CLEAN DEVELOPMENT MECHANISM
PROJECT DESIGN DOCUMENT FORM (CDM-SSC-PDD)
Version 03 - in effect as of: 22 December 2006

CONTENTS

Revision history of this document

Version Number	Date	Description and reason of revision
01	21 January 2003	Initial adoption
02	8 July 2005	• The Board agreed to revise the CDM SSC PDD to reflect guidance and clarifications provided by the Board since version 01 of this document. • As a consequence, the guidelines for completing CDM SSC PDD have been revised accordingly to version 2. The latest version can be found at <http://cdm.unfccc.int/Reference/Documents>.
03	22 December 2006	• The Board agreed to revise the CDM project design document for small-scale activities (CDM-SSC-PDD), taking into account CDM-PDD and CDM-NM.

SECTION A. General description of small-scale project activity

A.1 Title of the small-scale project activity:

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8.35 MW wind power project at Guddarangavana Halli, Chitradurga, Karnataka in India

Document Version: 1
Date of completion of document: January 21, 2008

A.2. Description of the small-scale project activity:

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With the objective of promoting wind power and other renewable sources for power generation the Government of Karnataka came out with a preferential tariff for procurement of power produced in the wind turbines. The policy of preferential price for procurement of power generated in the wind based power plants was announced in-spite of the mandate to procure power at the lowest possible price. While considering such a policy one of the considerations was that significant part of the benefits accruing due to Clean Development Mechanism (CDM) of Kyoto Protocol will be to state government account which will partly compensate the loss to the state owned distribution companies due to higher price paid for the power purchased from wind turbines based power plants. In the absence of the CDM benefits it would not have been possible for the government of Karnataka to come out with a preferential tariff structure for the power generated in wind based power plants. This in turn would not have encouraged private sector investment in the wind based power plants.

In the state of Karnataka in India, the Karnataka Power Transmission Corporation Limited and its subsidiary companies including the Bangalore Electrical Supply Company (BESCOM), are responsible for procurement of power from the power generation companies and distributing it to the end users. Taking into account the favourable power purchase policy from wind turbines, MSPL Limited (MSPL) and one of its associated companies, Ramgarh Mines and Minerals Private Limited (RMMPL) entered into four separate agreements with BESCOM. Under the agreements MSPL was to install wind turbines of total capacity of 8.35 MW at Guddarangavana Halli, Chitradurga, at its own cost, the construction/ upgradation of the interconnection facilities, the transmission lines and the receiving station was also to be carried out by MSPL. The power generated at the wind turbines was to be purchased by BESCOM at the preferential price of Rs. 3.10 / kWh. The benefits accruing on account of the carbon credit shall be shared between BESCOM and MSPL by more than half in favour of BESCOM. The agreement between BESCOM and MSPL is detailed in the Power Purchase Agreements signed between the two parties.

The proposed CDM project activity comprises of installation and operations of eight 950 kW Wind Electricity Generators (WEGs) and one 750 kW WEG having a combined wind power generation capacity of 8.35 MW in Guddarangavana (GR) Halli of Chitradurga District in Karnataka, India. The project is located in one of the wind rich areas of the country and the wind capacity utilization factor is estimated at 30% for the 950 kW turbines and at 28% for the 750 kW turbines. The annual estimated power generation for each of the 950 kW WEG is 25 Lakh units and for the 750 KW WEG, the same is 18.5 Lakh units. All the WEGs are connected to the grid and the generated electricity is sold to BESCOM as per the Power Purchase Agreement. Details of the WEGs installed under the proposed CDM project are provided in Table 1.

Table 1
Details of the WEGs installed under the proposed CDM project

S. No	Company	WEG Capacity (KW)	Machine Nos	Machine Make	M/c. locations
1	MSPL	1x950	GR-11	Vestas RRB	Guddadarangavana Halli
2	MSPL	5x950	GR-1, GR-2, GR-3, GR-4, GR-5	Vestas RRB	Guddadarangavana Halli
3	RMMPL	2x950	GR-6, GR-17	Vestas RRB	Guddadarangavana Halli, Chikkappana Halli
4	RMMPL	1x750	GON4	Vestas RRB	Gonur Village

As per the Central Electricity Authority (CEA), General Review 2006, Table 2.4, the Installed electricity generation capacity as on 31st March 2005 in the Southern Regional power grid is 31876.39 MW. Of this, about 44% constitutes power generated from fossil fuel sources, 33% from hydropower, 8% from gas and about 6% from wind power. This project activity thereby generates cleaner and more sustainable electricity and sells it to the State grid thereby displacing electricity that would have been generated from a predominantly thermal source.

The project assists in the sustainable development of the Country, and the State of Karnataka by reducing Karnataka's dependency on fossil fuels, reducing local air pollution, providing emission free clean electricity and providing employment to rural youth both during the construction phase and the entire lifetime of the project.

A.3. Project participants:

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Bangalore Electrical Supply Company (BESCOM) and MSPL are the two project participants in the proposed CDM project. Of the two project participants BESCOM will be the larger beneficiary (more than 50%) of the project. As per the understanding between the two participants, MSPL will act as a facilitator and point of contact for the proposed CDM project activity. MSPL has entered into contractual agreements with the sister concern, RMMPL to carry out the CDM project activity on their behalf.

For clarity in dealings, it has been decided that MSPL Limited shall be the single point contact for all communication with the CDM Executive Board and the National CDM Authority. MSPL Limited shall act as a coordinator for providing all relevant information during this exercise. Information regarding the sharing of CERs shall be provided as and when need arises.

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)
BESCOM (host party)	Public entity	Yes
MSPL (host party)	Private entity	Yes

A.4. Technical description of the small-scale project activity:

As temperature rises during the day, the air above the land surfaces gets heated, becomes lighter and moves upward creating a low air pressure zone. Comparatively colder air from sea surface rushes to low-pressure land area. In the night the process gets reversed. This continuous change in air pressure due to variation in temperature ensures continuous flow of air on surface of earth. As an alternative to the fossil fuels, the technology to produce electricity from wind is receiving serious attention throughout the world. The wind strikes the blade, which in turn rotates an electrical generator through a transmission mechanism. The whole system is termed as Wind Electric Generator (WEG).

The wind speed is influenced by several geo-climatic features like weather conditions, plantation, topography of site etc. and consequently power produced by wind is seasonal, constantly variable and highly site specific.

Under the proposed CDM project activity, eight 950 KW and one 750 KW Wind Electric Generator machines from Vestas RRB (formerly NEG Micon) have been installed. The NM 48/750 kW WEG with a rated output of 750 kW is one of the machines well known for its best performance. The NM 48/750 kW WEG is a stall regulated machine with a cut-in speed of 4 m/s and a cut-out speed of 25 m/s. The nominal wind speed requirement for this machine is 16 m/s. The NM 48/750 kW machine is type tested and certified by DNV, Denmark A/S.

The NM 54/950 kW Power Trim WEG with a rated output of 950 kW is a stall regulated machine with a cut-in speed of 3.5 m/s and a cut-out speed of 25 m/s. The NM 54/950 kW machine is type tested and certified by DNV, Denmark A/S. The computer based control system of Power – Trim gathers and processes information on wind speeds, air density (temperature/ pressure) and blade alignment. The information is correlated with the calculated power production at a given stall level and should the actual power production be less that the calculated power production, the system changes the pitch angle. This is achieved with the help of the Power-Trim hub.

