



VALIDATION REPORT MADRAS CEMENTS LIMITED (MCL)

VALIDATION OF THE MCL WIND POWER PROJECT IN TAMIL NADU, INDIA

REPORT No.BVC/INDIA-VD/496.49/2013

REVISION No. 02

BUREAU VERITAS CERTIFICATION

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VALIDATION REPORT

Date of first issue: 22/06/2013	Organizational unit: Bureau Veritas Certification Holding SAS
Client: Madras Cements Limited	Client ref.: Mr. K. Selvanayagam


Summary:

Bureau Veritas Certification has conducted the validation of "MCL wind power project in TamilNadu, India", owned by Madras Cements Limited (MCL), which is located in Illuppainagaram, Anikkadavu, Thottampatti, Virugalpatti Villages, Periyapatti Wind Farm, Udumalpet region, Tirpur District, Tamil Nadu, India, on the basis of UNFCCC criteria for the CDM, as well as criteria given to provide for consistent project operations, monitoring and reporting. UNFCCC criteria refer to Article 12 of the Kyoto Protocol, the CDM rules and modalities and the subsequent decisions by the CDM Executive Board, as well as the host country criteria.

The validation scope is defined as an independent and objective review of the project design document, the project's baseline study, monitoring plan and other relevant documents, and consisted of the following three phases: i) desk review of the project design document and additional background documents; ii) follow-up interviews with project stakeholders; iii) resolution of outstanding issues and the issuance of the final validation report and opinion. The overall validation, from Contract Review to Validation Report & Opinion, was conducted using Bureau Veritas Certification internal procedures.

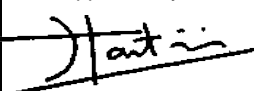
The first output of the validation process is a list of Clarification Requests, Corrective Actions Requests, and Forward Actions Requests (CLs, CARs and FARs), presented in Appendix A. Taking into account this output, the project proponent revised its project design document.

In summary, it is Bureau Veritas Certification's opinion that the project correctly applies the baseline and monitoring methodology ACM0002 Version 13.0.0 and meets all relevant UNFCCC requirements for the CDM and the relevant host country criteria. Bureau Veritas Certification thus requests the registration of the project as a CDM project activity.

Report No.: BVC/India -VD/496.19/2013	Subject Group: CDM
Project title: MCL wind power project in Tamil Nadu, India	
Work carried out by: Mr. V Senthil Kumar - Team Leader Mr. P Shelton Victor - Team Member	
Internal Technical Review carried out by:  Mr. Sanjay Patankar Specialist Supporting Internal Technical Reviewer: Mr. Hitesh Karandikar	
Date of this revision: 03/09/2013	Rev. No.: 02
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Indexing terms

Work approved by:



Mr Matthieu Martini

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Abbreviations

BVCH	Bureau Veritas Certification Holding SAS
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reductions
CL	Clarification Request
CO2	Carbon Dioxide
CO2e	Carbon Dioxide Equivalent
DOE	Designated Operational Entity
FAR	Forward Action Request
GHG	Green House Gas(es)
MCL	Madras Cements Limited
MoV	Means of Verification
MP	Monitoring Plan
PDD	Project Design Document
PLF	Plant Load Factor
PP	Project Participant
PPA	Power Purchase Agreement
TNEB	Tamil Nadu Electricity Board
TANGEDCO	Tamil Nadu Generation and Distribution Corporation Limited
UNFCCC	United Nations Framework Convention on Climate Change
VVS	Validation and Verification Standard



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1. INTRODUCTION

Madras Cements Limited has commissioned Bureau Veritas Certification to validate its CDM project "MCL wind power project in TamilNadu, India" (hereafter called "the Project") at Periyapatti, Udumalpet region, Tirpur District, Tamil Nadu, India.

This report summarizes the findings of the validation of the Project, performed on the basis of UNFCCC criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting.

1.1. Objective

The objective of a validation is to provide a thorough and independent third party assessment of the project design. In particular, the project's baseline, the monitoring plan, and the project's compliance with relevant UNFCCC and host country criteria are validated in order to confirm that the project design, as documented, is sound and reasonable, and meets the applicable CDM requirements and the identified criteria. Validation is a requirement for all CDM projects and is seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of certified emission reductions (CERs).

1.2. Scope

The validation scope is defined as an independent and objective review of the project design document, the project's baseline study and monitoring plan and other relevant documents. The information in these documents is reviewed against the requirements of paragraph 37 of the CDM M&Ps, the applicability conditions of the selected methodology and guidance issued by the Board.

The validation is not meant to provide any consulting towards the project participants. However, stated requests for clarifications and/or corrective actions may provide input for improvement of the project design.

1.3. Validation Team

The assessment team and internal technical reviewer team consist of the following personnel:

FUNCTION	NAME	TA 1.2	TASK PERFORMED*
Team Leader	Mr. V Senthil Kumar	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> DR <input type="checkbox"/> SV <input type="checkbox"/> RI <input type="checkbox"/> TR
Team Member	Mr. P Shelton Victor	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> DR <input checked="" type="checkbox"/> SV <input type="checkbox"/> RI <input type="checkbox"/> TR
Technical Specialist	N.A.	<input type="checkbox"/>	<input type="checkbox"/> DR <input type="checkbox"/> SV <input type="checkbox"/> RI <input type="checkbox"/> TR
Internal Technical Reviewer (ITR)	Mr. Sanjay Patankar	<input checked="" type="checkbox"/>	<input type="checkbox"/> DR <input type="checkbox"/> SV <input type="checkbox"/> RI <input checked="" type="checkbox"/> TR
Specialist supporting ITR	Mr. Hitesh Karandikar	<input checked="" type="checkbox"/>	<input type="checkbox"/> DR <input type="checkbox"/> SV <input type="checkbox"/> RI <input checked="" type="checkbox"/> TR



