CLEAN DEVELOPMENT MECHANISM
PROJECT DESIGN DOCUMENT FORM (CDM-PDD)
Version 03 - in effect as of: 28 July 2006

CONTENTS

SECTION A. General description of project activity

A.1. Title of the project activity:

>>
Sinner wind power project in Maharashtra.
Version number: 03
Date: 24/12/2012

A.2. Description of the project activity:

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Purpose of the project:
M/s Bindu Vayu Urja Private Limited is setting up a 29.4 MW Wind Power Plant in Sinner, in the state of Maharashtra in India. The main purpose of the project is to generate electricity using wind energy.

Scenario existing prior to project activity:
The project is a green field wind energy project. Hence there was no existing facility before the project. In absence of the project, an equivalent amount of electricity would be consumed from the grid which is dominated by thermal based power plants.

The project scenario:
The project would be using 14 Wind Turbine Generators of Suzlon (Model no: S95) each with capacity of 2.1 MW. The project would be generating around 44,220 MWh of electricity per annum. The electricity would be exported to the Maharashtra State Electricity Distribution Company Limited. The clean electricity generated from the project would aid in sustainable development of that region. It would also help in reducing green house gas emissions by generating clean and green electricity.

Contribution towards Sustainable Development
Ministry of Environment and Forests, Govt. of India has specified the social well being, economic well being, environmental well being and technological well being as the four indicators for sustainable development in host country approval eligibility criteria for Clean Development Mechanism (CDM) projects.

Social Well Being
The project activity will generate many direct and indirect employment opportunities. During construction period, the skilled and unskilled labourers will be required. The operation of this plant also creates new employment opportunities for the region. It will increase income security of vulnerable sections of the rural communities in the vicinity of the project site through redistribution of benefits on account of the new direct and indirect employment opportunities associated with the project. The project activity will indirectly help in infrastructure development in the neighbouring villages like better roads, telecommunication etc.
BVUPL will use at a minimum, 2% of the revenues accrued from the sale of Certified Emission Reductions (CERs) on an annual basis for community related activities. These may include providing assistance for development of public amenities in the surrounding areas such as water distribution/sanitation facilities/building of School and Hospital/ free distribution of educational books and school uniforms/annual eye camps/health check up centres for villagers etc. However the exact activity would be discussed with Village Panchayat and would subsequently be finalized.

If the activity undertaken involves capital expenditure exceeding the minimum requirement of 2%, the additional expenditure made would be set off against the requirements for the subsequent years. Such expenditure would be made within one year after the realization of revenues from the sale of the CERs.

Environmental Well Being
The electricity generated by the project activity will be supplied to NEWNE grid, which otherwise would have been generated by fossil fuel fired power plants in the grid. The project activity will help in reduction of the greenhouse gas emissions and air pollutants (especially NOx and SO2).

The project activity also helps in conservation of depleting fossil fuels such as coal, oil, natural gas which at present are predominantly used for power generation. The project activity being wind power project will have minimum environmental impact.

Economic Well Being
The construction of the windpower projectwill create employment opportunities and may create opportunities for the allied sectors that supply services to the local population that is expected to increase once the project is operational. This will eventually raise the economic standards of the people residing near the project activity.

Technological Well Being
The project activity will be making use of the reliable and proven technology available locally to ensure that only an environmentally safe technology is being implemented in the proposed project activity.
There would be no transfer of technology taking place.

A.3. Project participants:

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Name of Party involved (*) (host) indicates a Host Party)	**Private and/or public entity(ies) project participants (*) (as applicable)**	**Kindly indicate if the Party involved wishes to be considered as project participant (Yes/No)**
India (Host Country)	M/s Bindu Vayu Urja Private Limited (BVUPL) (Private entity)	No

A.4. Technical description of the project activity:

A.4.1. Location of the project activity:

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A.4.1.1. Host Party(ies):

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India

A.4.1.2. Region/State/Province etc.:

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Maharashtra.

A.4.1.3. City/Town/Community etc.:

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Sinner, Maharashtra

A.4.1.4. Details of physical location, including information allowing the unique identification of this project activity (maximum one page):

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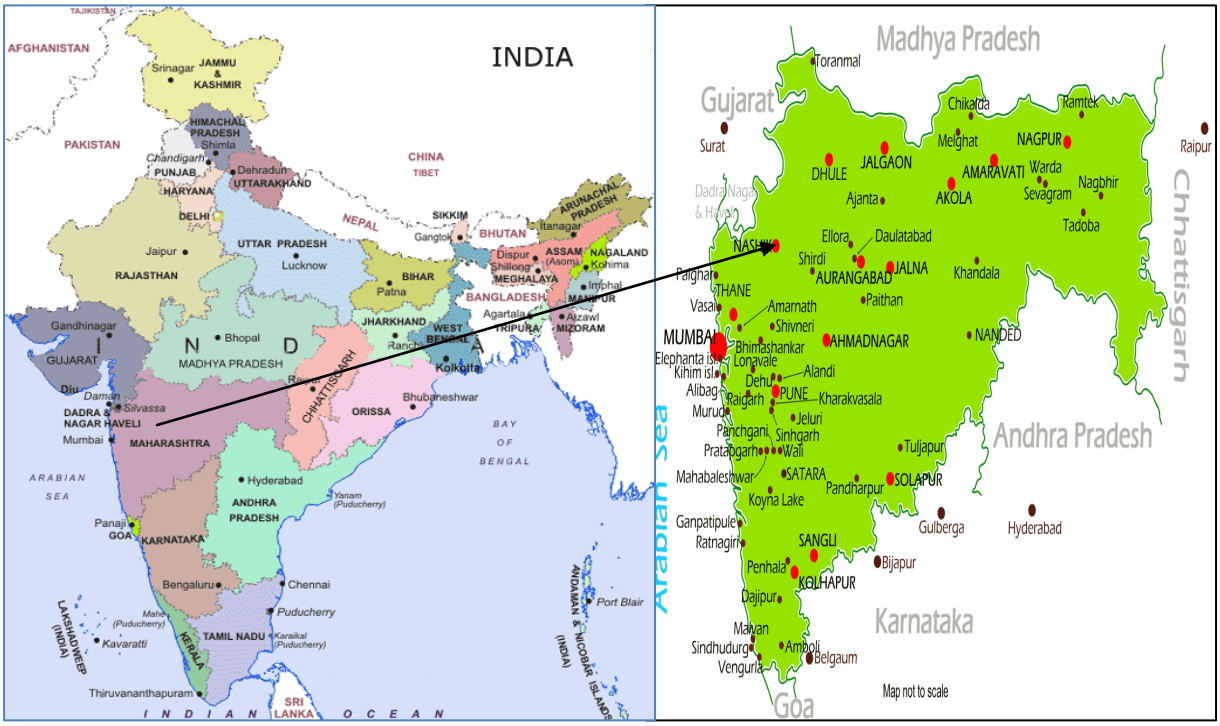
The project is located in Sinner village in Nashik district, in the state of Maharashtra in India



The project consists of 14 WTGs of 2.1 MW each. The latitude and longitude of each WTG is given below:

Sl.No	WTG-No	State	Longitude	Latitude
1	ADW-06	Maharashtra	19° 42´ 47.89″	73° 54´ 12.71″
2	ADW-07	Maharashtra	19° 42´ 37.7″	73° 54´ 27.87″
3	ADW-09	Maharashtra	19° 43´ 13.9″	73° 58´ 5.2″
4	ADW-10	Maharashtra	19° 43´ 25.4″	73° 58´ 0.3″
5	ADW-11	Maharashtra	19° 43´ 50.5″	73° 58´ 20.6″
6	ADW-12	Maharashtra	19° 44´ 1.7″	73° 58´ 16.1″
7	ADW-28	Maharashtra	19° 43´ 31.7″	74° 0´ 13.3″
8	ADW-29	Maharashtra	19° 43´ 19.7″	74° 0´ 18.4″
9	ADW-30	Maharashtra	19° 43´ 6.9″	74° 0´ 20.9″
10	ADW-39	Maharashtra	19° 43´ 36.58″	73° 57´ 56.29″
11	S01	Maharashtra	19° 51´48.62″	73° 55´ 45.31″
12	S03	Maharashtra	19° 51´26.34″	73° 55´ 45.94″
13	S04	Maharashtra	19° 51´37.33″	73° 55´ 44.77″
14	S023	Maharashtra	19° 49´0.8″	73° 55´ 16.5″

A.4.2. Category(ies) of project activity:

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The project activity falls under the category described under CDM as "Sectoral Scope Number 1: Energy Industries – Renewable Sources[1]

A.4.3. Technology to be employed by the project activity:

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Pre project scenario:

The project is a greenfield project. In absence of the project an equivalent amount of electricity would have been consumed from the NEWNE grid, which is connected to fossil fuel based power plants.

Technology employed in baseline scenario:

In the absence of the project activity, equivalent energy would be generated in power plants connected to the NEWNE Grid of India. Details on grid-connected power plants are given in the CEA CO2 baseline database (Version 7), based on which the combined margin emission factor is determined.

Technology employed in project scenario:

Power generation using wind is achieved by deploying sixteen wind turbine generators (WTGs). Wind power generation is an environmentally safe and sound technology. The WTGs are supplied by Suzlon Energy Limited to the project participant. The components are manufactured in India and assembled at the project site. There is no transfer of technology from outside the host country for this project activity.

[1] http://cdm.unfccc.int/DOE/scopes.html

TheS95- 2.1 MW is best suited to Class IIA medium wind speed sites. Most windsaroundthe world fall in this class.
Technical specifications of the WTGs are detailed below:

OPERATING DATA	
Rated power	2100 kw
Rotor speed	12.1 to 17.6 rpm
Power regulation	Active pitch regulated
Cut-in wind speed	3.5 metre/second
Rated wind speed	11 metre/second
Cut-off wind speed	25 metre/second
Restart wind speed	23 metre/second
Wind class	IEC IIA
Estimated service life	20 years
Ambient temperature range-operation	-10° to + 40°C
A factor	9.59 m/s
ROTOR DATA	
Diameter	95 metre
Rotor cone angle	5°
Rotor speed at rated power	15.83 rpm
Tip speed at rated power	78.7 m/s
Swept area	7085 metre^2
BLADES	
Type	SUZLON SB46
Length	46.3 m
Material	Glass fibre reinforced plastic / Epoxy
Type of aerodynamic brake	
GENERATOR	
Type	Asynchronous 3 phase induction generator with slip rings operated with rotor circuit inverter system.
Rated power	2.1 MW
Number of poles/Synchronous speed	4/1500 rpm
Frequency	50 Hz
Rated generator speed	1568 rpm
TOWER	
Type	Tubular steel tower
Tower Height	80m

In the absence of the project activity, equivalent energy would be generated in power plants connected to the NEWNE Grid of India. Details on grid-connected power plants are given in the CEA CO2 baseline database (Version 7), based on which the combined margin emission factor is determined.