The technical specifications of the WEGs are as mentioned in Table 2.

Table 2
Technical Specifications of project installed WEGs

S.No.	Parameter	WEG 750	WEG 950
	Operational parameters		
1	Nominal Output (KW)	750	950
2	Power Regulation	Stall	Stall
3	Cut – in (m/s)	4	3.5
4	Cut – out (m/s)	25	25
	Rotor		
5	Rotor diameter (m)	48.2	54.5
6	Rotor swept area (m2)	1824	2333
7	Number of blades	3	3
8	Rotor revolutions (rpm)	22/15	22/15
9	Rotor placing	Upwind Rotor	Upwind Rotor
	Brake System		

10	Blade Tip air brake	Hydraulic, fail safe	Hydraulic, fail safe
	Disk Brake	Hydraulic, fail safe	1 pcs. Hydraulic, fail safe
	Drive Train		
11	Gear Type	Planetary – parallel axle	Planetary – parallel axle
12	Ratio	1:67.5	1:67.5 (1:81.0 – 60 Hz)
13	Main shaft	Forged shaft and flange	Forged shaft and flange
14	Main bearing	Spherical roller bearing	Spherical roller bearing
15	Cooling	Heat exchanger with pump	Heat exchanger with pump
	Generator		
16	Type	Asynchronous, 4/6 pole	Asynchronous, 4/6 pole
17	Nominal Voltage (V)	690	690
18	Nominal Frequence (Hz)	50	50
19	Name plate rating (kW)	750/200	950/200
20	Cooling	Liquid cooled with pump	Liquid cooled with pump
	Yaw system		
21	Type	Ball bearing	Sliding bearing
22	Yaw brake	3 Friction brake/ motor brake	
23	Drive mechanism	4 electrical planetary gears	3 electrical planetary gears
	Tower		
24	Type	Conical, steel, painted	Conical, steel, painted
25	Hub Height	According to type approvals	According to type approvals
	Controller		
26	Type	Computer controlling	Computer controlling
27	Computer controlling	Soft by thyristors	Soft by thyristors
28	Capacitor bank	No – load compensated	Generator no load compensation
29	Remote Control	By modem	By modem
	Sensors		
30	RPM sensors	Rotor, generator, yaw system	Rotor, generator, yaw system
31	Temperature sensors	Gear, generator, controller	Gear, generator, controller, ambient
32	Thermal sensors/ warning	Main switch, engine protection	
33	Vibration sensor	Nacelle, rotor	Nacelle, rotor
34	Meteorology	Anemometer, wind vanes, thermometer	Anemometer, wind vanes
35	Hydraulic systems	Pressure sensitive switches, pressure transducer	Pressure transducer
	Lightning protection		
36	According to standard	IEC 1024	IEC 1024 Class 1
37	Blades	Receptor in the blade tips	Receptor in the blade tips
38	Nacelle	Arial	Air rod

Once the wind electricity is generated by the turbines described above, it is sent via transmission lines to the consumers via the existing grid transmission structure. The figure below describes the transmission of the electric power generated from the turbine to the consumer via the grid.

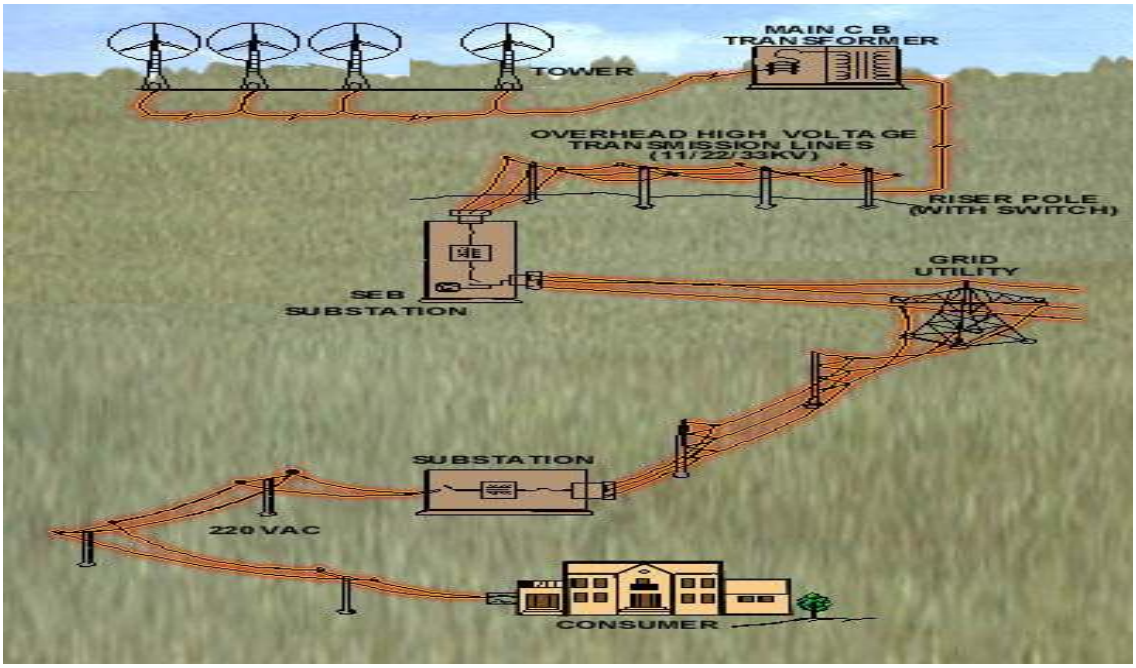

Figure 1: Transmission Line Diagram for wind power

A.4.1. Location of the small-scale project activity:

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India

A.4.1.1. Host Party(ies):

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1. Bangalore Electrical Supply Company
2. MSPL Limited

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

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Karnataka

A.4.1.3. City/Town/Community etc:

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Guddarangavana Halli, District Chitradurga

A.4.1.4. Details of physical location, including information allowing the unique identification of this small-scale project activity :

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The proposed CDM project is located at 14°18'04.0" latitude and 76°23'39.5" longitude in Guddarangavana Halli, District Chitradurga in Karnataka.