Financial Specialist	Mr. Jayaraman from M/s Karthikeyan & Jayaraman Associates	<input type="checkbox"/>	<input checked="" type="checkbox"/> DR <input type="checkbox"/> SV <input type="checkbox"/> RI <input type="checkbox"/> TR
Report Approval		<input type="checkbox"/>	<input checked="" type="checkbox"/> DR <input type="checkbox"/> SV <input checked="" type="checkbox"/> RI <input type="checkbox"/> TR

*DR = Document Review; SV = Site Visit; RI = Report issuance; TR = Internal Technical Review

2. METHODOLOGY

The overall validation, from Contract Review to Validation Report & Opinion, was conducted using Bureau Veritas Certification internal procedures.

In order to ensure transparency, a validation protocol was customized for the project, according to the version 03.0 of the Clean Development Mechanism Validation and Verification Standard, issued by CDM Executive Board at its 70th meeting on 23/11/2012 (/Ref-B1/). The protocol shows, in a transparent manner, criteria (requirements), means of validation and the results from validating the identified criteria. The validation protocol serves the following purposes:

- It organizes, details and clarifies the requirements a CDM project is expected to meet;
- It ensures a transparent validation process where the validator will document how a particular requirement has been validated and the result of the validation.

The completed validation protocol is enclosed in Appendix A to this report.

2.1. Review of Documents

The Project Design Document (PDD) (/Ref-A1/) submitted by M/s Madras Cements Limited and additional background documents related to the project design and baseline were reviewed.

Furthermore, cross checks were made between information provided in the PDD and information from sources other than those used.

To address Bureau Veritas Certification corrective action and clarification requests, M/s Madras Cements Limited revised the PDD and resubmitted it on 10/08/2013.

The validation conclusions presented in this report relate to the project as described in the PDD version 04 (/Ref-A2/).

2.2. Follow-up Interviews

On 28/09/2012, Bureau Veritas Certification performed a site visit and interviews with project stakeholders to confirm selected information and to resolve issues identified in the document review. Representatives of M/s Madras Cements Limited (the project owner) and M/s Bunge Emission Group (the consultant) were interviewed (see References). The main topics of the interviews are summarized in Table 1.

Table 1 Interview topics



Interviewed organization	Interview topics
M/s Madras Cements Limited. (the Project Owner)	<ul style="list-style-type: none"> ➤ Project background information and CDM consideration. ➤ Additionality. ➤ Project technology, operation and maintenance. ➤ Project approval and implementation status. ➤ Project management and monitoring plan. ➤ Stakeholder consultation process. ➤ Common practice in the area. ➤ Government policies related to the project activity.
Local Stakeholder	<ul style="list-style-type: none"> ➤ Project background in details ➤ Stakeholder comments ➤ Social and environmental impact of the project
M/s Bunge Emission Group (the Consultant)	<ul style="list-style-type: none"> ➤ Applicability of selected methodology. ➤ Baseline determination. ➤ Emission reductions calculation. ➤ Emission reduction monitoring plan.

2.3. Resolution of Clarification, Corrective and Forward Action Requests

The objective of this phase of the validation is to resolve issues that require further elaboration, research or expansion prior to Bureau Veritas Certification's positive conclusion on the project design.

A Corrective Action Request (CAR) is raised, if one of the following situations occurs:

- (a) The project participants have made mistakes that will influence the ability of the project activity to achieve real, measurable, verifiable and additional emission reductions;
- (b) The applicable CDM requirements have not been met;
- (c) There is a risk that emission reductions cannot be monitored or calculated.

A Clarification Request (CL) is raised, if information is insufficient or not clear enough to determine whether the applicable CDM requirements have been met.

A Forward Action Request (FAR) may also be raised during validation, to identify issues related to project implementation that require review during the first verification of the project activity.

To guarantee the transparency of the validation process, the issues raised, the responses provided by the project participants, the means of validation of such responses and references to any resulting changes in the PDD or supporting annexes are documented in the Validation Protocol in **Appendix A**.

2.4. Internal Technical Review

The validation report underwent an Internal Technical Review (ITR) before requesting registration of the project activity.



The ITR is an independent process performed to examine thoroughly that the process of validation has been carried out in conformance with the requirements of the validation scheme as well as internal Bureau Veritas Certification procedures.

The Team Leader provides a copy of the validation report to the reviewer, including any necessary validation documentation. The reviewer reviews the submitted documentation for conformance with the validation scheme. This will be a comprehensive review of all documentation generated during the validation process.

When performing an Internal Technical Review, the reviewer ensures that:

- The validation activity has been performed by the team by exercising utmost diligence and complete adherence to the CDM rules and requirements.
- The review encompasses all aspects related to the project which includes project design, baseline, additionality, monitoring plans and emission reduction calculations, internal quality assurance systems of the project participant as well as the project activity, review of the stakeholder comments and responses, closure of CARs and CLs during the validation exercise, review of sample documents.

The reviewer may raise Clarification Requests to the validation team and will discuss these matters with the Team Leader.

After the agreement of the responses to the Clarification Requests from the validation team as well as the PP(s), the finalized validation report is accepted for further processing such as uploading via the UNFCCC interface.

3. VALIDATION CONCLUSIONS

In the following sections, the conclusions of the validation are stated.

The findings from the desk review of the original project design documents and the findings from interviews during the follow up visit are described in the Validation Protocol in **Appendix A**.