A.4.4. Estimated amount of emission reductions over the chosen crediting period:

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Years	**Annual estimation of emission reductions in tonnes of CO2 e**
2013-2014	54274
2014-2015	54274
2015-2016	54274
2016-2017	54274
2017-2018	54274
2018-2019	54274
2019-2020	54274
2020-2021	54274
2021-2022	54274
2022-2023	54274
Total estimated reductions (tonnes of CO2 e)	542740
Total number of crediting years	**10**
Annual average over the crediting period of estimated reductions (tonnes of CO_2 e)	54274

A.4.5. Public funding of the project activity:

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No public funding has been availed for this project.

SECTION B. Application of a baseline and monitoring methodology

B.1. Title and reference of the approved baseline and monitoring methodology applied to the project activity:

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Title: "Consolidated baseline methodology for grid-connected electricity generation from renewable sources"

Reference: Approved consolidated baseline methodology ACM0002 (Version 12.3.0, EB 66)

ACM0002 draws upon the following tools which have been used in the PDD:

- Tool to calculate the emission factor for an electricity system – Version 2.2.1 (EB 63 annex 19)
- Tool for the demonstration and assessment of additionality – Version 6.0.0 (EB 65 annex 21)

Further information with regards to the methodology / tools can be obtained at:
http://cdm.unfccc.int/methodologies/DB/C505BVV9P8VSNNV3LTK1BP3OR24Y5L

B.2. Justification of the choice of the methodology and why it is applicable to the project activity:

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The project activity is wind based renewable energy source, zero emission power project connected to the Maharashtra state grid, which forms part of the NEWNE regional electricity grid. The project activity will displace fossil fuel based electricity generation that would have otherwise been provided by the operation and expansion of the fossil fuel based power plants in NEWNE electricity grid. The approved consolidated baseline and monitoring methodology ACM0002 Version 12.3.0 is the choice of the baseline and monitoring methodology and it is applicable because:

Serial number	Applicability condition of ACM0002	Applicability of project
1	This methodology is applicable to grid-connected renewable power generation project activities that (a) install a new power plant at a site where no renewable power plant was operated prior to the implementation of the project activity (greenfield plant); (b) involve a capacity addition; (c) involve a retrofit of (an) existing plant(s); or (d) involve a replacement of (an) existing plant(s).	The project is grid-connected renewable power generation project activities that install a new power plant at a site where no renewable power plant was operated prior to the implementation of the project activity. Therefore, confirms to clause (a) of the said criteria.
2	The project activity is the installation, capacity addition, retrofit or replacement of a power plant/unit of one of the following types: hydro power plant/unit (either with a run-of-river reservoir or an accumulation reservoir), wind power plant/unit, geothermal power plant/unit, solar power plant/unit,	The project is the installation of a green field wind energy generation project. Hence this criteria is satisfied.

	wave power plant/unit or tidal power plant/unit;	
3	In the case of capacity additions, retrofits or replacements (except for capacity addition projects for which the electricity generation of the existing power plant(s) or unit(s) is not affected): 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 addition or retrofit of the plant has been undertaken between the start of this minimum historical reference period and the implementation of the project activity;	Not applicable to the project as it is not a capacity addition or retrofit project.
4	In case of hydro power plants: • At least one of the following conditions must apply: ➢ The project activity is implemented in an existing single or multiple reservoirs, with no change in the volume of any of the reservoirs; or ➢ 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 after the implementation of the project activity; or ➢ The project activity results in new single or multiple reservoirs and the power density of each reservoir, as per the definitions given in the Project Emissions section, is greater than 4 W/m2 after the implementation of the project activity. In case of hydro power plants using multiple reservoirs where the power density of any of the reservoirs is lower than 4 W/m2 after the implementation of the project activity all of the following conditions must apply: The power density calculated for the entire project activity using equation 5 is greater	Not applicable to the project case as the project is not a hydro power project.

	than 4 W/m2; ➢ All reservoirs and hydro power plants are located at the same river and were designed together to function as an integrated project1 that collectively constitutes the generation capacity of the combined power plant; ➢ The water flow between the multiple reservoirs is not used by any other hydropower unit which is not a part of the project activity; ➢ The total installed capacity of the power units, which are driven using water from the reservoirs with a power density lower than 4 W/m2, is lower than 15 MW; ➢ The total installed capacity of the power units, which are driven using water from reservoirs with a power density lower than 4 W/m2, is less than 10% of the total installed capacity of the project activity from multiple reservoirs.	
5	The methodology is not applicable to thefollowing: ➢ 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 ➢ Biomass fired power plants; A hydro power plant that results in the creation of a new single reservoir or in the increase in an existing single reservoir where the power density of the reservoir is less than 4 W/m2	The project is a wind power project hence the applicability of the methodology is not affected.
6	In the case of retrofits, 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	This is not applicable to the project as this is not a retrofit project.

	current situation, i.e. to use the power generation equipment that was already in use prior to the implementation of the project activity and undertaking business as usual maintenance. In addition, the applicability conditions included in the tools referred to above apply.	

B.3. Description of the sources and gases included in the project boundary:

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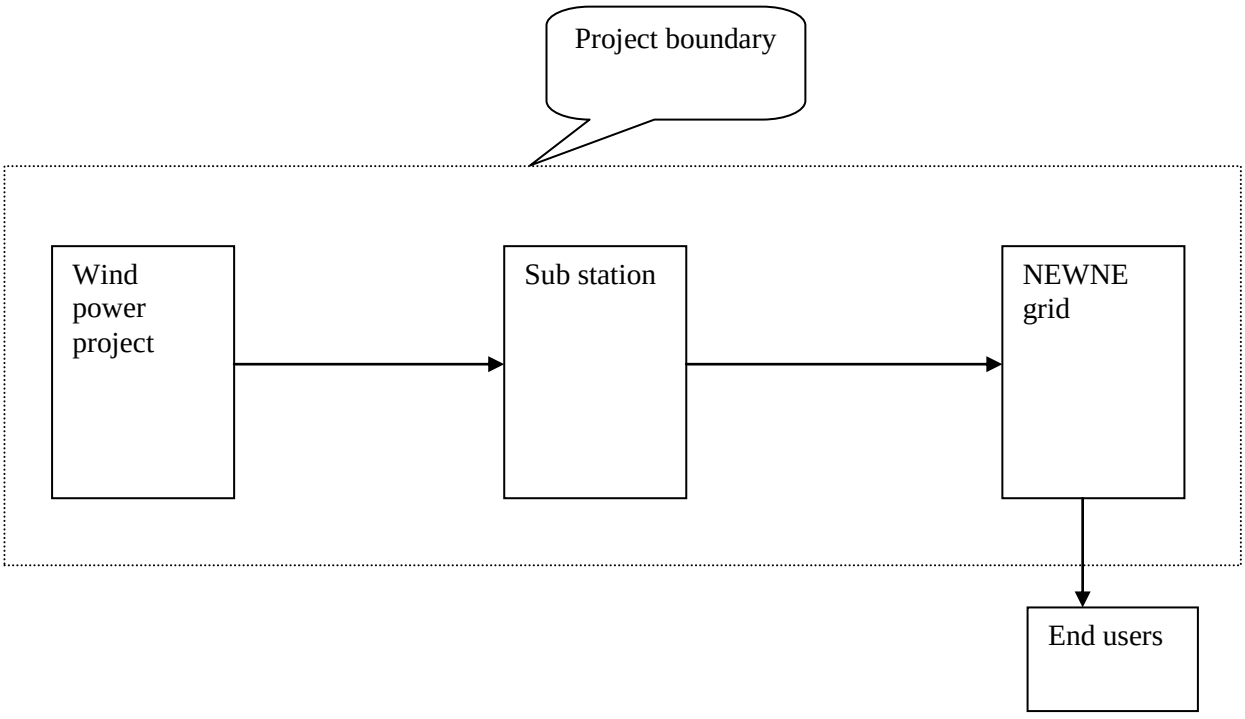
According to the applicable methodology, spatial extent of this project activity includes the project site and all the power plants connected physically to the electricity system that the CDM power project is connected to. The project activity is connected to the network of state transmission utility which falls in NEWNE grid. Thus the project boundary includes all the power plants physically connected to the NEWNE grid.

Schematic of the Project Boundary is given below:



The baseline study of NEWNE grid shows that the main sources of GHG emissions in the baseline are CO2 emissions from the conventional power generating systems, the other emissions are that of CH4 and N2O but both emissions were conservative and are excluded for simplification of the project. The project activity is the emission free electricity generation from renewable sources and hence emits no gases in the atmosphere.

Following table indicates the sources and gases included in the project boundary:

Source		Gas	Included?	Justification / Explanation
Baseline	Grid connected electricity generation	CO_2	Yes	In the baseline scenario the electricity would have been sourced from the NEWNE grid which in turn would be connected to fossil fuel fired power plants which emit CO2.Main emission source
		CH_4	No	No methane generation is expected to be emitted.
		N_2O	No	No nitrous oxide generation is expected to be emitted. Minor emission source
Project activity	Greenfield wind energy conversion System	CO_2	No	The project activity does not emit any emissions.
		CH_4	No	No methane generation is expected to be emitted.
		N_2O	No	No nitrous oxide generation is expected to beemitted.

B.4. Description of how the baseline scenario is identified and description of the identified baseline scenario:

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According to the applied methodology ACM0002, if the project activity is the installation of a new grid-connected renewable power plant/ unit, the baseline scenario is the following:
"Electricity delivered to the grid by the project would have otherwise been generated by the operation of Grid-connected power plants and by the addition of new generation sources, as reflected in the combined margin (CM) calculations described in the "Tool to calculate the emission factor for an electricity system – Version 2.2.1".

