Rathod	Yes
Who will pay Gram-Panchayat tax?	Mr.Tukarm Khade (Gramsevk)	Col.C.V.Brid	ReGen as a developer will pay all Grampanchyat taxes.

[19] http://moef.nic.in/downloads/rules-and-regulations/3067.pdf

Are there any effects of wind mills on Rain pattern?	Mr.Dipak Nalawade	Mr.Kishor Rathod	No, This is the common misunderstanding found across many villages. Wind mills only utilize wind speed for generation of power & does not affect any other ecological/climate parameters.

Overall, the local villagers have given very positive response. They are one of the direct as well as indirect beneficiaries of the project. The construction and continuous operation of the project is providing employment opportunities for them. They have also express their support to project as it does not require any major displacement nor create any inconvenience to the local population. Wind being clean technology this will help in bridging the gap of power demand & generation with no pollution.

E.3. Consideration of comments received

There was no negative feedback from any of the stakeholders. Hence, there is no need to take due account of the comments.

SECTION F. Approval and authorization

The letter of approval from the host country Designated National Authority (DNA) for the project activity is not available at the time of submitting the PDD to the validating DOE. The same will be shared with the DOE on receipt during the project's validation cycle.

Appendix 1. Contact information of project participants

Organization name	ReNew Wind Energy Delhi Private Limited and and ReNew Wind Energy (Rajkot) Private Limited
Country	India
Address	Street/P.O. Box :MG Road, Building :601-604 6th Floor DLF Corporate Park, City :Gurgaon, State/Region :Haryana, Postcode :122001
Telephone	+91- 124 – 4896670/80
Fax	
E-mail	parag@renewpower.in
Website	http://renewpower.in/
Contact person	Mr. Parag Sharma

Appendix 2. Affirmation regarding public funding

There is no public funding involved from parties included in the Annex I for the implementation of the Project activity.

Appendix 3. Applicability of methodologies and standardized baselines

Refer section B.2 of the PDD.

Appendix 4. Further background information on ex ante calculation of emission reductions

Refer to PDD section B.6.3 for further information on ex ante calculation of emission reductions

Appendix 5. Further background information on monitoring plan

Refer to PDD section B.7.3 for information on monitoring plan

Appendix 6. Summary report of comments received from local stakeholders

Please refer to Section E.2 of the PDD

Appendix 7. Summary of post-registration changes

Not applicable

Document information

Version	*Date*	*Description*
11.0	31 May 2019	Revision to: • Ensure consistency with version 02.0 of the "CDM project standard for project activities" (CDM-EB93-A04-STAN); • Make editorial improvements.
10.1	28 June 2017	Revision to make editorial improvement.
10.0	7 June 2017	Revision to: • Improve consistency with the "CDM project standard for project activities" and with the PoA-DD and CPA-DD forms; • Make editorial improvement.
09.0	24 May 2017	Revision to: • Ensure consistency with the "CDM project standard for project activities" (CDM-EB93-A04-STAN) (version 01.0); • Incorporate the "Project design document form for small-scale CDM project activities" (CDM-SSC-PDD-FORM); • Make editorial improvement.
08.0	22 July 2016	EB 90, Annex 1 Revision to include provisions related to automatically additional project activities.
07.0	15 April 2016	Revision to ensure consistency with the "Standard: Applicability of sectoral scopes" (CDM-EB88-A04-STAN) (version 01.0).
06.0	9 March 2015	Revision to: • Include provisions related to statement on erroneous inclusion of a CPA; • Include provisions related to delayed submission of a monitoring plan; • Provisions related to local stakeholder consultation; • Provisions related to the Host Party; • Make editorial improvement.
05.0	25 June 2014	Revision to: • Include the Attachment: Instructions for filling out the project design document form for CDM project activities (these instructions supersede the "Guidelines for completing the project design document form" (Version 01.0)); • Include provisions related to standardized baselines; • Add contact information on a responsible person(s)/ entity(ies) for the application of the methodology (ies) to the project activity in B.7.4 and Appendix 1; • Change the reference number from F-CDM-PDD to CDM-PDD-FORM; • Make editorial improvement.

Version	*Date*	*Description*
04.1	11 April 2012	Editorial revision to change version 02 line in history box from Annex 06 to Annex 06b.
04.0	13 March 2012	Revision required to ensure consistency with the "Guidelines for completing the project design document form for CDM project activities" (EB 66, Annex 8).
03.0	26 July 2006	EB 25, Annex 15
02.0	14 June 2004	EB 14, Annex 06b
01.0	03 August 2002	EB 05, Paragraph 12 Initial adoption.

Decision Class: Regulatory
Document Type: Form
Business Function: Registration
Keywords: project activities, project design document