The Clarification, Corrective and Forward Action Requests are stated, where applicable, in the following sections and are further documented in the Validation Protocol in **Appendix A**. The validation of the Project resulted in 08 CAR(s), 12 CL(s) and 00 FAR(s).

The CARs and CLs were closed out based on adequate responses from the Project Participant(s) which meet the applicable requirements. They have been reassessed before their formal acceptance and closure.

The number between brackets at the end of each section corresponds to the VVS paragraph.

3.1. Approval (43-44)

The letters of approval have been received and the following support documentation has been verified by Bureau Veritas Certification:



The DNA of India has issued a Letter of Approval (/Ref-A3/) on 23/04/2013 authorizing M/s Madras Cements Limited as the Project Participant and confirms that the Project contributes to India's (Host Country) Sustainable development. (/Ref-A3/)

Bureau Veritas Certification received these letters of approval from the project participants.

In accordance with para. 39 – 42/VVS, Bureau Veritas Certification considers that:

- (a) The letter confirms the Party is a Party to the Kyoto Protocol;
- (b) The letter confirms the participation is voluntary;
- (c) In the case of the host Party, the letter confirms that the proposed project activity contributes to the sustainable development of the country;
- (d) The letter refers to the precise proposed project activity title in the PDD being submitted for registration.
- (e) The letter of approval is unconditional with respect to the items above.
- (f) The letter of approval has been issued by the Host Party (India) DNA and is valid for the proposed project activity under validation.

3.2. Authorization (49)

The participation of project participant has been authorized by a Party of the Kyoto Protocol, as seen from the UNFCCC website [<http://maindb.unfccc.int/public/country.pl?country=in>] India has ratified the Kyoto Protocol on 26 August 2002.

The participation is approved by DNA of India and is accepted. The participation for project participant has been approved by a Party of the Kyoto Protocol. The Host Country Approval clearly states that the participation of the project participant in proposed project activity is voluntary and will contribute in sustainable development of the host country (India). The letter of approval was accorded to the Project participant under the Project ID no 1623/11/2012¹. The validation team concluded this by reviewing the original Host Country Approval (HCA) with reference no. 4/1/2013-CCC dated 23/04/2013 (/Ref-A3/) which describes the participation of M/s Madras Cements Limited being approved by the Government of India, which is a party of the Kyoto Protocol.

The host Party's DNA confirmed the contribution of the project to the sustainable development of the host Party. Refer to section 3.1 of this report. The project participant described contribution to sustainable developed as per four indicators of sustainable development stipulated by Ministry of Environment & Forests in India.

¹ http://cdmindia.gov.in/project_details_view.php?id=1894&oid=1&page=1&reporttype=1



Project participant has provided the undertaking letter for the contribution towards CSR activities and the letter provided by the project participant was found to be satisfying the requirements set out by the host party DNA (/Ref-A4/).

The host country legislation does not require any environmental impact assessment to be carried out for wind energy projects. Project participant has obtained approval from DNA of India and it is confirmed by the Authority that the project contributes to sustainable development in India. The project activity is in compliance with all current applicable legislations. As the project activity does not lead to generation of liquid or gaseous effluents and it will displace fossil fuel based electricity generation, there are only benefits derived out of the project and no adverse effects are envisaged. Moreover, the location of the project activity is in remote and economically backward region and hence largely contributes to the social well being of the region.

During site visit it was noticed that the project provided employment to local people. The host Party's DNA confirmed the contribution of the project to the sustainable development of the host Party.

3.3. Sustainable Development (52)

The host Party's DNA has confirmed the contribution of the Project to the sustainable development of the host Party. Please refer to section 3.1 of this report.

3.4. Modalities of Communications (58,61)

The validation team has performed due diligence on the MoC statement and validated the corporate identity of all project participants and focal points included in the Modalities of Communication (MoC) statement, as well as the personal identities, including specimen signatures and employment status, of their authorized signatories.

CL 12 was raised, where the Project Participant were informed to submit the documents to assess the identity and signatures. In response the PP submitted the corporate identity proof and PAN cards of the respective persons stated in the MoC. Based on this submission and further assessment CL 12 was closed.

The corporate identities and PAN Cards issued Income Tax Department (Government of India) were made available to the Validation Team. Designation and Names as stated in the MOC was checked from corporate identity proof and signatures were checked and verified from the PAN card.

Bureau Veritas Certification confirms that the MoC statement (/Ref-A5/) complies with all relevant forms and requirements.

3.5. Project Design Document (63)

Bureau Veritas Certification hereby confirms that the PDD complies with the latest forms of the guidance documents for completion of PDD.



3.6. Changes in the Project Activity (17)

During the site visit, no physical changes pertaining to the project design was observed as compared to details mentioned in the webhosted PDD.

The major differences between the final version PDD and the webhosted PDD are listed in Table 2 below:

Table 2 Changes between the final PDD and the webhosted PDD

Item	PDD version 01 (Webhosted)	PDD version 04 (Final)	Validation Opinion
1.	Estimated amount of annual average GHG emission reductions = 41,541 tCO _{2e}	Estimated amount of annual average GHG emission reductions = 36,966 tCO _{2e}	The PLF value has been revised from 26.7% to 23.76% and is as per paragraph 3(b) of "GUIDELINES FOR THE REPORTING AND VALIDATION OF PLANT LOAD FACTORS", EB-48, and Annexure 11. The changes has been carried out based on CL 3 (2) raised by the validation team.
2	IRR = 4.48%	IRR = 2.85%	The changes has been carried out based on CL 3 (2) and also based on CL 2 (2-6) raised by the validation team and also based on the review by the financial expert.
3	Benchmark = 19.37%	Benchmark = 17.77%	The changes has been carried out based on CL 6 (2-4) raised by the validation team and also based on the review by the financial expert.