The proposed project activity is the installation of 14 WEC's of Suzlon's make S95of 2.1 MW each contributing 29.4 MW of power to the NEWNE grid; the project activity is the installation of a new grid connected power plant hence as per the applied methodology the baseline scenario is the emissions 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 Section B.6 of the PDD.
The Indian grid system is defined below:

Electricity Grid (Present)	Electricity Grid (Earlier)	Geographical Areas Covered
NEWNE Grid	Northern	Chandigarh, Delhi, Haryana, Himachal Pradesh, Jammu and Kashmir, Punjab, Rajasthan, Uttar Pradesh, Uttarakhand
	Western	Chhattisgarh, Gujarat, Daman & Diu, Dadar & Nagar Haveli, Madhya Pradesh, Maharashtra, Goa
	Eastern	Bihar, Jharkhand, Orissa, West Bengal, Sikkim, Andaman-Nicobar
	North-Eastern	Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Tripura
Southern Grid	Southern	Andhra Pradesh, Karnataka, Kerala, Tamil Nadu, Pondicherry, Lakshadweep

Maharashtra state falls under NEWNE grid.
The installed electricity in India as on 31st August, 2011 is given below.[2]

[2] http://www.cea.nic.in/reports/monthly/executive_rep/aug11/8.pdf

SL. NO.	REGION	THERMAL				Nuclear	HYDRO (Renewable)	R.E.S.@ (MNRE)	TOTAL
		COAL	GAS	DSL	TOTAL				
1	Northern	24232.50	4134.76	12.99	28380.25	1620.00	14422.75	3509.56	47932.56
2	Western	33105.50	7903.81	17.48	41026.79	1840.00	7447.50	5937.60	56251.89
3	Southern	20982.50	4690.78	939.32	26612.60	1320.00	11338.03	10128.96	49399.59
4	Eastern	21122.88	190.00	17.20	21330.08	0.00	3882.12	356.42	25568.62
5	N. Eastern	60.00	787.00	142.74	989.74	0.00	1116.00	223.60	2329.34
6	Islands	0.00	0.00	70.02	70.02	0.00	0.00	6.10	76.12
7	All India	99503.38	17706.35	1199.75	118409.48	4780.00	38206.40	20162.24	181558.12

It is evident from the above table that the installed capacity in India is predominantly thermal power plants; thermal power generation is GHG intensive and is a major source of CO2 emissions. In the absence of the project activity equivalent amount of electricity would have been generated from the existing grid connected power plants and planned capacity additions which are also largely fossil fuel based. Thus generation from the project displaces the electricity generated from existing and planned power plant capacities in the NEWNE grid whose emission intensities are represented by the Combined Margin Emission Factor of the NEWNE Grid. The project activity would reduce 54274 tCO2 e annually.

The baseline emissions and emission reductions from the project activity are estimated by multiplying the amount of electricity exported by the project activity to the NEWNE grid with the emission factor of the NEWNE grid calculated as the combined margin (CM) of the operating margin (OM) and build margin (BM) emission factors.

Variable	**Data source**
$EG_{PJ\_Add,y}$	Records maintained by project proponents
Parameter	**Data Source**
$EF_{Grid, OM, y}$= Operating Margin Emission Factor (tCO2/MWh)	CEA Database for CO2 emission factor, version 7
$EF_{grid, BM, y}$ = Build Margin Emission Factor (tCO2/MWh)	CEA Database for CO2 emission factor, version 7
$EF_{Grid,CM, y}$ – Grid Emission Factor	Calculated as the weighted average of the operating margin and build margin

B.5. Description of how the anthropogenic emissions of GHG by sources are reduced below those that would have occurred in the absence of the registered CDM project activity (assessment and demonstration of additionality):

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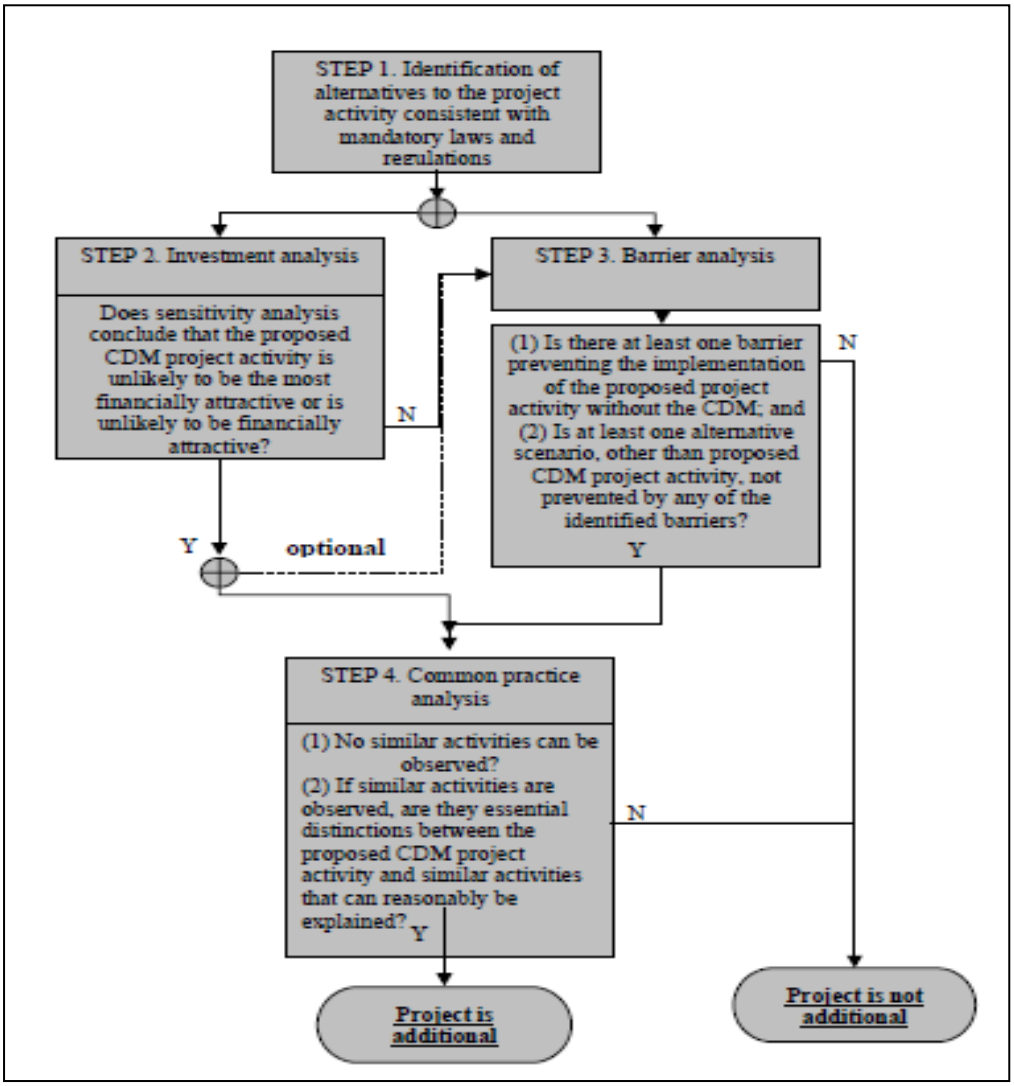
The project activity is said to be additional if the anthropogenic emissions of GHG by source are reduced below those that would have occurred in the absence of the registered CDM project activity. As per the applied methodology, "*the additionality of the project activity shall be demonstrated and assessed using the latest version of theTool for the demonstration and assessment of additionality".*

The steps involved in demonstrating the additionality as per the latest version of the tool (Version 06.0.0 EB65) is as summarized 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:

As per the applied methodology ACM0002, 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 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".

Outcome of Sub-step 1a: The realistic and credible alternatives of the project are :

(i) The project activity being undertaken without taking in to consideration the CDM.

(ii) Equivalent amount of electricity being generated through operation of grid-connected power plants and 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".

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

Neither the Indian Electricity Act 2003 nor National Electricity Plan restrict / suggest the usage of fuels or technology for power generation. Hence no regulatory provision / law restrict Alternative 1 and Alternative 2 from occurring. Decision of project participant, for the implementation of project activity is voluntary and it is not mandatory or a legal requirement.

Outcome of Step 1b: Both the Identified alternative are in compliance with all mandatory applicable legal and regulatory requirements both in the Combined regional grid (comprising of Northern, Eastern, Western, and North-Eastern regional grids) and India

Step 2: Investment analysis

Sub-step 2a: Determine appropriate analysis method

In addition to the CDM revenue, the project activity generates revenue from the sale of electricity to the grid. Therefore, Simple Cost analysis is not an appropriate analysis method.

As per the Guidelines on the assessment of investment analysis[3], Version 05 EB62 guidance 19 states "*If the proposed baseline scenario leaves the project participant no other choice than to make an investment to supply the same (or substitute) products or services, a benchmark analysis is not appropriate and an investment comparison analysis shall be used. If the alternative to the project activity is the supply ofelectricity from a grid this is not to be considered an investment and a benchmark approach is considered appropriate".* The proposed project activity the baseline does not require investment, i.e., the project proponent can chose to invest or not to. Also continuing of current scenario is the supply of electricity from a grid. Therefore, benchmark analysis is the appropriate method.

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

The equity Internal Rate of Return (Equity IRR) has been chosen as the financial indicator for the investment analysis. While computing the equity IRR, only the portion of investment costs which is financed by equity should be considered as the net cash outflow. This is in conformance with guidance 10 of the Guidelines on the assessment of investment analysis.
The project has a debt component of 70 %. Yet the financial indicator chosen is post tax equity IRR. The reason for this decision is given as follows:
The investment decision for the project is taken by the equity investor and therefore the decision to invest in the project is based on the return derived by the equity investor i.e. Equity IRR. Project IRR does not take in to account effect of different financing structures on any project. Investment decisions are as much dependent on financing structures as they are on other project parameters and have significant impact on investment viability. Therefore it would not be appropriate to ignore the financing structure as it forms an important parameter to any investment decision. Considering above, post tax equity IRR is considered to be the most appropriate financial indicator for investment analysis.

Sub-step 2b: Option III. Apply benchmark analysis

As per guidance 12 of Guidelines on the assessment of investment analysis, "*Required/expected returns on equity are appropriate benchmarks for equity IRR"*. Therefore, the project proponent has chosen Cost of Equity as the benchmark to compare the equity IRR.