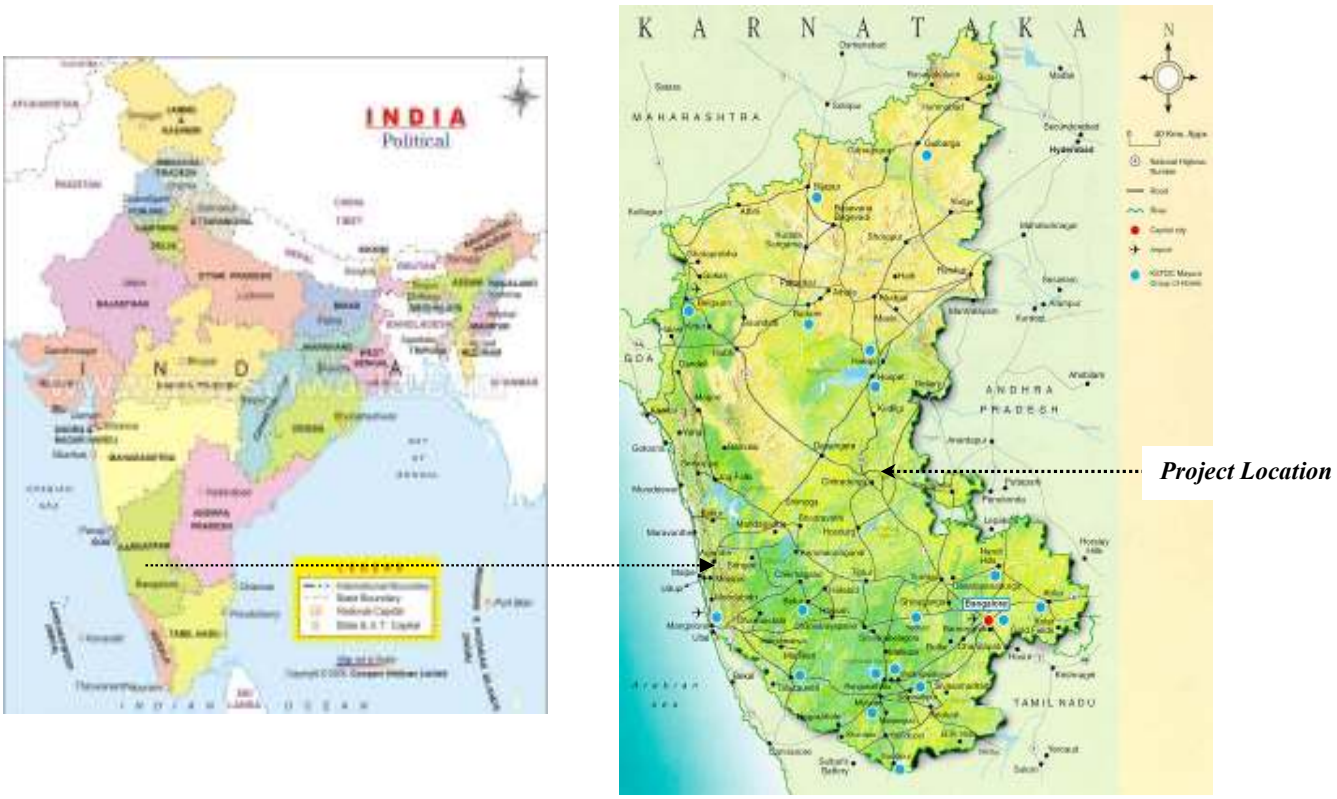

Figure 2: Location of proposed CDM project at Guddarangavana Halli, District Chitradurga, Karnataka

A.4.2. Type and category(ies) and technology/measure of the small-scale project activity:

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The renewable electricity generation capacity of the proposed CDM project is 8.35 MW, which is less than the maximum qualifying capacity of 15MW. The proposed CDM project activity qualifies for the simplified modalities and procedures for the small scale CDM project activities. The project activity utilizes the wind potential for power generation and exports the generated electricity to the grid. According to small-scale CDM modalities the project activity falls under:

Scope – 1: Energy Industries (renewable/non-renewable sources)

Type – 1: Renewable Energy Projects

A.4.3 Estimated amount of emission reductions over the chosen crediting period:

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Considering a plant load factor of 28%, derived from the actual power generated data from each machine over the last year, and taking average weighted emission factor as 0.74 $kgCO_2e$/ kWh for the generation mix (as per the Central Electricity Authority "CO2 Baseline Database for the Indian Power Sector"., Version 2.0, June 2007) the project activity is expected to reduce 15697 tonnes of CO2 annually.

Table below gives the estimated about of emission reduction during the first crediting period. These projections have been made considering that the project will get registered in the year 2008 and the first crediting period of seven years will start on 1st April 2008.

Years	Estimation of annual emission reductions in tonnes of CO2 e
April 2008 – March 2009	15697
April 2009 – March 2010	15697
April 2010 – March 2011	15697
April 2011 – March 2012	15697
April 2012 – March 2013	15697
April 2013 – March 2014	15697
April 2014 – March 2015	15697
Total Estimated Emission Reductions (tonnes of CO2e)	**109879**
Total Number of crediting years	**7 years (renewable)**
Annual Average of the estimated emission reductions over the first crediting period of seven years (tonnes of CO2e)	**15697**

A.4.4. Public funding of the small-scale project activity:

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The investment for installation of WTG and creation of related infrastructure has been done by MSPL and RMMPL using their own funds. There is no public funding involved in this project activity. No ODA has been used for the project.

A.4.5. Confirmation that the small-scale project activity is not a debundled component of a large scale project activity:

According to paragraph 2 of Appendix C to the Simplified Modalities and Procedures for Small-Scale CDM project activities (FCCC/CP/2002/7/Add.3), a small-scale project is considered a debundled component of a large project activity if there is a registered small-scale activity or an application to register another small-scale activity:

- With the same project participants
- In the same project category and technology; and
- Registered within the previous two years; and
- Whose project boundary is within 1km of the project boundary of the proposed small scale activity

The project participants of the proposed CDM project have not registered or applied for registration of any CDM project in the past two years. The proposed CDM project is not a debundled component of a larger project activity.

SECTION B. Application of a baseline and monitoring methodology

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

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The methodology applicable to this project activity is "Grid connected Renewable Electricity Generation - AMS I.D.", Version 13, Scope 1 (14 December 2007)

B.2 Justification of the choice of the project category:

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In accordance with Appendix B of the simplified modalities and procedures for small-scale CDM project activities, the project category is categorized as Type – I.D.: Version 13, Scope 1, "Grid Connected renewable electricity generation". Category ID is applicable to projects that use renewable energy technologies that supply electricity to a grid.

The proposed CDM project is leading to reduction in the emission of GHG due to the switching of the fuel for power generation (substitution of grid power which is primarily generated in coal based power plant with power generated in wind turbines using renewable energy of wind).

The applicability criteria of the above methodology in the context of the proposed CDM project are as follows:

1. The proposed CDM project comprises renewable energy generation units, such as photovoltaics, hydro, tidal/wave, wind, geothermal and renewable biomass, that supply electricity to and displace electricity from an electricity distribution system that is or would have been supplied by at least one fossil fuel fired generating unit. The proposed CDM project is supplementing the power needs of the Southern grid with clean wind power which otherwise is fed by fossil fuel based power plants. Thus, the proposed CDM project displaces 8.35 MW of electricity by renewable means (through wind power) that would otherwise have been generated through fossil fuel sources.

2. Approved methodology ID stipulates that if the unit added has both renewable and non-renewable components (e.g.. a wind/diesel unit), the eligibility limit of 15MW for a small-scale CDM project activity applies only to the renewable component. If the unit added co-fires fossil fuel, the capacity of the entire unit shall not exceed the limit of 15MW. The proposed CDM project falls under this eligibility limit of 15 MW as the electricity generation potential of the proposed CDM project is 8.35 MW of wind power.

As is therefore evident, the proposed CDM project meets all the applicability criteria set out under the selected small scale methodology and hence the project category is applicable to the project.

B.3. Description of the project boundary:

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In accordance with the approved small scale methodology ID, the boundary of the proposed CDM project will be the physical boundary of the nine commissioned wind energy generator machines located at GR Halli, Karnataka.

As per AMS.I.D/Version 13/Sectoral Scope (14 December 2007), the project boundary encompasses the physical, geographical site of the renewable generation. Thus, the project boundary for the proposed CDM project is the physical boundary encompassing the WEG installations, the metering equipment for each generator and corresponding substation that acts as a node between generation point and grid. However, the grid is not a part of project boundary.