3.7. Project Description (69)

The Project activity involves the installation of 12 WTGs (Wind Turbine Generators) at Periyapatti, Udumalpet region, Tirpur District, Tamil Nadu state, India. The project activity is a newly built wind farm. The WTGs are of make V82, Vestas Wind Technology India Private Limited and each WTG is of 1650kW capacity. The total installed capacity of the project activity will be 19.80MW. The validated project activity is located in Illuppainagaram, Anikkadavu,



Thottampatti, Virugalpatti villages, Periyapatti Wind Farm, Udumalpet region, Tirpur District, Tamil Nadu state, India, which has geographical coordinates of north latitude 10°43'37.5" (10.7270) and east longitude 77°10'51.0" (77.1808).

The proposed CDM project activity is expected to generate approximately 41,211.2 MWh of electricity per year. The power generated from the WTGs is expected to be exported to the southern regional grid which forms a part of the National Grid of India.

The project activity generates electricity using wind energy, which does not result in any greenhouse gas (GHG) emissions. In the absence of the proposed CDM project activity, the electricity exported by the project activity would have been supplied by the southern regional grid of India, which is dominated by fossil fuels based thermal power plants (as referred in the database of Central Electricity Authority of India) (/Ref-A6/) and would have led to higher GHG emissions. Thus this project activity will lead to a reduction in GHG emissions. Thus, this project activity will lead to a reduction in GHG emissions approximately to the tune of 36,966 ton of CO_{2e} per annum during the ten years of the fixed crediting period.

Validation team has confirmed the accuracy of the project description through a combination of steps consisting of review of Power purchase agreement (/Ref-A7/), Commissioning certificate (/Ref-A8/), and Letter of Intent (/Ref-A12/) related to the project activity. The Validation team conducted the physical verification of site on 28/09/2012. The validation team noted that WTG's are located across the Periyapatti village, Udumalpet region, Tirpur District in the state of Tamil Nadu. During the site visit, it was observed all the machines have been commissioned. Further, the validation team interviewed some of the local stake holders to understand the project's contribution towards the sustainable development of nearby to the project activity. The requirement of manpower is partially fulfilled by the employment of local people. Thus, it is contributing towards the economical development of the nearby area due to installation of the project which is being developed on barren land.

The project capacity has been verified with the PPA (/Ref-A7/), commissioning certificates (/Ref-A8/) and hence validation team concludes that the project activity is of 19.80 MW.

The validation team hereby confirms that the project description in the final PDD (/Ref-A2/) is accurate and complete in all respects and that there are no changes to the project activity/design or boundary as compared to the webhosted PDD (/Ref-A1/).

3.8. Baseline and Monitoring Methodology

3.8.1. Applicability of the selected Methodology (77)

The Project uses the approved consolidated baseline and monitoring methodology ACM0002, Version 13.0.0 – "Consolidated baseline methodology for grid – connected electricity generation from renewable sources" (/Ref-B2/).

The applicability of the selected methodology is justified and assessed as follows:

APPLICABILITY CONDITION 1:



The methodology is applicable to grid connected renewable power generation project activity under the following conditions:

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, wave power plant/unit or tidal power plant/unit;

VALIDATION JUSTIFICATION 1:

The proposed CDM project activity involves the installation of the 12 WTGs, each of 1650 kW capacity. The validation team reviewed the Letter of Intent (/Ref-A12/) & PPA (/Ref-A7/) for WTGs placed by the project participant on WTG supplier and power purchase agreement with Tamil Nadu State Electricity Board. The electricity generated from the project activity will be exported to Southern Grid (Regional Grid of India). The validation team also verified the grid connections during site visit by visiting the substations where the WTGs of the project activity are connected to the grid. As per CEA database Version 7 (/Ref-A6/), Tamil Nadu state falls under the Southern Regional grid of India, the geographic and system boundaries of which are clearly identified and information on the characteristics of the grid is available. Based on the above assessment, the validation team confirms that the proposed CDM project activity is a Green Field grid connected renewable power generation project based on wind energy. Hence, this applicability condition is fulfilled.

APPLICABILITY CONDITION 2:

In the case of capacity additions, retrofits or replacements (except for wind, solar, wave or tidal power capacity addition projects which use Option 2: on page 10 to calculate the parameter $EG_{PJ,y}$): the existing plant started commercial operation prior to the start of a minimum historical reference period of five years, used for the calculation of baseline emissions and defined in the baseline emission section, and no capacity expansion or retrofit of the plant has been undertaken between the start of this minimum historical reference period and the implementation of the project activity;

VALIDATION JUSTIFICATION 2:

From the Letter of Intent (/Ref-A12/), commissioning certificates (/Ref-A8/) and the physical Verification at the site it is confirmed that the project activity is not a retrofit or replacement of older wind turbine generators with new wind turbine generators. Based on physical site visit, and documentary evidence, the validation team is able to confirm that the project activity is a Greenfield project and not a capacity addition. Hence, this applicability condition is not relevant to proposed CDM project activity.

APPLICABILITY CONDITION 3:

In case of hydro power plants; 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 reservoirs; or*

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- *The project activity is implemented in an existing single or multiple reservoirs, where the volume of any of reservoirs is increased and the power density of each reservoir, as per the definitions given in the project emissions section, is greater than 4 W/m²; or*
- *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.*

VALIDATION JUSTIFICATION 3:

This applicability condition does not apply since the project activity is wind energy based power project.