As per guidance 15 of Guidelines on the assessment of investment analysis, *"……. the cost of equity should be determined either by: (a) selecting the values provided in Appendix A; or by (b) calculating the cost of equity using best financial practices……".*

The project proponent has chosen option (a) to estimate the cost of equity. As per Appendix A, the project activity falls under Group 1 category of projects. The default value for the expected return on equity calculated after taxes is 11.75%. As per guidance 7 of Annex A, *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.*

Reserve Bank of India (RBI), the central bank of India, provides the inflation forecast over the next ten years. The inflation expected over the next ten years (duration of crediting period) is 5.5[4]%.

The cost of equity is = (11.75%+ 5.5%)
= 17.25%

Therefore, the benchmark computed for the project activity is 17.25%.
The parameters and assumptions used for Equity IRR calculations have been mentioned below

Assumptions:	Values	Units	Data Source

[4] http://rbi.org.in/scripts/PublicationsView.aspx?id=13360

Results of 15th Round (Q4:2010-11) of Survey of Professional Forecasters on Macroeconomic Indicators ,Table A.7: Annual Average Percentage Change

Location - State	Maharashtra		Board resolution dated 22 July 2011
Place	Sinner		Board resolution dated 22 July 2011
No of WTGs	14		
Capacity of each WTG	2.1	MW	
Project Size	29.4	MW	
Cost per WTG	125.5	INR Million	Quotations from Suzlon dated 04/07/2011
Cost of Project per MW	59.76	INR Million	Calculated
Total Project Cost	**1757**	INR Million	Calculated
Means of Finance			
Debt	66.09	**%**	IREDA Loan Sanction letter dated 15 Feb 2012
Equity	33.91	**%**	IREDA Loan Sanction letter dated 15 Feb 2012
Operating Parameters			
Plant Load Factor (net of Transmission charges)	22.12	**%**	Third part PLF study carried out by Garrad Hassan and Partners Ltd dated 01 April 2010
Total Generation for the project at above PLF	56.97	Million KWh p.a	Report by Garrad Hassan and Partners Ltd. This conforms to Annex 11, EB 48
Grid Availability	100	%	Report by Garrad Hassan and Partners Ltd. This conforms to Annex 11, EB 48
Total generation after Line Loss	56.97	Million KWh p.a	Calculated
Life of the Wind Turbine	20	Years	Technical Specification document from Suzlon.
O & M cost			
O & M Cost (in Lacs) from 3rd Year of operation incl Ser. Tx	29.86	INR Million p.a	Quotations from Suzlon dated 04

			July 2011
Annual escalation from 3rd year	5	%	Quotations from Suzlon dated 04 July 2011
Financial Parameters			
Interest on Term Loan	12.65	%	The interest rate considered is the actual interest rate as per the IREDA Loan Sanction letter dated 15 February 2012
Tariff	4.67	INR/KWh	MAHARASHTRA ELECTRICITY REGULATORY COMMISSION Tariff order dated 29/04/2012
Tariff escalation	0	%	
Term Loan Parameters			
Repayment period	12.50		IREDA Loan Sanction letter dated 15 February 2012
Moratorium period	0		IREDA Loan Sanction letter dated 15 February 2012
Number of instalments	150		Calculated
Instalment amount	7.74		Calculated
Depreciation Rate			
As per companies Act			
Plant and machinery - SLM	5.28	%	Companies Act
As per Income Tax Act			
Depreciation rate- first year	15	%	IT Act
Taxation			
Corporate Tax	32.45	%	IT Act
MAT	20	%	IT Act

The equity IRR thus computed is 12.88%. Compared to the benchmark of 17.25%, it is evident that the project activity is not financially viable without the CDM benefits. Considering CDM benefits the Equity IRR comes to 16.80 which is also below the benchmark

Sub-step 2c: Calculation and comparison of financial indicators

The Equity IRR for the project found to be 12.88% which is lower than benchmark of 17.25%. The summary of the investment is as follows

Sensitivity Analysis

As per guidance 20 of Guidelines on the assessment of investment analysis, "*Only variables, including the initial investment cost, that constitute more than 20% of either total project costs or total project revenues should be subjected to reasonable variation".* The parameters therefore subjected to sensitivity analysis are:

- Project cost
- O&M cost
- PLF
- Power tariff

Moreover, as per version 05 of "GUIDELINES ON THE ASSESSMENT OF INVESTMENT ANALYSIS", Paragraph 21, "*As a general point of departure variations in the sensitivity analysis should at least cover a range of +10% and .10%, unless this is not deemed appropriate in the context of the specific project circumstances.*"

The threshold analysis provides the values of the sensitive parameters at which the IRR crosses the benchmark. Suitable explanations have been provided to demonstrate that none of the scenarios are possible where IRR crosses the benchmark.

The results of sensitivity analysis are presented in the table below:

Parameters	**-10%**	**0%**	**10%**	**Benchmark**
PLF	10.04%	12.88%	15.82%	17.25%
Tariff	10.09%	12.88%	15.75%	
Project Cost	16.30%	12.88%	10.19%	
O&M Cost	13.15%	12.88%	12.61%	

As per the Annex 58, EB 51 guidance no. 21, **"In cases where a scenario will result in the project activity passing the benchmark or becoming the most financially attractive alternative the DOE shall provide an assessment of the probability of the occurrence of this scenario in comparison to the likelihood of the assumptions in the presented investment analysis, taking into consideration correlations between the variables as well as the specific socio-economic and policy context of the project activity"**

From the above mentioned results of sensitivity analysis, it is evident that the equity IRR does not cross the benchmark within the chosen range. However, the sensitivity at which the equity IRR crosses the benchmark is provided below along with the justification of the probability of these scenarios not occurring.

PLF: The IRR crosses the benchmark when the PLF increases by 14.82% (i.e. PLF becomes 25.4%). The PLF value of 22.12%, has been sourced from a third party report by Garrad Hassan. As per the MERC Tariff Order dated 29 April 2011, the PLF corresponding to the interim tariff of INR 4.67/KWh is 23%. Having a PLF which is higher than the estimated PLF by 14.82% for a time span of 20 years is highly unrealistic and improbable.

O&M cost: The IRR crosses the benchmark when the O&M cost goes down by 170%. The O&M cost has been sourced from the quotations received from Suzlon. The actual O&M contract has also been signed. As per the actual O&M contract the O&M charges are INR 28.44 Million per annum. This corresponds to a difference of only 4.75%. The O&M charges cannot go down any further hence the chance of the O&M charges going down by 170% is not there.

Tariff: The IRR crosses the benchmark only when the Tariff increases by 15.22%. The interim tariff has been considered from the MERC tariff order dated 29 April 2011. The highest possible tariff, as per this Tariff Order is INR 5.37/KWh. Even with a tariff of INR 5.37/KWh the IRR goes up to 17.21% which is below the benchmark of 17.25%. Hence the possibility of the tariff going up by 15.22% is nil.

Project Cost: The IRR crosses the benchmark when the Project Cost goes down by 12.40%. The actual P.Os has been placed, and as per the Purchase Orders the actual project cost comes to INR 1610.13 Million. This corresponds to a decrease by 8.36%. There is no possibility of the project cost going down any further. Hence a decrease in project cost by 12.40% is not possible.

Outcome of Step 2: As can be seen, the equity IRR of the project activity remains well below the benchmark even under the sensitivity analysis. Therefore it can be concluded that the proposed CDM project activity is unlikely to be the most financially/economically attractive.

Step 3: Barrier analysis
Not Opted for.

Step 4: Common practice analysis

For Common practice analysis, Version 02.0 of the GUIDELINES ON COMMON PRACTICE has been used. As per the guideline the following steps have been suggested:

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

The proposed project activity is of 29.4 MW capacity. Considering +/- 50% of the project activity capacity the output range to be considered for the common practice analysis is 14.7 MW to 44.1 MW. Since any project below 15 MW is considered to be small scale projects, and hence should not be included in the common practice analysis, the range is considered from 15 MW to 44.1 MW

Step 2: identify similar projects (both CDM and non-CDM) which fulfil all of the following conditions:

a. ***The projects are located in the applicable geographical area***
b. ***The projects apply the same measure as the proposed project activity***
c. ***The projects use the same energy source/fuel and feedstock as the proposed project activity, if a technology switch measure is implemented by the proposed project activity***
d. ***The plants in which the projects are implemented produce goods or services with comparable quality, properties and applications areas (e.g. clinker) as the proposed project plant***
e. ***The capacity or output of the projects is within the applicable capacity or output range calculated in Step 1***
f. ***The projects started commercial operation before the project design document (CDM-PDD) is published for global stakeholder consultation or before the start date of proposed project activity, whichever is earlier for the proposed project activity***

All wind power plants in the applicable output range of 15 MW to 44.1 MW which started commercial operation before the start date of proposed project activity (05 August 2011) in India are as mentioned below:

Wind power project: The "Directory – Indian Wind power 2011", is an official compendium of wind power projects in India. The Wind Power Directory provides installation of wind turbines by a project owner along with information on WTG capacity, total installation, location & date of commissioning. As per Directory – Indian Wind power 2011 there are 40 wind power plants in India, which are within the given range.