The project boundary is diagrammatically represented in **Figure 3** below:

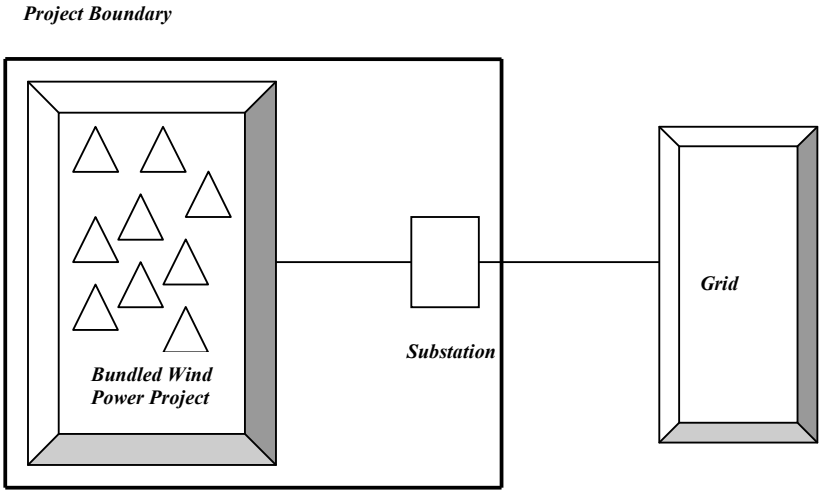

Figure3: Diagrammatic Representation of Project Boundary

B.4. Description of baseline and its development:

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The project category applicable to the proposed CDM project is AMS ID. Accordingly, the energy baseline being considered is as directed in paragraph 9 of the AMS.I.D/Version 13, that provides that the applicable baseline is the energy (in kWh) produced by the renewable generating unit multiplied by an emission coefficient (measured in kg CO2e/kWh) calculated in a transparent and conservative manner as:

(a) A combined margin (CM), consisting of the combination of operating margin (OM) and build margin (BM) according to the procedures prescribed in the approved methodology ACM0002. Any of the four procedures to calculate the operating margin can be chosen, but the restrictions to use the Simple OM and the Average OM calculations must be considered.

OR

(b) The weighted average emissions (in kg CO2e/kWh) of the current generation mix. The data of the year in which project generation occurs must be used. Calculations must be based on data from an official source (where available) and made publicly available.

With the purpose of providing a ready reference for the emission coefficients to be used in CDM projects, the Government of India, has published, "CO2 Baseline Database for the Indian Power Sector", Version 2.0, June 2007. This database is an official publication of the Government of India for the purpose of CDM baselines. It is based on the most recent data available to the Central Electricity Authority.

As per the database, the emission coefficients of the Southern Regional Grid for the financial year 2005-06 (April 2005 – March 2006) *(adjusted for inter-regional and cross-border electricity transfers), in tCO2/MWh* are as described in Table 4 below:

Table 4: Emission Coefficient Values for Southern Grid as per CEA database

S.No	***Emission Coefficient Type***	***Value***	***Description***
1	*Weighted average*	*0.74*	The weighted average emission factor describes the average CO2 emitted per unit of electricity generated in the grid. It is calculated by dividing the absolute CO2 emissions of all power stations in the region by the region's total net generation. Net generation from so-called low-cost/must-run sources (hydro and nuclear) is included in the denominator.
2	*Simple operating margin (OM)*	*1.01*	The operating margin describes the average CO2 intensity of existing stations in the grid which are most likely to reduce their output if a CDM project supplies electricity to the grid (or reduces consumption of grid electricity). "Simple" denotes one out of four possible variants listed in ACM0002 for calculating the operating margin.2 The simple operating margin is obtained by dividing the region's total CO2 emissions by the net generation of the stations serving the region *excluding* low-cost/must-run sources. In other words, the total emissions are divided by the total net generation of all thermal power stations. Hydro and nuclear qualify as low-cost/must-run sources, and their net generation is therefore excluded from the denominator.
3	*Build margin (BM)*	*0.72*	The build margin reflects the average CO2 intensity of newly built power stations that will be (partially) replaced by a CDM project. In accordance with ACM0002, the build margin is calculated in this database as the average emissions intensity of the 20% most recent capacity additions in the grid based on net generation. Depending on the region, the build margin covers units commissioned in the last five to ten years.
4	*Combined margin*	*0.86*	The combined margin is a weighted average of the simple

	(CM)		operating margin and the build margin. By default, both margins have equal weights (50%). However, CDM project developers may choose to argue for different weights. In particular, for intermittent and non-dispatchable generation types such as wind and solar photovoltaic, ACM0002 allows to weigh the operating margin and build margin at 75% and 25%, respectively (see ACM0002, Version 06). However, the combined margins shown in the database are calculated based on equal weights.

Following Step b) in accordance with the provisions in AMS ID described above, for the proposed CDM project, the weighted average emission coefficient (in kg CO2e/kWh) of the current generation mix in southern Indian grid has been considered for determining the emission in the baseline. Accordingly, the emission factor considered is 0.74 t CO_2e/MWh (0.74 kg CO2e/kWh). In order to determine GHG mitigation in a conservative manner, no transmission and distribution losses have been considered. In order to determine the emission in a baseline scenario, the emission factor is multiplied by the net power generated by the wind energy generators. The project emission in the proposed CDM project has been taken as zero t CO_2e/MWh, as wind is a zero GHG emitting renewable form of energy.

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 small-scale CDM project activity:

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The new wind electric generators installed in the proposed CDM project substitute the baseline consumption of fossil fuel operated power plants with cleaner zero GHG emitting fuel (wind) to operate the wind power plant. Thus, more carbon intensive fossil fuels are substituted with zero carbon intensive fuels for the operation of the proposed CDM power plant.

Preferential power purchase tariff of BESCOM prompted MSPL to undertake the proposed CDM project activity. BESCOM on its part announced the preferential power purchase tariff considering that the cost of power generation using WEG is comparatively higher. The decision to offer higher power purchase price was solely aimed at the objective of promoting wind power generation in the state of Karnataka and considering that the loss to BESCOM will in part be compensated due to some benefits under CDM.

Thus in the absence of CDM the proposed CDM project would not have attracted investment from a private party like MSPL. MSPL on its part considered that investment in WEG is only marginally viable and the part share of CDM benefits that it will get due to the proposed CDM project activity will provide it some additional incentives to invest in WEG. Thus CDM benefits played a major role in creation of the power generation facilities under the proposed CDM project.

According to the Attachment A to Appendix B, project participants are to provide an explanation to show that the project activity would not have occurred anyway due to at least one of the following barriers:

(a) Investment barrier
(b) Technological barrier
(c) Barrier due to prevailing practice
(d) Other barriers: without the project activity, for another specific reason identified by the project participant, such as institutional barriers or limited information, managerial resources,

organizational capacity, financial resources, or capacity to absorb new technologies, emissions would have been higher.