APPLICABILITY CONDITION 4:

In case of hydro power plants using multiple reservoirs where the power density of any of the reservoirs is lower than 4 W/m² all the following conditions must apply:

- *The power density calculated for the entire project activity using equation 5 is greater than 4 W/m²;*
- *Multiple reservoirs and hydro power plants located at the same river and where are designed together to function as an integrated project¹ that collectively constitute the generation capacity of the combined power plant;*
- *Water flow between multiple reservoirs is not used by any other hydropower unit which is not a part of the project activity;*
- *Total installed capacity of the power units, which are driven using water from the reservoirs with power density lower than 4 W/m², is lower than 15 MW;*
- *Total installed capacity of the power units, which are driven using water from reservoirs with power density lower than 4 W/m², is less than 10% of the total installed capacity of the project activity from multiple reservoirs.*

VALIDATION JUSTIFICATION 4:

This applicability condition does not apply since the project activity is wind energy based power project.

APPLICABILITY CONDITION 5:

The methodology is not applicable to the following:

- *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*

VALIDATION JUSTIFICATION 5:

As described in the above applicability conditions, the proposed project activity is wind based power project and hence this condition is not relevant to the proposed CDM project activity.

Physical verification at the site confirmed that the project activity is not an add up of a renewable and non-renewable component and only wind turbine generators are involved in the project activity having capacity total of 19.80 MW, which classifies as a large scale project activity (> 15 MW). The project activity does not involve switching from fossil fuels to renewable



energy sources at the project activity site nor is a biomass fired power plant, but is only a wind energy based electricity generation project.

In addition to the applicability conditions of the applied baseline and monitoring methodology, the methodology also refers to the applicability of the tools referred in the applied methodology (/Ref-B3/). The assessment of the applicability of the tools applied by the project activity as referred by the applied baseline and monitoring methodology, ACM0002, version 13.0.0 (/Ref-B2/) is as per followings:

Tool to Calculate the Emission Factor for an Electricity System, EB 65, Annex 19, version 02.2.1 (/Ref-B3/) refers to the following:

The tool may be applied to estimate the OM, BM and/or CM when calculating baseline emissions for a project activity that substitutes grid electricity, i.e. where a project activity supplies electricity to a grid or a project activity that results in savings of electricity that would have been provided by the grid.

The proposed CDM project activity involves installation of new wind energy generators and supply of electricity to the grid (southern regional grid of India). The methodology prescribes the grid as the baseline and the baseline emissions are calculated for the substitution of the electricity which would have been otherwise produced by the power plants in an electricity system / grid.

The project participant has applied latest tool for calculating emission reductions which was available at the time of webhosting of the PDD. The Project Participant has derived values from the CO₂ Baseline Database published by Central Electricity Authority (CEA), which is under Government of India. The CEA CO₂ Baseline Database has calculated the Operating Margin (OM) & Build Margin (BM) and the Combined Margin (CM) emission factor for the Southern regional grid determined by Central Electricity Authority (CEA), India.

The Project Participant has applied the weighted average CM method where by the two emission factors pertaining of the electricity system/ system viz., OM and BM for determining the CM. The default value of weights for $W_{OM} = 0.75$ and $W_{BM} = 0.25$ (wind & solar projects) has been applied to derive the CM for the Southern regional grid.

The validation team, based on the above described assessment, is able to conclude that the tool selected, which is prescribed by the approved applied baseline and monitoring methodology is applied correctly and appropriate to the proposed CDM project activity.

The selected baseline and monitoring methodology, ACM 0002, Version 13.0.0 (/Ref-B2/) is previously approved by the CDM Executive Board. The validation team hereby confirms the applicability of the applied baseline and monitoring methodology to the proposed CDM project activity.

Bureau Veritas Certification hereby confirms that the selected baseline and monitoring methodology, tool and other methodology component is previously approved by the CDM Executive Board, and is applicable to the Project, which, complies with all the applicability conditions therein.



3.8.2. Project Boundary (86-87)

The spatial extent of the project boundary as illustrated in the PDD covers the Wind Turbine Generators of the project activity, substations and the Southern Regional Grid of India.

The project boundary was validated in the following manner:

- a) The spatial extent of the project boundary is assessed based on the description provided in the PDD and as per the official data available from the Central Electricity Authority (CEA) about the regional grids in India. The electricity generated by the proposed CDM project activity would be exported to the state grid, which is a part of the Southern regional electricity grid of India. The project activity boundary therefore includes the project power plant (Wind Turbine Generator) and all other power plants connected physically to the Southern Regional grid of India.
- b) The validation team from the site visit was able to confirm that the CDM project activity is located at Periyapatti village of Tirpur district of Tamil Nadu State and comprises of the same elements described in the project boundary diagram in section B.3 of the PDD. At site, the wind energy generators utilize the available wind energy to produce electricity. The produced electricity is transmitted through Grid substation which is the part of Southern Regional grid of India. Same were cross checked with commissioning certificates (/Ref-A8/) issued by Tamil Nadu Electricity Board and power purchase agreement between TNEB & MCL (/Ref-A7/), from this assessment the validation team was able to conclude that the activity is connected to the Southern Regional Grid of India. All these elements together form parts of project boundary and hence geographical boundary of the project activity therefore encompasses these elements and is also correctly described in the project boundary diagram included in section B.3 of the PDD.

The baseline for this project activity is the continued generation of power in fossil fuel fired power plants connected to the Southern Regional grid. As the primary emission from such plants is CO₂, the consideration of only CO₂ gas for the baseline emissions is justified.