The complete list of power plants in the given capacity range in India is as follows:

Wind Power Plants:

Sl.No	Project	Capacity	State
1	Accion Wind Energy Pvt Ltd	16.5	Karnataka
2	Aryan Coal Benefication	15	Maharashtra
3	Belgaum Wind Farms Pvt. Ltd	24.8	Karnataka
4	Best & Co	25	Tamil Nadu
5	CLP Windfarm (I) Pvt Ltd	20.8	Karnataka
6	CPCL	17.6	Tamil Nadu

Sl.No	Project	Capacity	State
7	DLF Home Developers	19.5	Rajasthan
8	DLF Home Developers	33	Tamil Nadu
9	Doodanavar & Brothers	15	Karnataka
10	Enercon Wind Farms (Raj) Pvt Ltd	24	Rajasthan
11	Enercon Windfarms Sai Limited	20	Maharashtra
12	GACL	23.75	Gujarat
13	GACL	39	Gujarat
14	Generacion Eolica India Pvt Ltd	31.2	Karnataka
15	Green Infra Wind Farms Ltd	24	Tamil Nadu
16	Gujarat Flourochemicals Limited	23.1	Maharashtra
17	Gujarat Flourochemicals Limited	19.5	Rajasthan
18	HPCL	21.25	Rajasthan
19	Gujarat NRE Coke Limited	26.25	Gujarat
20	HZL	18.4	Karnataka
21	IOCL	21	Gujarat
22	Jaiprakash Associates	16.25	Maharashtra

Sl.No	Project	Capacity	State
23	Jindal Steel and Power Limited	24	Maharashtra
24	Kohinoor Planet Construction	24	Rajasthan
25	KPR Mill	19.8	Tamil Nadu
26	Madras Cement Limited	41.6	Tamil Nadu
27	Modern Road Makers	20	Rajasthan
28	MSPL Group	30	Gujarat
29	Patnaik Minerals	35.2	Gujarat
30	Patnaik Minerals	15	Maharashtra
31	Madras Cement Limited	19.8	
32	Rajasthan Ren Energy Corp Limited	25	Rajasthan
33	Rajasthan State Mines and Minerals Limited	15	Rajasthan
34	Rajasthan State Mines and Minerals Limited	22.5	Rajasthan

Sl.No	Project	Capacity	State
35	Rajasthan State Mines and Minerals Limited	31.5	Rajasthan
36	Manganese Ore (India) Limited.	15.2	Madhya Pradesh
37	Powerica Limited	16.5	Tamil Nadu
38	Soundararaja Mills	20	Tamil Nadu
39	India Power Corporation Limited (IPCL)	24.8	Gujarat
40	VRL Logistics	42.5	Karnataka

Step 3: within the projects identified in Step 2, identify those that are neither registered CDM project activities, project activities submitted for registration, nor project activities undergoing validation. Note their number Nall

From the list of wind power plants mentioned in Step 2 the list of wind power plants which are neither registered CDM project activities, project activities submitted for registration, nor project activities undergoing validation is given below:

Wind Power Plants:

Sl.No	**Project**	**Capacity**	**State**
1	Best & Co	25	Tamil Nadu
2	Soundararaja Mills	20	Tamil Nadu

The list of wind power plants that are under CDM and their CDM reference is provided in the below table.

Wind Power Plants under CDM:

Sl.No	Project	Capacity	State	CDM status	CDM referenece
1	Accion Wind Energy Pvt Ltd	16.5	Karnataka	Yes	http://cdm.unfccc.int/Projects/DB/DNV-CUK1216117082.43/view
2	Aryan Coal Beneficiation	15	Maharashtra	Yes	http://cdm.unfccc.int/Projects/Validation/DB/SB3OIAHMLZK0Z0KZ1J4ZLHHC8O8541/view.html
3	Belgaum Wind Farms Pvt. Ltd	24.8	Karnataka	Yes	http://cdm.unfccc.int/Projects/DB/DNV-CUK1204705646.68/view
4	CLP Windfarm (I) Pvt Ltd	20.8	Karnataka	Yes	
5	CPCL	17.6	Tamil Nadu	Yes	http://cdm.unfccc.int/Projects/DB/BVQI1257245548.54/view
6	DLF Home Developers	19.5	Rajasthan	Yes	http://cdm.unfccc.int/Projects/Validation/DB/34CAG54CUL49MILW9S0SKWCWU38SSX/view.html
7	DLF Home Developers	33	Tamil Nadu	Yes	http://cdm.unfccc.int/Projects/Validation/DB/34CAG54CUL49MILW9S0SKWCWU38SSX/view.html
8	Doodanavar & Brothers	15	Karnataka	Yes	http://cdm.unfccc.int/Projects/Validation/DB/41QELS82OAMKTCOUWKY4N0ZBYGHD7M/view.html
9	Enercon Wind Farms (Raj) Pvt Ltd	24	Rajasthan	Yes	http://cdm.unfccc.int/Projects/DB/SGSUKL1181738388.43/viewnfccc.int/Projects/DB/SGSUKL1181738388.43/viehttp://cdm.unfccc.int/Projects/DB/SGSUKL1181738388.43/vie

Sl.No	Project	Capacity	State	CDM status	CDM referenece
10	Enercon Windfarms Sai Limited	20	Maharashtra	Yes	http://cdm.unfccc.int/Projects/DB/DNV-CUK1279516994.31/view
11	GACL	23.75	Gujarat	Yes	http://cdm.unfccc.int/Projects/Validation/DB/PLJVAOHCZK3WX6GN4QGVAH8C3MGAYP/view.html
12	GACL	39	Gujarat	Yes	http://cdm.unfccc.int/Projects/Validation/DB/CBEZRP9HZI993GZEUKGZF6JOGZJB45/view.html
13	Generacion Eolica India Pvt Ltd	31.2	Karnataka	Yes	http://cdm.unfccc.int/Projects/DB/RWTUV1290591737.68/view
14	Green Infra Wind Farms Ltd	24	Tamil Nadu	Yes	http://cdm.unfccc.int/Projects/Validation/index.html
15	Gujarat Flourochemicals Limited	23.1	Maharashtra	Yes	
16	Gujarat Flourochemicals Limited	19.5	Rajasthan	Yes	http://cdm.unfccc.int/Projects/Validation/DB/2PRTXEX2D3L8N6SMULG87OVB1WWJPG/view.html
17	HPCL	21.25	Rajasthan	Yes	http://cdm.unfccc.int/Projects/Validation/DB/H88VQDBMZDVSK37NPUUWXHR25K08FR/view.html
18	Gujarat NRE Coke Limited	26.25	Gujarat	Yes	http://cdm.unfccc.int/Projects/Validation/DB/2WHFROEPK85ARNQ1TVKJV4WC8ATMAB/view.html

Sl.No	Project	Capacity	State	CDM status	CDM referenece
19	HZL	18.4	Karnataka	Yes	http://cdm.unfccc.int/filestorage/N/9/L/N9L0SY7CEOBTXFVGZQP5UH218WI6AJ/PDD%20HZL%20KTN%20Clean.pdf?t=c0p8bTl1ZXptfDBxvJKc4KmJKltszHd7Mg0h
20	IOCL	21	Gujarat	Yes	http://cdm.unfccc.int/Projects/DB/DNV-CUK1304071464.49/view
21	Jaiprakash Associates	16.25	Maharashtra	Yes	http://cdm.unfccc.int/Projects/DB/SGS-UKL1266513892.49/view
22	Jindal Steel and Power Limited	24	Maharashtra	Yes	http://cdm.unfccc.int/Projects/DB/DNV-CUK1331028815.56/view
23	Kohinoor Planet Construction	24	Rajasthan	Yes	http://cdm.unfccc.int/Projects/DB/BVQI1302691944.71/view
24	KPR Mill	19.8	Tamil Nadu	Yes	http://cdm.unfccc.int/Projects/DB/SIRIM1299217620.46/view
25	Madras Cement Limited	41.6	Tamil Nadu	Yes	http://cdm.unfccc.int/Projects/Validation/DB/AOLO0C51SE7IUL19FP3B27HORLRSK0/view.html
26	Modern Road Maker	20	Rajasthan	Yes	http://cdm.unfccc.int/Projects/Validation/DB/AERX8YCUI2RBEAK41JC7IF8SN67G1P/view.html

Sl.No	Project	Capacity	State	CDM status	CDM referenece
	s				
27	MSPL Group	30	Gujarat	Yes	http://cdm.unfccc.int/Projects/DB/BVQI1286434210.07/view
28	Patnaik Minerals	35.2	Gujarat	Yes	http://cdm.unfccc.int/Projects/DB/RWTUV1288029478.94/view
29	Patnaik Minerals	15	Maharashtra	Yes	http://cdm.unfccc.int/Projects/DB/RWTUV1306214743.43/view
30	Madras Cement Limited	19.8		Yes	http://cdm.unfccc.int/Projects/Validation/DB/Q861X5CIWDLQSWCRTY3HP0MHMBDM7S/view.html
31	Rajasthan Ren Energy Corp Limited	25	Rajasthan	Yes	25 MW Grid Connected Wind Farm project by RRECL in Jaisalmer, India.
32	Rajasthan State Mines and Minerals Limited	15	Rajasthan	Yes	http://cdm.unfccc.int/Projects/DB/DNV-CUK1243661243.16/view
33	Rajasthan State Mines and Minerals Limited	22.5	Rajasthan	Yes	http://cdm.unfccc.int/Projects/DB/BVQI1201770524.09/view

Sl.No	Project	Capacity	State	CDM status	CDM referenece
34	Rajasthan State Mines and Minerals Limited	31.5	Rajasthan	Yes	http://cdm.unfccc.int/Projects/Validation/DB/RNNKAHLY2ZRXKKY7KS859PZOQL3XCJ/view.html
35	Manganese Ore (India) Limited.	15.2	Madhya Pradesh	Yes	http://cdm.unfccc.int/Projects/DB/TUEV-RHEIN1265262346.25/view
36	Powerica Limited	16.5	Tamil Nadu	Yes	http://cdm.unfccc.int/Projects/DB/LRQA%20Ltd1264590823.08/view
37	India Power Corporation Limited (IPCL)	24.8	Gujarat	Yes	http://cdm.unfccc.int/Projects/Validation/DB/K0ZTRSQUQH8WZN76AA11ZAZW16BPNH/view.html
38	VRL Logistics	42.5	Karnataka	Yes	http://cdm.unfccc.int/Projects/DB/SGS-UKL1225104443.35/view

Hence N_{all} = 2

Step 4: within similar projects identified in Step 3, identify those that apply technologies that are different to the technology applied in the proposed project activity. Note their number N_{diff}

Electrcity regulations vary from state to state. Every state has its own Electicity Regulatory Commission. Many factors like policies, tariffs investment atomesphere vary considerably from state to state. Hence setting up a wind mill in Maharashtra is different from setting up a wind mill in any other state of India. Thus for calculating N_{diff}, all wind mills outside the state of Maharashtra has been considered.

Since both the projects identified in N_{all} are located outside Maharashtra, N_{diff} = 2

Step 5: calculate factor $F=1-N_{diff}/N_{all}$ representing the share of similar projects (penetration rate of the measure/technology) using a measure/technology similar to the measure/technology used in the proposed project activity that deliver the same output or capacity as the proposed project activity

F = 1-(2/2)

Thus F = 0

As per version 02 of the GUIDELINES ON COMMON PRACTICE , ***The proposed project activity is a "common practice" within a sector in the applicable geographical area if the factor F is greater than 0.2 and N_{all}-N_{diff} is greater than 3.***

As per the above calculations F = 0 which is less than 2 and N_{all}-N_{diff} = 0, which is less than 3.