Investment Barriers

In the absence of higher purchase price offered by BESCOM, MSPL would not have invested in the WEG units. This is largely due to the fact that a lower power purchase price would have rendered the project unviable. BESCOM could offer the higher purchase price for the power only after it considered that some of the losses will be off set due to the benefits available under CDM. Determination of the tariff for purchase of power is carried out by the state electricity regulatory commission. In this case it was done by Karnataka Electricity Regulatory Commission (KERC). The state electricity regulatory commissions on there part carry out a detailed cost of generation and techno economic analysis while deciding the power purchase price. In this case the higher power purchase price was allowed and it was considered that the losses to the state utilities will to some extent be compensated by the benefits due to CDM.

Thus it is quite evident that in the absence of CDM benefits the project would not have got implemented. Mention of the CDM benefits to the state utility in the power purchase agreements clearly demonstrates that CDM was an important consideration which facilitated implementation of the project.

As per Power Purchase Agreements (PPA) between Bangalore Electrical Supply Company and MSPL / RMMPL for the power generated from the various WEGs the benefit accruing on account of carbon credit shall be shared between the Corporation and MSPL.

Other Barrier

Effect of weather conditions on the generation from renewables

Renewable energy in the Southern part of India, specially Hydro and Wind is heavily dependent on the monsoon situation. There are no perennial rivers for hydro power projects and the wind density is highest only during the monsoons. The lack of proper monsoon rainfall affects both the hydro and wind power projects severely. Continuous droughts over three years led to a drop in output from renewable energy projects in the entire Southern region, including Karnataka. This affects the Wind projects as they are smaller in size and the reduced generation affects the projected income.

B.6. Emission reductions:

B.6.1. Explanation of methodological choices:

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The project activity meets the eligibility criteria to use simplified modalities and procedure for small scale CDM project activities as set out in paragraph 6 (c) of decision 17/CP.7. The total installed capacity of the project is 8.35 MW, which is less than the limit of 15 MW prescribed for small scale project. Moreover, being a renewable energy project, the project emissions are zero.
The baseline and monitoring methodology being used for the project is AMS ID. Accordingly the emission reduction for the project will be determined.

The proposed CDM project will supply power to the regional grid of the southern part of the country. This is based on the consideration of free flow of electricity among the member states and the union territory through the Southern Region Load Dispatch Centre (SRLDC). Thus the entire southern grid is considered as a single entity for estimation of the emissions in the baseline.

The monitoring is the part of the baseline methodology. As explained earlier, the baseline methodology is applicable to the project activity and hence the monitoring protocol given in the methodology is applicable to the project activity. Accordingly the emission in the baseline scenario will be determined using the following formula

BEy = (EGy) x EFy

Where
BEy = Baseline emissions (in tCO2e)
EFy = Baseline Emissions Factor in tCO2/MWh (fixed at 0.74 tons of CO2 equivalent / MWh)
EGy = Net electricity supplied by the project activity to the grid in MWh

Monitoring of the baseline emissions will be done by monitoring the power supplied to the grid. For this purpose the electronic meters installed at each of the WEG will be used.

As wind power is a zero GHG emission technology there will not be any project emissions. Some power gets used for maintenance of the common facilities of the wind farm. During lean phases (when the WEG are not generating power) some power gets drawn from the grid for maintenance of the common facilities. This aspect is taken care of as baseline emissions are computed on the net power supplied to the grid. For the purpose of determining the net power, two vector metes are installed at the point of power transmission to the grid.

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

(Copy this table for each data and parameter)

Data / Parameter:	EGy
Data unit:	MWh
Description:	Net Electricity supplied by proposed CDM project and transmitted to grid
Source of data used:	Two way vector Electronic Meters in showing electricity supplied to grid by the WEG
Value applied:	Will vary and will be available from monitoring
Justification of the choice of data or description of measurement methods and procedures actually applied :	The data can be very accurately measured. The meters installed on sub stations (grid interconnection point) will be used to measure the mentioned variable on a continuous basis. Every month these meter readings will be recorded by plant personnel, these records will be archived for crosschecking yearly figures. The meters at the sub station will be two-way meters and will be in custody of SEB. SEB will take the readings in these meters and the same reading may be used to determine the net power wheeled to the grid and determine the extent of mitigation of GHG over a period of time.
Any comment:	

Data / Parameter:	EFy
Data unit:	tCO2/MWh
Description:	Baseline Weighted Average Emission Factor for proposed CDM project in the Southern Grid of India
Source of data used:	Emission Factor specified by Central Electricity Authority, Government of India, for the Southern Grid of the country
Value applied:	Fixed Reference Value of 0.74 as per database of the Central Electricity Authority, Government of India, for the Southern Grid of the country and as applicable to the proposed CDM project
Justification of the choice of data or description of measurement methods and procedures actually applied :	Not applicable, as fixed reference value is being used for the first renewable crediting period.
Any comment:	The value is fixed for the first crediting period and will be revised for the subsequent crediting periods.

B.6.3 Ex-ante calculation of emission reductions:

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Year	Variable	Fixed (for 1st Crediting Period)	Baseline emissions Calculated	Project Emissions	Emission Reductions
	EGy (MWh)	EFy (tCO2e/ MWh)	BEy (tCO2e)	(tCO2e)	(tCO2e)
April 2008 – March 2009	21212	0.74	15697	0	15697
April 2009 – March 2010	21212	0.74	15697	0	15697
April 2010 – March 2011	21212	0.74	15697	0	15697
April 2011 – March 2012	21212	0.74	15697	0	15697
April 2012 – March 2013	21212	0.74	15697	0	15697
April 2013 – March 2014	21212	0.74	15697	0	15697
April 2014 – March 2015	21212	0.74	15697	0	15697
Total for first crediting period					**109879**

As per the methodology AMS ID, if the energy generating equipment is transferred from another activity or if the existing equipment is transferred to another activity, leakage is to be considered. However, in the proposed CDM project, the wind power project is a new project, therefore, no leakage has been considered.

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

>>

Year	Estimation of project activity emissions (tCO2e)	Estimation of baseline emissions (tCO2e)	Estimation of leakage (tCO2e)	Estimation of overall emission reductions (tCO2e)
April 2008 – March 2009	0	15697	0	15697
April 2009 – March 2010	0	15697	0	15697
April 2010 – March 2011	0	15697	0	15697
April 2011 – March 2012	0	15697	0	15697
April 2012 – March 2013	0	15697	0	15697
April 2013 – March 2014	0	15697	0	15697
April 2014 – March 2015	0	15697	0	15697
Total (tonnes of CO2e)	**0**	**109879**	**0**	**109879**

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

B.7.1 Data and parameters monitored:	
(Copy this table for each data and parameter)	
Data / Parameter:	**EGy (Net Electricity supplied to the grid by the WEGs)**
Data unit:	MWh
Description:	Monthly recording
Source of data to be used:	Two way vector Electronic Meters showing electricity supplied to grid to be measured
Value of data	Will vary and will be obtained from monitoring
Description of measurement methods and procedures to be applied:	Net electricity generated in the WEG will be determined using a two way vector electronic energy meter installed at the outlet of each WEG. The meter used will be of integrator type. The difference of the two readings will be taken as the electricity generated during the period under monitoring.
QA/QC procedures to be applied:	The measurement of the electricity generated using an electronic meter as installed in the WEG machine and at the substation is considered to be a reliable method for measurement of electricity generated. The additional meters installed at the sub stations (grid interconnection point) will be used to measure the mentioned variable on a continuous basis and shall act as a cross check. Every month these meter readings will be recorded by site in-charge and the state utility personals and the records will be archived for crosschecking yearly figures. The meters at the sub station will be two-way meters. The readings in these meters may be used to determine the net power wheeled to the grid and determine the extent of mitigation of GHG over a period of time. Calibration of the energy meters being used will be carried out regularly as per the standard practice.
Any comment:	

Data / Parameter:	EFy
Data unit:	tCO2e/ MWh
Description:	Weighted Average Emission factor of Southern Grid as per CEA database for power generation in baseline
Source of data used:	Emission Factor specified by Central Electricity Authority, Government of India, for the Southern Grid of the country
Value of data:	0.74
Justification of the choice of data or description of measurement methods and procedures actually applied :	Not applicable, as fixed reference value is being used for the first renewable crediting period.
Any comment:	

B.7.2 Description of the monitoring plan:

>>

The proposed CDM project leads to mitigation of GHG due to the substitution of fossil fuel generated power in the baseline with zero GHG emitting wind based power project. The monitoring of the emission reduction will be carried out by measuring the net electricity supplied to the grid by the proposed CDM project with the help of two way vector type electronic meters installed on each substation.