The project activity will also import power from the grid, whenever required. The electricity imported by the project activity is accounted while calculating the net electricity supplied (EGPJ,y) by the proposed CDM project activity. There are no other sources of project emissions. Hence, in line with the applied methodology, the project participant has considered project emissions as zero for renewable projects. Further, it was confirmed through the Letter of Intent (/Ref-A12/) and physical verification of WTGs at site that the WTGs of the project activity are new and no transfer of equipments from or to the project activity is involved; thus there is no leakage accountable to the project activity and also the Project Activity is environmentally safe during the operational life time of WTG's.

The validation team hereby confirms that the project design is sound and the geographical (Periyapatti Village, Udumalpet region, Tirpur district in Tamil Nadu state) and temporal (20 years) boundaries of the project are clearly defined. The webhosted PDD had stated the equipment lifetime to be 20 years. The project participant provided the Letter of Intent by the technology supplier (/Ref-A12/), noted that the technology supplier who is also responsible for the annual operation & maintenance of the WTGs. Based on the review of the Letter of Intent

confirmed that the entire project WTGs are new. The validation team also checked the Annex 15 of EB 50 "Tool to determine the remaining lifetime of equipment" (/Ref-B8) which has prescribed 20 years as the default technical lifetime for Wind Turbine Generators.

The validation team also confirms that the only greenhouse gas relevant to the project activity is CO₂. This gas is addressed by the applied methodology baseline and monitoring methodology.

Bureau Veritas Certification hereby confirms that the identified boundary and the selected sources and gases are justified for the project activity. The validation team did not identify any emission sources that will be affected by the implementation of the proposed project activity and which are expected to contribute more than 1% of the overall expected average annual emissions reductions, and are not addressed by the selected approved methodology.

3.8.3. Baseline Identification (94-95)

The procedure contained in the methodology to identify the most reasonable baseline scenario has been correctly applied.

Validation team assessed the baseline identification by the project participant using the provisions of the applied methodology. As per the applied methodology ACM 0002, version 13.0.0 (/Ref-B2/), the baseline scenario for a new grid connected renewable power plant/unit (Greenfield project) is defined as

Electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources, as reflected in the combined margin (CM) calculations described in the "Tool to calculate the emission factor for an electricity system".

As per paragraph 6 of the applied methodology, the baseline emissions is the product of electrical energy generated by the project activity (EGPJ,y) multiplied by the Grid Emission Factor

$$BE_y = EGPJ_{J,y} * EF_{grid,CM,y}$$

Where,

BE_y	= Baseline emissions in year y (tCO ₂),
$EGPJ_{J,y}$	= 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)

"The Emission Factor computed as 'combined margin (CM)' consist of the combination of operating margin (OM) and build margin (BM) according to the procedures prescribed in the Tools to calculate emission factor for an electricity system".



The project participant has used the official data published by the Central Electricity Authority (CEA), CO₂ Baseline Database Version 7, dated January 2012 for Operating Margin and Build Margin emission factors (/Ref-A6/). The version 7 of this database was available at the start of the validation viz; webhosting of the PDD for global stakeholders' comments. CEA is the sole government authority for the publication of such data in host country, India. This data is based on the tool to calculate emission factor for electricity system version 2.2.1 (/Ref-B3/) which is the latest available version available at the time of webhosting the PDD. Hence the CEA database is be used for the calculations of emission factor.

The project participant has applied weight factors for the OM and BM [75% & 25% respectively] as specified in the tool to calculate the emission factor for an electricity system (/Ref-B3/). The years considered for OM are 2008-09, 2009-10 and 2010-11 and for the BM it is 2010-11. Accordingly, the combined margin emission factor is calculated and same is worked out to be 0.8970 tCO₂/MWh.

The validation team agrees to the value of emission factor as it is based on the official background data published by Central Electricity Authority (CEA) and is an official publication of the Government of India and can be regarded as a reliable and authentic source of data for the determination of CDM baselines.

The validation team further noted that the emission factor is not provided by DNA but by the competent authority.

It is noted that the selected baseline scenario is in accordance with the selected approved baseline and monitoring methodology ACM 0002, version 13.0.0 (/Ref-B2/). Validation team therefore confirms that the selected baseline scenario reasonably represents what would happen in the absence of the proposed CDM project activity.

Bureau Veritas Certification hereby confirms that:

- (a) All the assumptions and data used by the project participants are listed in the PDD, including their references and sources;
- (b) All documentation used is relevant for establishing the baseline scenario and correctly quoted and interpreted in the PDD;
- (c) Assumptions and data used in the identification of the baseline scenario are justified appropriately, supported by evidence and can be deemed reasonable;
- (d) The investment in wind power projects in India is not a mandatory obligation on any project owner. The validation team confirms this on referring the Electricity Act 2003 (<http://www.cercind.gov.in/08022007/Act-with-amendment.pdf>) and National Electricity Policy 2005 (http://www.powermin.nic.in/whats_new/national_electricity_policy.htm) which do not restrict or empower any authority to restrict the fuel choice for power generation.
- (e) The approved baseline methodology has been correctly applied to identify the most plausible baseline scenario and the identified baseline scenario reasonably represents what would occur in the absence of the proposed project activity.

3.8.4. Algorithms and/or Formulae used to determine Emission Reductions (99-100)

The steps taken and the equations and parameters applied in the PDD to calculate project emissions, baseline emissions, leakage and emission reductions comply with the requirements of the selected methodology including applicable tool(s).

Baseline Methodology Procedure of the applied baseline methodology ACM 0002, version 13.0.0 (/Ref-B2/), if the project activity is the installation of a new grid-connected renewable power plant/unit, the baseline scenario is

“Electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources, as reflected in the combined margin (CM) calculations described in the ‘Tool to calculate the emission factor for an electricity system’”.