Thus the project is not a common practice.

Serious CDM consideration

The chronology of events mentioned below highlights the various steps taken up by PP to secure the CDM revenue:

Activity	Date
Date of quotations received from Suzlon	4-July-2011
Board resolution[5]	22-Jul-11
Purchase Order	5-Aug-11
Stake holder meeting	19-Oct-11
Prior consideration	7-Nov-11
DOE appointment date	02-Feb-2012

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As per the *'Guidelines on the demonstration and assessment of prior consideration of the CDM, ver 04, EB 62'*[6], for project activities with a starting date on or after 2 August 2008, the project participant is supposed to inform a Host Party designated national authority (DNA) and the UNFCCC secretariat in writing of the commencement of the project activity and of their intention to seek CDM status, within six months of the project activity start date. BVUPL sent out the prior consideration form in the standardized format with the precise geographical location and a brief description of the proposed project activity on 07 November 2011, which is within six months of the start date of the project i.e. 22 July 2011, as indicated in the above table

Hence from the above analysis it can be concluded that the project activity is additional and the financial viability and sustainable operation is possible only with the benefits of CDM.

[5] The decision to go ahead with the project with CDM was taken by Caparo Energy (India) Limited. Later the name of the company was changed to Mytrah Energy (India) Limited (MEIL) in 27/09/2011. BVUPL is a special purpose vehicle launched by MEIL to execute the project activity.

[6] http://cdm.unfccc.int/Reference/Guidclarif/reg/reg_guid04.pdf

B.6. Emission reductions:

B.6.1. Explanation of methodological choices:

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According to the approved methodology ACM0002 (Version 12.3.0) Emission Reductions are calculated as:

$$ER_y = BE_y - PE_y$$

Where,

ER_y = Emission reductions in year *y* (t CO_2e)
BE_y = Baseline emissions in year *y* (t CO_2)
PE_y = Project emissions in year *y* (t CO_2e)

Baseline Emissions:

Baseline emissions include only CO2 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:

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

Where,

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

Since the Project emissions and Leakages are zero, hence

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

Where,

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

The proposed project activity is in the state of Maharashtra which falls under NEWNE grid, baselineemission factor is calculated as combined margin, consisting of a combination of operating margin andbuild margin factors according to the procedures prescribed in the latest tool for calculating theemission factor for an electricity system. The steps of calculation are as follows:

STEP 1: Identifying the relevant electricity systems:

The Indian electricity system is divided into two regional grids, viz. (1) Northern, Eastern, Western,North-Eastern and (2) Southern grid. Each grid covers several states. As the regional grids areinterconnected, there is inter-state and inter-regional exchange. A small power exchange also takesplace with neighbouring countries like Bhutan and Nepal. Power generation and supply within the regional grid is managed by Regional Load Dispatch Centre (RLDC). The Regional Power Committees (RPCs) provide a common platform for discussion and solution to the regional problems relating to the grid. Each state in a regional grid meets its demand with its own generation facilities and also with allocation from power plants owned by the Central Sector such as NTPC and NHPC etc. Specific quotas are allocated to each state from the Central Sector power plants. Depending on the demand and

generation, there are electricity exports and imports between states in the regional grid. The regional grid thus represents the largest electricity grid where power plants can be dispatched without significant constraints and thus, represents the "project electricity system" for the project activity. As the project activity is connected to the NEWNE electricity grid, the NEWNE grid is the "project electricity system".

Step 2: Choose whether to include off-grid power plants in the project electricity system (optional)
Option I is opted for the project activity i.e. only grid power plants are included in the calculation.

Step 3: Select a method to determine the operating margin (OM):
According to the tool, the calculation of the operating margin emission factor is based on one of the following methods:
The calculation of the operating margin emission factor ($EF_{grid,OM,y}$) is based on one of the followingmethods:
(a) Simple OM; or
(b) Simple adjusted OM; or
(c) Dispatch data analysis OM; or
(d) Average OM.
The simple OM method (option a) can only be used if low cost/must-run resources constitute less than50% of total grid generation in: 1) average of the five most recent years, or 2) based on long-termaverages for hydroelectricity production. The details low cost/must-run given in the table below.[7]

Share of Must-Run (Hydro/Nuclear) (% of Net Generation)					
	2006-07	2007-08	2008-09	2009-10	2010-11
NEWNE	18.5%	19.0%	17.4%	15.9%	17.6%
South	28.3%	27.1%	22.8%	20.6%	21.0%
India	20.9%	21.0%	18.7%	17.1%	18.4%

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 NEWNE regional grid is less than 50 % of the total generation. Hence the Simple OM method can be used to calculate the Operating Margin Emission factor. The average operating margin method cannot be applied, as low cost/ must run resources in NEWNE grid constitute less than 50% of total grid generation.
The project proponents choose an ex ante option for calculation of the OM with a 3-year generation weighted average, based on the most recent data available at the time of submission of the CDM-PDD to the DOE for validation, without requirement to monitor and recalculate the emissions factor during the crediting period.

STEP 4: Calculate the operating margin emission factor according to the selected method:
The simple OM emission factor is calculated as the generation-weighted average CO2 emissions per unit net electricity generation (tCO2/MWh) of all generating power plants serving the system, not including low-cost/must-run power plants/units.
As per ,Tool to calculate the emission factor for an electricity system ", Option A ("Based on the net electricity generation and a CO2 emission factor of each power unit") is used to calculate simple OM

[7]CEA Database version 7 (http://www.cea.nic.in/reports/planning/cdm_co2/cdm_co2.htm)

emission factor. Where Option A is used, the simple OM emission factor is calculated based on the electricity generation of each power unit and an emission factor for each power unit, as follows:

$EF_{grid,OMsimple,y} = \Sigma (EG_{m,y} \times EF_{EL,m,y}) / \Sigma EG_{m,y}$

Where

$EF_{grid,OMsimple,y}$	=	Simple operating margin CO2 emission factor in year y (tCO2/MWh)
$EG_{m,y}$	=	Net quantity of electricity generated and delivered to the grid by power unit m in year y (MWh)
$EF_{EL,m,y}$	=	CO_2 emission factor of power unit m in year y (tCO_2/MWh)
M	=	All power units serving the grid in year y except low-cost / must-run power units
Y	=	Either the three most recent years for which data is available at the time of submission of the CDM PDD to the DOE for validation (ex ante option) or the applicable year during monitoring (ex post option), following the guidance on data vintage in step 2

The emission factor of each power unit m has been determined using Option B

$EF_{EL,m,y} = (\Sigma FC_{i,m,y} \times NCV_{i,y} \times EF_{CO2,i,y}) / EG_{m,y}$

Where,

$EF_{EL,m,y}$	=	CO_2 emission factor of power unit *m* in year *y* (tCO_2/MWh)
$FC_{i,m,y}$	=	Amount of fossil fuel type i consumed by power unit m in year y (Mass or volume unit)
$NCV_{i,y}$	=	Net calorific value (energy content) of fossil fuel type i in year y (GJ/mass or volume unit)
$EF_{CO2,i,y}$	=	CO2 emission factor of fossil fuel type i in year y (tCO2/GJ)
EGm,y	=	Net quantity of electricity generated and delivered to the grid by power unit m in year y (MWh)
M	=	All power units serving the grid in year y except low-cost/must-run power units
I	=	All fossil fuel types combusted in power unit m in year y
Y	=	The relevant year as per the data vintage chosen in Step 3

The value of Operating Margin (OM) as obtained from CDM Database version 7 is as follows:

Simple Operating Margin (tCO2/MWh) (incl. Imports) (1) (2)					
	2006-07	2007-08	2008-09	2009-10	2010-11
NEWNE	1.01	1.00	1.01	0.98	0.97
South	1.00	0.99	0.97	0.94	0.94
India	1.01	1.00	1.00	0.97	0.96

Thus the simple operating margin CO2 emission factor for the recent years (2008-09, 2009-10, 2010-11) is **0.9841 tCO2/MWh**

STEP 5: Identify the group of power units to be included in the build margin:

The sample group of power units m used to calculate the build margin consists of either:

(a) The set of five power units that have been built most recently, or

(b) The set of power capacity additions in the electricity system that comprise 20% of the system generation (in MWh) and that have been built most recently.
Project Participant should use the set of power units that comprises the larger annual generation. Accordingly, the CEA database version 7 calculates the build margin as the average emissions intensity of the 20% most recent capacity additions in the grid based on net generation.

The build margin emission factor has been calculated ex-ante based on the most recent information available on units already built for sample group m at the time of CDM-PDD submission to the DOE for validation. This option does not require monitoring the emission factor during the crediting period.

STEP 6: Calculate the build margin emission factor:
The build margin emissions factor is the generation-weighted average emission factor of all power units m during the most recent year y for which power generation data is available, calculated as follows:

$EF_{grid,BM,y} = (\sum EG_{m,y} \times EF_{EL,m,y}) / \sum EG_{m,y}$

Where,

$EF_{grid,BM,y}$	=	Build margin CO2 emission factor in year y (tCO2/MWh)
$EG_{m,y}$	=	Net quantity of electricity generated and delivered to the grid by power unit m in year y(MWh)
$EF_{EL,m,y}$	=	CO2 emission factor of power unit m in year y (tCO2/MWh)
M	=	Power units included in the build margin
Y	=	Most recent historical year for which power generation data is available

The CO2 emission factor of each power unit m ($EF_{EL,m,y}$) is determined as per the procedures given instep 4 (a) for the simple OM, using option A1 for y most recent historical year for which powergeneration data is available, and using for m the power units included in the build margin.