The WEGs supplied by Vestas RRB are certified to ISO 9001. Also, each project executed by Vestas RRB involves an Operations and Maintenance Agreement that is signed with the project promoter. Vestas RRB also has adequate and technically qualified site managers to ensure constant monitoring of the installed wind turbines.

The proposed CDM project activity has been implemented by MSPL Ltd., and BESCOM at the nine WEG locations at GR Halli, Chitradurga, in Karnataka. The CDM project will be looked after by the manager responsible for operation of the wind energy generating machines at the project site. Daily operations of the wind energy generating machines will be carried out by the staff responsible for the operation of the WEGs.

The meters used for recording the electricity generation will be of integrator type. The electricity generated will be recorded on a daily basis. The data will be captured and stored electronically. As a separate measure, the same data will be entered in the log book on change of every shift.

Measuring instruments of all the parameters covered under the monitoring plan which are required to be monitored regularly will be calibrated as per maintenance schedule.

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

>>

Date of completion of the application of the baseline and monitoring methodology: 21 January, 2008

Name of responsible person (s)/ entity (ies) for application of the above:

Dinesh Aggarwal
Deloitte Touche Tohmatsu India Pvt. Ltd. (DTTIPL)
MCT House, One Okhla Centre,
Block A,
Okhla Institutional Area,
New Delhi – 110025
Phone: 91-11-66622000
Fax: 91-11-66622011
Email: daggrawal@deloitte.com

SECTION C. Duration of the project activity / crediting period

C.1 Duration of the project activity:

The duration of the proposed CDM project activity is 20 years.

C.1.1. Starting date of the project activity:

>>
Starting date of the proposed CDM project activity is 04/03/2003.

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

>>
20 years

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

Renewable crediting period has been chosen for the proposed CDM project activity.

C.2.1. Renewable crediting period

The first crediting period will start for seven years from the date of registration of the project. The crediting period will be renewed twice during the project lifetime after updating the project baseline emission factor.

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

>>
The first crediting period will start from the date of registration of the project with CDM Executive Board. The expected start date of the crediting period is 01/04/2008.

C.2.1.2. Length of the first crediting period:

>>
Seven years

C.2.2. Fixed crediting period:

Not applicable

C.2.2.1. Starting date:

>>
Not applicable

C.2.2.2. Length:

>>
Not applicable

SECTION D. Environmental impacts

>>

D.1. If required by the host Party, documentation on the analysis of the environmental impacts of the project activity:

>>

Wind power is one of the cleanest sources of renewable energy, with no associated emissions and waste products. In India, wind power projects do not require an Environmental Impact Assessment.

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:

>>

Not Applicable

SECTION E. Stakeholders' comments

>>

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

>>

The stake holders in the present context were defined as the parties and individuals who are either affected or are perceived to be affected by the proposed CDM project activity. The proposed activity pertains to replacement of grid power with the power generated in WEGs. The proposed CDM project activity is not likely to have any adverse impact on any of stake holders.

A list of stake holders was prepared and for inviting the comments by the stake holders, a joint meeting of the stake holders was organised. Before the start of the meeting, the agenda of the meeting and the purpose was explained to the participants. Presentation regarding climate change, Kyoto Protocol and CDM was made to the stake holders in order to familiarise them regarding the concept. Information regarding other global environmental issues like ozone depletion and Montreal Protocol was also provided during the meeting. This was followed by a presentation on the proposed CDM project. The presentations were made in local language (Kannada, English and Hindi). The list of the stake holders who attended the meeting is provided as Appendix to this document. After the briefing / presentations, the stake holders were asked to provide their comments / suggestions for the proposed project.

E.2. Summary of the comments received:

>>

Some of the comments and queries raised by the participants are as follows:

- Local residents pointed out to the fact that the hills are turning barren and plantation on a large scale is required to be carried out

- Some of the local habitants felt that the presence of the wind turbines moved away rain clouds and that was the reason the monsoons were not bringing in any rain to the area and causing crop failure.

- Local residents expressed apprehension that wind mills may increase the heat in the neighboring areas.
- One of the stakeholder wanted to know what will happen beyond 2012 (beyond first commitment period)
- One of the stakeholders pointed out that hydro power generation can be one of the methods to mitigate emission of GHG and wanted to know what the local governments are doing to promote hydro power in the state.
- The potential of solar energy as a technology option was also pointed out by the stakeholders. It was pointed out that for promotion of solar energy more grants should be given as it is capital intensive.
- Some of the stakeholders pointed out the need to organize workshops and seminars in the educational institutes to raise awareness regarding climate change and other related issues

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

>>

The stake holders present during the meeting appreciated the initiatives taken by MSPL and the state government to address the local and global environmental issues. They also appreciated the fact that establishment of wind farms has provided local level employment opportunities. The efforts being undertaken by MSPL towards greening the hills by undertaking the activity of plantation was highlighted by the management of MSPL.

There were no specific negative comments. There were some apprehensions based on misconceptions rather than actual facts and these were cleared. Since there were no negative comments, there were no changes to Project activity. Thus no serious concerns or issues were raised regarding the Project.

The issues discussed were well understood and the local stakeholders did not have any issues with the Project being in the area. They well understood the fact that it would not interfere with their village and community.

Annex 1

CONTACT INFORMATION ON PARTICIPANTS IN THE PROJECT ACTIVITY

Organization:	MSPL Limited
Street/P.O.Box:	Baldota Enclave, Abheraj Baldota Road
Building:	
City:	Hospet
State/Region:	Karnataka
Postfix/ZIP:	583203
Country:	India
Telephone:	+91 8394 232002, 232003
FAX:	+91 8394 232333, 232444
E-Mail:	shirolkar@mspllimited.com
URL:	www.mspllimited.com
Represented by:	Mr. B.W.Shirolkar
Title:	General Manager (Operations)
Salutation:	Mr.
Last Name:	Shirolkar
Middle Name:	W
First Name:	B
Department:	Operations
Mobile:	9945680159
Direct FAX:	
Direct tel:	
Personal E-Mail:	shirolkar@mspllimited.com

Annex 2

INFORMATION REGARDING PUBLIC FUNDING

No public funding is involved in this project activity. The entire cost of the project has been borne by MSPL and RMMPL.