The proposed CDM project activity involves new wind (renewable) energy based grid connected power plants. Hence, the project participant has calculated the baseline emissions by multiplication of the net electricity supplied by the project activity to the grid and the combined margin emission factor for the grid. The detailed algorithms are transparently described under sections B.6.1 and applied in section B.6.3 of the revised PDD (/Ref-A2/), to calculate the baseline emissions

As required under ACM 0002 Version 13.0.0, equation 6 the baseline emissions are calculated by the algorithm:

$$BE_y = EGP_{J,y} * EF_{grid,CM,y}$$

Where,

BE_y = Baseline emissions in year y (tCO_2),

$EGP_{J,y}$ = 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)

The project activity being a green field grid connected renewable power project, as per equation 7 of applied baseline and monitoring methodology ACM 0002 Version 13.0.0, $EGP_{J,y} = EG_{facility,y}$ (where the $EG_{facility,y}$ is Quantity of net electricity generation supplied by the project plant/unit to the grid in year y). The algorithm to calculate the emission reductions from the project activity is described as;

$$ER_y = BE_y - PE_y - LE_y$$

Where,

ER_y is Emission reductions in year y ($t CO_2/y$)

BE_y is Baseline Emissions in year y (t CO₂/y)

PE_y is Project Emissions in year y (t CO₂/y)

LE_y is Leakage Emissions in year y (t CO₂/y)

The project participant has considered the project emission emissions to be zero in the proposed CDM project activity. The validation team has found this to be in accordance with the applied baseline and monitoring methodology ACM0002, version 13.0.0. The applied methodology clearly states that for the most of the renewable power generation project activity, PE_y = 0. Some of the project activities that may involve the project emission are Hydro power plant and geothermal power plant along with projects, which involve consumption of fossil fuel. The proposed CDM project activity is neither hydro power plant nor geothermal power plant. Further, the operation of the proposed CDM project activity does not require use of any fossil fuel as the project activity is wind energy based power generation. Hence, it is correct and appropriate to consider the project emissions as zero. Leakage emissions are considered to be zero in accordance with applied baseline methodology ACM 0002, version 13.0.0.

Hence ER_y = BE_y

i.e, ER_y = EG_{facility,y} * EF_{grid,CM,y}

Thus the algorithms used for the calculations of the baseline emissions and hence emission reductions are found to be correct and in accordance with the applied baseline and monitoring methodology ACM 0002, version 13.0.0 (/Ref-B2/) which is also appropriate to the type of the proposed CDM project activity.

Validation team assessed the calculations of estimated emission reductions as provided by project participant in a MS Excel spreadsheet (/Ref-A9/) in such a way that it can be easily reproduced by the reader.

The assumptions in this spreadsheet are validated as follows –

Parameter, Value	Source of information	Validation justification
Project Capacity, 19.80 MW	Techno- Commercial Offer letter (/Ref-A10/), Letter of Intent (/Ref-A12/)	The project capacity is as per the documents verified.
Number of WTGs, 12 (Individual Capacity of WTG, 1.650 MW)	Techno- Commercial Offer letter (/Ref-A10/), commissioning certificate (/Ref-A8/), Letter of Intent (/Ref-A12/)	The number of WTGs is as per the documents verified.
PLF of the project, 23.76%	Third party Wind Assessment report	The PLF value has been sourced from the third party wind assessment



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	(/Ref-A11/)	conducted by M/s. Fair Aero Consultant & Technologist and this is in accordance with Annex 11 of EB 48 and hence accepted by the validation team (/Ref-B4/).
Net Generation of the project activity, 41.21GWh	Calculated Value	The value is calculated as based on PLF value sourced from Wind energy assessment study. The value works to 41.21GWh. This is in accordance with Annex 11 of EB 48 and hence accepted by the validation team (/Ref-B4/).
Baseline Emission Factor for Southern regional grid, 0.8970 tCO ₂ e/MWh	CEA database Version 07 (/Ref-A6/)	CEA database is an official source of data and Version 7 was the version available at the start of the validation viz; webhosting of the PDD for global stakeholder comments. This is also in accordance with applied baseline methodology and "Tool to calculate the emission factor for an electricity system" (/Ref-B3/) and hence accepted by the validation team.

The estimation of emission reductions in the PDD in section B.6.4 is based on net electricity exported to the grid. The estimated annual average of emission reductions of approximately 36,966 tCO₂e over the 10 year crediting period, the calculation represents a reasonable estimation using the assumptions considered by the project participant in the revised PDD. All the assumptions for this estimate are derived from the relevant assumptions used for investment analysis and grid emission factor as taken from data provided by the CEA website. The validation team confirms that the estimates of baseline emissions can be replicated using the information provided. It also can be verified using the spreadsheet (/Ref-A9/) for calculations of emission reductions.

Bureau Veritas Certification hereby confirms that:

- (a) All assumptions and data used by the project participants are listed in the PDD, including their references and sources;
- (b) All documentation used by project participants as the basis for assumptions and source of data is correctly quoted and interpreted in the PDD;
- (c) All values used in the PDD are considered reasonable in the context of the proposed project activity;
- (d) The baseline methodology and corresponding tool(s) have been applied correctly to calculate project emissions, baseline emissions, leakage and emission reductions;



- (e) All estimates of the baseline emissions can be replicated using the data and parameter values provided in the PDD.

3.9. Additionality (104)

The steps taken by the validation team to assess the additionality of the Project Activity include review of documents indicated in the assumptions in the IRR spread sheet (/Ref-A33/). The detailed steps are described in Sections 3.9.1 through 3.9.5 below.