The values of Build Margin as obtained from CDM Database version 7 are as follows:

Build Margin (tCO2/MWh) (not adjusted for imports)					
	2006-07	2007-08	2008-09	2009-10	2010-11
NEWNE	0.63	0.60	0.68	0.81	0.86
South	0.70	0.71	0.82	0.76	0.73
India	0.65	0.63	0.71	0.80	0.83

For ex ante calculation the most recent data (2009-10) available has been used and the build margin thus calculated is **0.8587 tCO2/MWh**

STEP 7: Calculate the combined margin emissions factor:

The emission factor EF_y of the grid is represented as a combination of the Operating Margin (OM) and the Build Margin (BM). Considering the emission factors for these two margins as $EF_{grid,OM,y}$ and $EF_{grid, BM,y}$, then the EF_y is given by:

$EF_{grid,CM,y} = EF_{grid,OM,y} \times w_{OM} + EF_{grid, BM,y} \times w_{BM}$

Where,

$EF_{grid,CM,y}$	=	Combined margin emissions factor
$EF_{grid,OM,y}$	=	Operating margin CO2 emission factor in year y (tCO2/MWh)

$EF_{grid, BM,y}$ = Build margin CO2 emission factor in year y (tCO2/MWh)
w_{OM} = Weighting of operating margin emissions factor (%)
w_{BM} = Weighting of build margin emissions factor (%)

Where, $w_{OM} + w_{BM} = 1$

According to ACM0002 the weights for OM and BM are 0.75 and 0.25 respectively.
Using the values for operating and build margin emission factor provided in the CEA database and their respective weights for calculation of combined margin emission factor, the baseline carbon emission factor (CM) is 0.9527tCO2e/MWh.

Estimation of Project Emissions
The project activity involves harnessing of wind energy and its conversion to electricity. Henceaccording to ACM0002 Version 12.3.0, there will be no project emissions in the project activity.

Estimation of Leakage Emissions
As per ACM0002 Version 12.3.0, no leakage has been considered for the calculation of emission factor.

B.6.2. Data and parameters that are available at validation:

(Copy this table for each data and parameter)

Data / Parameter:	$EF_{grid,OM,y}$
Data unit:	tCO2e/MWh
Description:	Operating Margin Emission Factor of NEWNE Regional Electricity Grid
Source of data used:	"Last 3 years average from CO2 Baseline Database for Indian Power Sector", version 7 published bythe Central Electricity Authority, Ministry of Power, Government of India.
Value applied:	0.9841
Justification of the choice of data or description of measurement methods and procedures actually applied :	Operating Margin Emission Factor has been calculated by the Central Electricity Authority using the simple OM approach in accordance with ACM0002.
Any comment:	The value is calculated on ex-ante basis and it will remain same throughout the crediting period.

Data / Parameter:	$EF_{grid, BM,y}$
Data unit:	tCO2e/MWh
Description:	Build Margin Emission Factor of NEWNE Regional Electricity Grid
Source of data used:	Latest Build Margin taken from CO2 Baseline Database for Indian Power Sector" version 7 published by the Central Electricity Authority, Ministry of Power, Government of India.
Value applied:	0.8587
Justification of the choice of data or description of measurement methods and procedures actually	Build Margin Emission Factor has been calculated by the Central Electricity Authority in accordance with ACM0002

applied :	
Any comment:	The value is calculated on ex-ante basis and it will remain same throughout the crediting period.

Data / Parameter:	$EF_{grid,CM,y}$
Data unit:	tCO_2e/MWh
Description:	Combined Margin Emission Factor of NEWNE Regional Electricity Grid
Source of data used:	Calculated from the Operating Margin and Build Margin.
Value applied:	0.9527
Justification of the choice of data or description of measurement methods and procedures actually applied :	Build Margin Emission Factor has been calculated by the Central Electricity Authority in accordance with ACM0002
Any comment:	The value is calculated on ex-ante basis and it will remain same throughout the crediting period.

B.6.3. Ex-ante calculation of emission reductions:

>>

Installed Capacity	=	29.40
PLF	=	22.12 %
Net Generation	=	Installed Capacity *PLF*24*365
	=	56968.73 MWh
Baseline emission factor	=	0.9527
Baseline emissions	=	Net Generation * Baseline emission factor
		54274 tCO2 equivalent
Project emissions	=	0
Leakage	=	0
Emission reduction per annum	=	54274 tCO2 equivalent

B.6.4 Summary of the ex-ante estimation of emission reductions:

>>

Year	Estimation ofproject activity emissions (tonnes of CO2 e)	Estimation of baseline emissions (tonnes of CO_2 e)	Estimation of leakage (tonnes of CO_2 e)	Estimation of overall emission reductions (tonnes of CO_2 e)
2013-2014	0	54274	0	54274
2014-2015	0	54274	0	54274
2015-2016	0	54274	0	54274
2016-2017	0	54274	0	54274
2017-2018	0	54274	0	54274
2018-2019	0	54274	0	54274
2019-2020	0	54274	0	54274
2020-2021	0	54274	0	54274
2021-2022	0	54274	0	54274
2022-2023	0	54274	0	54274
Total (tonnes of CO_2 e)	**0**	542740	**0**	542740

B.7. Application of the monitoring methodology and description of the monitoring plan:

B.7.1 Data and parameters monitored:

Data / Parameter:	EGpj,y
Data unit:	MWh/yr
Description:	Net Electricity export to the grid by the project activity in the year y
Source of data to be used:	Calculated value based on measured values of export and import
Value of data applied for the purpose of calculating expected emission reductions in section B.5	56968.73
Description of measurement methods and procedures to be applied:	Delivered/Net electricity supplied to the MSEDCL will be calculated based on the difference between measured values of "export" and "import" on the MSEDCL meter and the percentage transmission loss incurred in the transmission line between the project and the interconnection point (i.e. sub-station). The meter reading is taken by MSEDCL official. Refer to Annex 4 of the PDD for more details on apportioning and accounting of transmission loss percentage.

QA/QC procedures to be applied:	The quantity of net electricity supplied will be cross-verified from the invoices raised on MSEDCL by the project proponent and the readings available from the meter available at site. The meters will be calibrated annually as per the metering code. **Monitoring**: Continuous monitoring and monthly recording of electricity export and import. **Recording**: Electronic/ Paper **Recording Frequency**: Continuous monitoring and monthly recording **Calibration Frequency**: Once a year. Accuracy class of 0.2s
Any comment:	Date will be archived for crediting period plus two years after the end of Crediting period.

B.7.2. Description of the monitoring plan:

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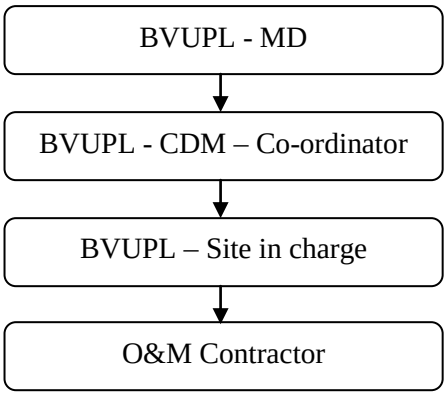
The organisational structure of this CDM project activity is as follows.



The project proponent has entered into agreement with the WTG- Supplier – Suzlon Energy Limited for the operation and maintenance of WTGs. The WTG supplier has dedicated and technically well equipped O&M team[8] for day to day Operation and maintenance of each WTG. O&M contractor will provide a monthly report, which includes wind data, generation data, major breakdown events and machine availability. Site in-charge is responsible for recording of monthly Joint Meter Readings of export and import. Monthly power export and import data will be sent regularly to CDM coordinator of BVUPL.
The detailed monitoring plan has been provided in Annex 4 of the PDD.

B.8. Date of completion of the application of the baseline study and monitoring methodology and the name of the responsible person(s)/entity(ies):

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[8] Suzlon Energy limited is an ISO certified company with all training needs identified and document as per the ISO requirement. O&M is one of their service offering for which they have trained staff.

Date of completion of the application of baseline study and monitoring methodology: 05/04/2012.
Name of the responsible entity:M/s Bindu Vayu Urja Private Limited (BVUPL)

SECTION C. Duration of the project activity / crediting period

C.1. Duration of the project activity:

C.1.1. Starting date of the project activity:

>>
05/08/2011

C.1.2. Expected operational lifetime of the project activity:

>>
20 years.

C.2. Choice of the crediting period and related information:

C.2.1. Renewable crediting period:

C.2.1.1. Starting date of the first crediting period:

>>
Not applicable

C.2.1.2. Length of the first crediting period:

>>
Not applicable

C.2.2. Fixed crediting period:

C.2.2.1. Starting date:

>>
31/12/2012 or date of registration with UNFCCC, whichever is later

C.2.2.2. Length:

>>
10 years.

SECTION D. Environmental impacts

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D.1. Documentation on the analysis of the environmental impacts, including transboundary impacts:

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As per the Schedule 1 of Ministry of Environment and Forests (Government of India) notification dated January 27, 1994 and EIA Notification (S.O 1533) dated 14th September 2006, a list of activities that require undertaking environmental impact assessment studies8 has been provided. EIA is not a regulatory requirement in India for wind energy projects and PP does not expect any adverse impacts of the proposed CDM project activity on the environment.

D.2. If environmental impacts are considered significant by the project participants or the host Party, please provide conclusions and all references to support documentation of an environmental impact assessment undertaken in accordance with the procedures as required by the host Party:

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The project activity does not fall under the purview of the Environmental Impact Assessment (EIA) notification of the Ministry of Environment and Forest, Government of India. Hence, EIA is not required by the host party.

SECTION E. Stakeholders' comments

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E.1. Brief description how comments by local stakeholders have been invited and compiled:

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The Stakeholder meeting was conducted on 19/10/2011 at the site office in Sinner. The invitations were sent out 10 days before the actual Stakeholder meeting was conducted. Mr Suhas Guruji explained the benefits of Wind Power generation to the local people. The stakeholders consisted of local farmers from nearby villages, O&M Contractors as they are the key stakeholders. The stakeholders were provided with a questionnaire which was translated by Mr.Suhas Guruji for the convenience of the local stakeholders.

E.2. Summary of the comments received:

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The comments were received in a questionnaire and the attendance was taken in an attendance sheet. A compilation of the comments are given below:

Name of Stakeholder	Comments
Nandu Dawre	What are the benefits of wind energy generation?
Sopan Pandit	What would be the impact of the project on the local agriculture?
Sampat Dawre	How the project would benefit the local villagers?
Sanjay Wagh	Will there be any impact on the local climate?
Roshan Bhosale	What would be the environmental impact of the power plant?

E.3. Report on how due account was taken of any comments received:

>>

Clarifications to all the comments were given in the following manner:

Name of Stakeholder	Comments	Responses
Nandu Dawre	What are the benefits of wind energy generation?	Wind energy uses wind energy to generate electricity. Thus electricity generation from wind does not lead to any harmful emissions into the atmosphere.
Sopan Pandit	What would be the impact of the project on the local agriculture?	As the project is not located on any agricultural field, the impact on local agriculture is minimum.
Sampat Dawre	How the project would benefit the local villagers?	There would be local employment generation and also electricity supply to the local villages
Sanjay Wagh	What would be the environmental impact of the power plant?	Environmental impact due to wind energy is minimum as there are no harmful emissions of any gases.
Roshan Bhosale	Will there be any impact on the local climate ?	As wind energy is a clean source of electricity, there

		would be no impact on the local climate.