Annex 3

BASELINE INFORMATION

In accordance with Appendix B of the simplified modalities and procedures for small-scale CDM project activities, the project category is categorized as Type – ID: Version 13, Scope 1, "Grid Connected renewable electricity generation". Category ID is applicable to projects that use renewable energy technologies that supply electricity to a grid.

The proposed CDM project is leading to reduction in the emission of GHG due to the switching of the fuel for power generation (substitution of grid power which is primarily generated in coal based power plant with power generated in wind turbines using renewable energy of wind)

The applicability criteria of the above methodology in the context of the proposed CDM project are as follows:

1. The proposed CDM project comprises renewable energy generation units, such as photovoltaics, hydro, tidal/wave, wind, geothermal and renewable biomass, that supply electricity to and displace electricity from an electricity distribution system that is or would have been supplied by at least one fossil fuel fired generating unit. The proposed CDM project is supplementing the power needs of the Southern grid with clean wind power which otherwise is fed by fossil fuel based power plants. Thus, the proposed CDM project displaces 8.35 MW of electricity by renewable means (through wind power) that would otherwise have been generated through fossil fuel sources.

2. If the unit added has both renewable and non-renewable components (e.g.. a wind/diesel unit), the eligibility limit of 15MW for a small-scale CDM project activity applies only to the renewable component. If the unit added co-fires fossil fuel, the capacity of the entire unit shall not exceed the limit of 15MW. The proposed CDM project falls under this eligibility limit of 15 MW as the electricity generation potential of the proposed CDM project is 8.35 MW of wind power.

As is therefore evident, the proposed CDM project meets all the applicability criteria set out under the selected small scale methodology and hence the project category is applicable to the project.

The project category applicable to the proposed CDM project is AMS ID. Accordingly, the energy baseline being considered is as directed in paragraph 9 of the AMS.I.D/Version 13, that provides that the applicable baseline is the energy (in kWh) produced by the renewable generating unit multiplied by an emission coefficient (measured in kg CO2e/kWh) calculated in a transparent and conservative manner as:

(a) A combined margin (CM), consisting of the combination of operating margin (OM) and build margin (BM) according to the procedures prescribed in the approved methodology ACM0002. Any of the four procedures to calculate the operating margin can be chosen, but the restrictions to use the Simple OM and the Average OM calculations must be considered.

OR

(b) The weighted average emissions (in kg CO2e/kWh) of the current generation mix. The data of the year in which project generation occurs must be used. Calculations must be based on data from an official source (where available) and made publicly available.

With the purpose of providing a ready reference for the emission coefficients to be used in CDM projects, the government of India, has published, "CO2 Baseline Database for the Indian Power Sector", Version 2.0, June 2007. This database is an official publication of the Government of India for the purpose of CDM baselines. It is based on the most recent data available to the Central Electricity Authority.

As per the database, the emission coefficients of the Southern Regional Grid for the financial year 2005-06 (April 2005 – March 2006) *(adjusted for inter-regional and cross-border electricity transfers), in tCO2/MWh* are as described below:

Emission Coefficient Values for Southern Grid as per CEA database

S.No	***Emission Coefficient Type***	***Value***	***Description***
1	*Weighted average*	*0.74*	The weighted average emission factor describes the average CO2 emitted per unit of electricity generated in the grid. It is calculated by dividing the absolute CO2 emissions of all power stations in the region by the region's total net generation. Net generation from so-called low-cost/must-run sources (hydro and nuclear) is included in the denominator.
2	*Simple operating margin (OM)*	*1.01*	The operating margin describes the average CO2 intensity of existing stations in the grid which are most likely to reduce their output if a CDM project supplies electricity to the grid (or reduces consumption of grid electricity). "Simple" denotes one out of four possible variants listed in ACM0002 for calculating the operating margin.2 The simple operating margin is obtained by dividing the region's total CO2 emissions by the net generation of the stations serving the region *excluding* low-cost/must-run sources. In other words, the total emissions are divided by the total net generation of all thermal power stations. Hydro and nuclear qualify as low-cost/must-run sources, and their net generation is therefore excluded from the denominator.
3	*Build margin (BM)*	*0.71*	The build margin reflects the average CO2 intensity of newly built power stations that will be (partially) replaced by a CDM project. In accordance with ACM0002, the build margin is calculated in this database as the average emissions intensity of the 20% most recent capacity additions in the grid based on net generation. Depending on the region, the build margin covers units commissioned in the last five to ten years.
4	*Combined margin (CM)*	*0.86*	The combined margin is a weighted average of the simple operating margin and the build margin. By default, both margins have equal weights (50%). However, CDM project developers may chose to argue for different weights. In particular, for

			intermittent and non-dispatchable generation types such as wind and solar photovoltaic, ACM0002 allows to weigh the operating margin and build margin at 75% and 25%, respectively (see ACM0002, Version 06). However, the combined margins shown in the database are calculated based on equal weights.

Following Step b) in accordance with the provisions in AMS ID described above, for the proposed CDM project, the weighted average emission coefficient (in kg CO2e/kWh) of the current generation mix in southern Indian grid has been considered for determining the emission in the baseline. Accordingly, the emission factor considered is 0.74 t CO_2e/MWh (0.74 kg CO2e/kWh). In order to determine GHG mitigation in a conservative manner, no transmission and distribution losses have been considered. In order to determine the emission in a baseline scenario, the emission factor is multiplied by the net power generated by the wind energy generators. The CDM project emissions are taken as zero t CO_2e/MWh as wind is zero GHG emitting renewable form of energy.

Annex 4

MONITORING INFORMATION

The proposed CDM project leads to mitigation of GHG due to the substitution of fossil fuel generated power in the baseline with zero GHG emitting wind based power project. The monitoring of the emission reduction will be carried out by measuring the actual electricity supplied to the grid by the proposed CDM project with the help of electronic meters installed on each WEG as well as at the substation.

The WEGs supplied by Vestas RRB are certified to ISO 9001. Also, each project executed by Vestas RRB involves an Operations and Maintenance Agreement that is signed with the project promoter. Vestas RRB also has adequate and technically qualified site managers to ensure constant monitoring of the installed wind turbines.

The proposed CDM project activity has been implemented by BESCOM and MSPL Ltd. at the nine WEG locations at GR Halli, Chitradurga, in Karnataka. The CDM project will be looked after by the manager responsible for operation of the wind energy generating machines at the project site. Daily operations of the wind energy generating machines will be carried out by the staff responsible for the operation of the WEGs.

The meters used for recording the electricity generation will be of integrator type. The electricity generated will be recorded on a daily basis. The data will be captured and stored electronically. As a separate measure, the same data will be entered in the log book on change of every shift.

Measuring instruments of all the parameters covered under the monitoring plan which are required to be monitored regularly will be calibrated as per maintenance schedule.

- - - -

Appendix

List of Stakeholders who participated in the Stakeholder Consultation Meeting

Meeting with Stakeholders for Clean Development Mechanism (CDM) Project for 8.35 MW Wind Power project at Guddarangana Halli, Chitradurga, Karnataka of MSPL Limited

Venue: MSPL Limited Wind Power Project at GR Halli, Karnataka

Date: 17th May 2007

Agenda:

- To discuss general environmental and social concerns
- To discuss initiatives being undertaken by MSPL Limited to address the wellbeing of the environment and community/ employees
- To discuss proposed CDM project to address the issue of climate change/ global warming

Meeting Schedule:

- Welcome & Introduction – By MSPL Limited
- Introduction to Sustainable Development / Climate Change/ CDM – Deloitte
- Introduction to the Wind Power Project & Technology being used by MSPL Limited
- Discussion Forum:
  - ✓ Questions/ Comments/ Suggestions/ Issues
  - ✓ Response to Questions/ Comments/ Suggestions/ Issues

Attendance Sheet:

S.No.	Name	Organization	Address	Phone Number	Signature
1	[illegible]	[illegible]	[illegible]	–	[illegible]
2	[illegible]	[illegible]	[illegible]		[illegible]
3	[illegible]	[illegible]	[illegible]		[illegible]

Stake Holders Meeting - 8.35 MW Wind Power Project at Guddarangana Halli, Chitradurga, Karnataka of MSPL Limited

Page No. 1

S.No.	Name	Organization	Address	Phone Number	Signature
1	ರಾಮಣ್ಣ	ರೈತರು	ಗುಡ್ಡದ ರಂಗಪ್ಪನಹಳ್ಳಿ		ರಾಮಣ್ಣ
5	ಹನುಮಪ್ಪ	ರೈತರು	ಗುಡ್ಡದ ರಂಗಪ್ಪನಹಳ್ಳಿ		ಹನುಮಪ್ಪ
6	ನಿಂಗಪ್ಪ	ರೈತರು	ಗುಡ್ಡದ ರಂಗನಹಳ್ಳಿ		ನಿಂಗಪ್ಪ
7	ಹನುಮಂತಪ್ಪ	ರೈತರು	ಗುಡ್ಡದ ರಂಗನಹಳ್ಳಿ		ಹನುಮಂತಪ್ಪ
8	ರಂಗಣ್ಣ	ಕಂಟ್ರಾಕ್ಟರ್	ಗುಡ್ಡದ ರಂಗನಹಳ್ಳಿ		ರಂಗಣ್ಣ
9	ಲಕ್ಷ್ಮಣ	ರೈತರು	ಗುಡ್ಡದ ರಂಗನಹಳ್ಳಿ		ಲಕ್ಷ್ಮಣ
10	ಗೌರಮ್ಮ	ರೈತರು	ಗುಡ್ಡದ ರಂಗನಹಳ್ಳಿ		ಗೌರಮ್ಮ
11	ತಿಪ್ಪಣ್ಣ	ರೈತರು	ಗುಡ್ಡದ ರಂಗನಹಳ್ಳಿ		ತಿಪ್ಪಣ್ಣ

Stake Holders Meeting - 8.35 MW Wind Power Project at Guddarangana Halli, Chitradurga, Karnataka of MSPL Limited

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S.No.	Name	Organization	Address	Phone Number	Signature
12	S. Manjunatha	power process	66KV/33KV Gonur S/S Gonur. C.D. Hadurga	9880690 104	
13	S. Goorish	Power Process	66KV/33KV Gonur S/S Chitradurga	996545 9397	
14	Vishnu & Mahadeva	Suzlon	Jogimatti Chitradurga	94495 910261	
15	L. Brahmanand Gupta	Rotary club	6th cross malavara nagar Chitradurga	94480 21249	
16	Y. Chandra Sekharaiah	Rotary A.G.R. 2008-09 Rotary Trust Chairman.	3rd cross Shadakshara Sajjan Sadan Prashanthanagar Chitradurga	99800 53414	
17	Thomas Lot	Wind Energy Consultancy Services	# 39/A16 1st Loop D.B Sandra. Vidyanagar Bathalahalli	99458 5847	
18	Suraj	"	"	"	
19	Sanal	"	"	"	

Stake Holders Meeting - 8.35 MW Wind Power Project at Guddarangana Halli, Chitradurga, Karnataka of MSPL Limited

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S.No.	Name	Organization	Address	Phone Number	Signature
20	Shabiraj	Wind Energy Consultancy Services	#39/A 1st Floor D.B.Gandhi Vidyaranyapura Bangalore	..	
21	Nishand.	..	..	..	
22)	K. SUBRAMANIAN	PROJECT ASSISTANT C-WET	CENTER FOR WIND ENERGY TECHNOLOGY CHENNAI. C-WET	9486561286	K. Subra
23)	M.A. BALAJI	CENTRE FOR WIND ENERGY TECHNOLOGY	SURVEY NO. 657/1A2 PALLIKARANI, CHENNAI - 601302	044 - 2246398	M.A. Bala
24	N. Sampathkumar	Ananthapur Spinning Mills PVT LTD	No.82- KIADB Kelagote Gudlethimdapura	94482 79899	
25	Dayananda	Suzlon infrastructure services Ltd	Chitradurga site	94488 97510	
26	Ravishwara	Suzlon infrastructure services Ltd	Chitradurga site	94488 07498	

S.No.	Name	Organization	Address	Phone Number	Signature
27	[illegible]	S.S. Chitradurga	Jogimatti P.O. Chitradurga	9449890270	
28	Ravi C Navalli	S.S.C - Chitradurga	Jogimatti P.O. Chitradurga.	94489 90268	
29	Jagadeesha.	Shamuri Inspiring works.	Jagadeesha. Shamuri Inspiring works CTA	9880296213	
30	P. Vijayakumar	Pavan Wind Energy	Vijaykumar PWS Jogimatti Chitradurga	9480 725530	
31	R. Srinivas				R. Srinivas
32	[illegible]	Agriculture	GR Halli		[illegible]
33	[illegible]	"	"		[illegible]

Stake Holders Meeting - 8.35 MW Wind Power Project at Guddarangana Halli, Chitradurga, Karnataka of MSPL Limited

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S.No.	Name	Organization	Address	Phone Number	Signature
34	K. Mahendran				
35	Thampapathi	Sri Jayachamundi Trading Co., Chitradurga		94484 21391	
36	T. Aravind Kumar	Vestas		98459 40356	
37	Challa Pavan	Vestas			
38	Yuvaraj	Vestas			
39	Kaladhar				
40	K. Bala	Hindustan Ind. Pvt Ltd.	Ctd	98800 41985 98800 35761	

Stake Holders Meeting - 8.35 MW Wind Power Project at Guddarangana Halli, Chitradurga, Karnataka of MSPL Limited

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CDM Project.

Sl.No	Name	Designation	Name of company	Signature.
01	Malshekar.	Manager.	Suzlon	
02	Muthumoni	Sr. Engineer.	suzlon	
03	Ravi	Accounts	suzlon	
04	Ravishwara.	Sr. Engineer	"	
05	Nagaraj.	HT Incharge.	" "	
06	Sureshappa.	HR Admin.	suzlon	
07	Arawind	A&M	Vestas	
08	Bala.	Sub Station Incharge	Vestas	
09	Rajendrakumar	Engineer	Vestas	
10	Srikanth	Engineer	Vestas	
11	Manjunath.	Technician	Power Mech	
12	Nataraj		KPTC	
13.	Shanmugam.	Sr. engineer.	Vestas.	
14.	Balu	Area Incharge	Local core	
15.	Perumal	Accounts	Vestas	
16.	Ribbu	Customer Representative Incharge.	ESchange Groups	
17.	Kumar	Technician	Power Process	

Photographs of Stakeholder Consultation Meeting held at proposed CDM project site, Hospet, Karnataka on May 17th, 2007