Annex 1

CONTACT INFORMATION ON PARTICIPANTS IN THE PROJECT ACTIVITY

Organization:	M/s Bindu Vayu Urja Private Limited(BVUPL)
Street/P.O.Box:	8001, Q-City, S.No:109 Nanakramguda, Gachibowli
Building:	
City:	Hyderabad
State/Region:	Andhra Pradesh
Postcode/ZIP:	500032
Country:	India
Telephone:	040 3376 0100
FAX:	040 3376 0101
E-Mail:	
URL:	
Represented by:	
Title:	The Managing Director
Salutation:	Mr.
Last name:	Kailas
Middle name:	
First name:	Vikram
Department:	
Mobile:	
Direct FAX:	040 3376 0101
Direct tel:	040 3376 0100
Personal e-mail:	vikram.kailas@mytrah.com

Annex 2

INFORMATION REGARDING PUBLIC FUNDING

NO PUBLIC FUNDING HAS BEEN AVAILED FOR THE PROJECT

Annex 3

BASELINE INFORMATION
As per the CEA Database version 7the following data has been used to calculate the Combined Margin emission factor.

BASELINE INFORMATION
The latest data available for the financial year 2009-10 has been used for the estimation of the baseline emissions. The Central Electricity Authority (CEA) under the Ministry of Power, Government of India, has estimated the Build Margin and the Simple Operating Margin for the NEWNE grid, the details of which is available on the following website and is detailed below as well:
http://www.cea.nic.in/reports/planning/cdm_co2/cdm_co2.htm
Version 7.0 of the database has been used.

Gross Generation Total (GWh)					
	2006-07	2007-08	2008-09	2009-10	2010-11
NEWNE	499,380	531,539	548,956	586,311	622,447
South	161,897	167,379	167,587	180,638	185,257
India	661,277	698,918	716,543	766,950	807,704

Net Generation Total (GWh)					
	2006-07	2007-08	2008-09	2009-10	2010-11
NEWNE	465,361	496,119	510,693	544,915	579,181
South	152,206	157,247	157,336	169,765	173,925
India	617,567	653,366	668,029	714,680	753,106

Share of Must-Run (Hydro/Nuclear) (% of Net Generation)					
	2006-07	2007-08	2008-09	2009-10	2010-11
NEWNE	18.5%	19.0%	17.4%	15.9%	17.6%
South	28.3%	27.1%	22.8%	20.6%	21.0%
India	20.9%	21.0%	18.7%	17.1%	18.4%

Net Generation in Operating Margin (GWh)					
	2006-07	2007-08	2008-09	2009-10	2010-11
NEWNE	379,471	401,642	421,803	458,043	476,987
South	109,116	114,634	121,471	134,717	137,387
India	488,587	516,275	543,274	592,760	614,374

20% of Net Generation (GWh)					
	2006-07	2007-08	2008-09	2009-10	2010-11
NEWNE	93,072	99,224	102,139	108,983	115,836
South	30,441	31,449	31,467	33,953	34,785

India	123,513	130,673	133,606	142,936	150,621

Net Generation in Build Margin (GWh)					
	2006-07	2007-08	2008-09	2009-10	2010-11
NEWNE	93,524	100,707	102,589	109,064	117,779
South	30,442	31,613	31,606	36,100	35,268
India	123,965	132,320	134,195	145,164	153,047

EMISSION DATA

Absolute Emissions Total (tCO2)					
	2006-07	2007-08	2008-09	2009-10	2010-11
NEWNE	385,692,794	406,861,785	430,502,442	453,067,520	468,438,871
South	109,020,456	113,586,133	117,880,640	126,786,215	129,093,636
India	494,713,250	520,447,919	548,383,082	579,853,735	597,532,507

Absolute Emissions OM (tCO2)					
	2006-07	2007-08	2008-09	2009-10	2010-11
NEWNE	385,692,794	406,861,785	430,502,442	453,067,520	468,438,871
South	109,020,456	113,586,133	117,880,640	126,786,215	129,093,636
India	494,713,250	520,447,919	548,383,082	579,853,735	597,532,507

Absolute Emissions BM (tCO2)					
	2006-07	2007-08	2008-09	2009-10	2010-11
NEWNE	59,042,467	60,193,616	69,297,387	88,593,337	101,146,601
South	21,348,182	22,550,310	25,851,338	27,558,555	25,882,886
India	80,390,649	82,743,926	95,148,726	116,151,892	127,029,488

EMISSION FACTORS

Simple Operating Margin (tCO2/MWh)					
	2006-07	2007-08	2008-09	2009-10	2010-11
NEWNE	1.01	1.00	1.01	0.98	0.97
South	1.00	0.99	0.97	0.94	0.94
India	1.01	1.00	1.00	0.97	0.96

Build Margin (tCO2/MWh) (not adjusted for imports)					
	2006-07	2007-08	2008-09	2009-10	2010-11
NEWNE	0.63	0.60	0.68	0.81	0.86
South	0.70	0.71	0.82	0.76	0.73
India	0.65	0.63	0.71	0.80	0.83

Annex 4

MONITORING INFORMATION

Energy generated from the wind farm shall be recorded at the metering point at the HT end of the respective Pooling station which shall be considered as the energy for billing. The station may be having more than one metering point depending on the No of feeders connected by No. of Wind farms. This entire meter will be termed as Feeder meter/s. The total energy recorded in the feeder meter/s shall be considered as the energy for billing.
The option for considering the meter reading shall be Main meter in normal practice. In case of fault in the Main meter check Meter reading will be considered. The meter reading shall be taken jointly by MSETCL (representative of state grid)/ MSEDCL and the company/ its representative every month.
The Main meter reading **will be jointly certified** by the above entity.
Using the above meter reading MSEDCL will provide the credit note on generation through letter. The energy referred in the credit note shall be considered for raising invoice accordingly payment will be received from MSEDCL.
All the meters will be calibrated by MSEDCL once a year.

Working model for sharing of energy (considered by SLDC)

Following are the steps involved in this

1. Each WTG will have provisions of recording meter reading which will be referred as Controller reading of WTG. This shall be read by the representative of the company/Developer Suzlon Energy Limited alone.WTG controller meter does not require calibration due to the following reason:
   "The Controller is a micro processor based intelligent device which has been specially designed for the control of wind turbines. It uses a Woodward Multi function Reply that has three current inputs from CT and three direct voltage inputs (690 Volts). The analog values of current /voltage are converted to digital signal internally using AD convertors at very high sampling rates. A software program reads these values and displays instantaneous parameters such as voltage, current, power factor, kVAh, kVArh and kWh. These instantaneous values are then time integrated and displayed/stored. Woodward rely does not have a display and needs special protocol to view energy readings as this rely communicates digital signal through special communication protocol hence, it is not possible to calibrate. Moreover, turbine cannot run without this relay hence it cannot be removed for calibration during operation"

2. All the individual WTGs are connected to a metering point referred as feeder meter/s reading where metering will be at Pooling SS of SEL. The meter at the substation will measure both export and import of electricity by the project activity. This meter reading will be jointly certified by STU and the company.

3. For measuring electricity Export the following procedure is followed:
   Let us assume the following parameters:
   The sum of the controller readings of all WTG = C
   The electricity export as recorded by the substation meter = E
   The electricity generation reading at WTGn = Xn

The electricity exported to grid by WTGn = (Xn/C) * E.
The electricity exported by all WTGs can be calculated using the above formula.
The sum of electricity exported by all WTGs of a project proponent gives the electricity exported by that particular project proponent.

4. For measuring net electricity import the following procedure is followed:
Let us assume the following parameters:
The sum of the controller readings of all WTG = C
The electricity generation reading at WTGn = Xn
The electricity import as recorded by the substation meter = F
The electricity imported from the grid by WTGn = (Xn/C) * F
The electricity imported by all WTGs can be calculated using the above formula.
The sum of electricity imported by all WTGs of a project proponent gives the electricity imported by that particular project proponent.

5. Net electricity exported by project proponent = Electricity exported – Electricity imported

Emergency Preparedness Plan:

The operational staff's main task is to keep a close watch on a day to day basis on the functioning of the wind turbines. In the event of adverse grid condition of grid failure, the turbine would stop functioning and would restart automatically on resumption of healthy conditions. However there may be faults which will require pre-checking the machine condition before restarting. The operating staff would also document the downtime and operating hours for each turbine along with the reasons for the downtime. The operating staff would summarize the logbook data on a monthly basis and provide the same to the head office. Suzlon, the O&M service provider will deploy maintenance staff at the plant to ensure minimal breakdown of the machines. Additionally, it will ensure supply of sufficient quantity of critical and essential spares and consumables for the requirement of the machines. These critical and essential spares and consumables shall be stocked at the project site to reduce the machine repair downtime. A complete set of tools and tackles will be maintained at the site at the project site by the O&M service provider and will be provided to the project site staff. The site in-charge together with the staff would ensure that periodic maintenance checks are performed on all major components like gearbox, generator, rotor blades, control panels, transformers, control panels etc.

Action Plan for expenditure incurred through 2% of CER revenues									
Financial Year (A)	**Activity (B)**	**Issued CERs (C)**	**CER Price (D)**	**Total CDM Amount (E=CxD)**	**Expenditure in Current year (F)**	**Expenditure Carried forward (G)**	**Net Expenditure for Current Year (H = F+G)**	**Expenditure as % of CDM amount for current year (I = H/E)**	**Reference Documentation (J)**
Indicates the year for which the assessment is being provided	*Provides details of the social/ community activities on which the expenditure has been incurred*	*Quantity of CERs issued for the assessment year*	*CER price at which the transaction has happened*	*Total amount CDM amount received*	*Expenditure made on the social/ community development activity in the current assessment year*	*Additional expenditure incurred on capital goods in the previous assessment years being carried forward to the current assessment yea*	*Net Expenditure on social/ community development activity for the current year*	*Indicates the % of the total CDM amount spent on social/community development activity*	*Indicates the documentation to be provided to the DOE during the verification to evidence the amount spent on social/community development activity*

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