3.9.1. Prior consideration of the Clean Development Mechanism (112)

The timeline of the Project has been validated as in Table 3 below:

It is a project activity with a start date before 2 August 2008, for which the start date is prior to the date of publication of the PDD for global stakeholder consultation. The validation team has assessed the documents detailed in Table 3 below:

Table 3 Timeline of the Project

Date	Events	Reference
01/08/2007/	Agreement signed between MCL and Bunge's Ecoinvest Carbon SA, Switzerland ² for Evaluation and Registration of CDM Project Activity	(/Ref-A47/)
28/05/2008	Techno Commercial Proposal from Enercon India Limited for supply of WTGs	(/Ref-A18/)
20/06/2008	Techno Commercial Proposal from Vestas Wind Technology India Private Limited for supply of WTGs	(/Ref-A10/)
04/07/2008	The project size approved during this first Board Meeting held on 04/07/2008 for going ahead with 46.20 MW and also serious consideration of CDM was made by the Board. The project comprised of WTGs of Enercon India Limited (800 kW x 33 No. of WTGs) and Vestas Wind Technology India Private Limited (1650 kW x 12 No. of WTGs).	(/Ref-A13/)
22/07/2008	Letter of Intent (LoI) placed on Vestas Wind Technology India Private Limited (1650 kW x 12 No. of WTGs) which is the project activity start date.	(/Ref-A12/)
12/12/2008	MCL Letter of Intent (LoI) issued to Enercon for purchase of WTGs.	(/Ref-A19/)
28/10/2008	The local stakeholder consultation for the proposed CDM project activity of 46.20 MW.	(/Ref-A20/)

² Bunge's Ecoinvest Carbon SA is a subsidiary of Bunge Environmental Market



21/04/2009	Project Participant appoints the DOE -TUV India Private Limited(TUV) for conducting the validation of 46.20 MW CDM Project Activity.	(/Ref-A21/)
23/06/2009	The PDD for the project activity titled "46.20 MW Wind Energy Project in Tamil Nadu, India" was webhosted for Global Stakeholder Consultation Period (GSCP)	(/Ref-A17/)
24/02/2010	Project submitted to host country Designated National Authority (MoEF) for getting the Host Country Approval for the project activity.	(/Ref-A22/)
29/04/2010	Letter detailing date of DNA Meeting for Host Country Approval.	(/Ref-A23/)
02/08/2010	Board of MCL passes resolution to sell 33 numbers of the Enercon make WTGs.	(/Ref-A14/)
30/09/2010	Tax invoice receipts (MCL has sold the WTGs to the RML and Group concern).	(/Ref-A15/)
07/12/2010	Communication with CDM consultant intimating the sale of WTGs and seeking advice for further proceeding with CDM post selling of 33 WTGs of Enercon make of capacity of 0.80 MW each.	(/Ref-A24/)
14/02/2011	The entity (RML) to whom the WTGs were sold informed the PP that they would be withdrawing the WTGs from the ongoing CDM activity and would pursue the CDM for the 33 WTGs (26.40 MW) separately.	(/Ref-A25/)
04/04/2011	MCL Board decided to move with 19.80 MW capacity as a separate CDM Project activity to avail CDM Related Benefits.	(/Ref-A16/)
09/05/2011	MCL communicated the board decision to CDM consultant and asked for proposal for the revised capacity and the other formalities to be done.	(/Ref-A26/)
23/09/2011	MCL signed the CDM Consultancy agreement for revised capacity-19.80 MW with Ecoinvest Carbon SA	(/Ref-A27/)
01/02/2012	MCL submitted the withdrawal request for 46.20 MW project to the DOE appointed (TUV) for the 46.20 MW project. Also communication with the DOE for validation quotation for the revised capacity i.e. -19.80 MW.	(/Ref-A28/)
12/03/2012	Contract with Bureau Veritas Certification (India) Private Limited was signed for 19.80 MW project.	(/Ref-A29/)
15/03/2012	Termination of contract with the DOE (TUV) .	(/Ref-A30/)
06/06/2012	PDD published for global stake holder consultation for the project activity of 19.80 MW.	(/Ref-A1/)



The documentation for events described in the table was made available to the Validation team. Based on the assessment performed the validation team is able to note that the Project Participant since conceptualization has considered CDM and its related benefits. The project with installed capacity of 46.20 MW was seriously pursued under the CDM cycle all the steps were initiated with respect to achieve CDM registration. The necessary steps of appointing a CDM consultant, placing order in the form of Letter of Intent on the equipment supplier, conducting local stakeholder consultation and appointing DOE and hosting the PDD for Global Stakeholder Consultation Period were carried out by the Project Participant. However during the course of first validation of this project the no. of WTGs and size of the project was reduced from 46.20 MW to 19.80 MW.

The project participant sold 33 numbers of WTGs of which works out to be 26.40MW was to 7 companies. The buyers of 33 WTGs M/s Rajapalayam Spintex (A division of Rajapalayam Mills Limited), M/s Rajapalayam Textiles (A division of Rajapalayam Mills Limited), M/s Sri Vishnu Shankar Mill Limited, M/s Sandya Spinning Mill Limited, M/s Sundarsanam Spinning Mills (A division of the M/s Ramaraju Surgical cotton Mills limited), M/s Thanjavur Spinning Mill Limited and M/s Rajapalayam Spinners Limited and this has been confirmed based on board resolution passed by MCL on (/Ref-A14/) and also based on Tax invoice receipts by MCL towards removable of excisable goods from factory on payment of duty (/Ref-A15/). A new resolution was adopted by the board on 04/04/2011 where in the resolution states that the board will go ahead for the capacity of 19.80 MW as a CDM project activity (/Ref-A16/). The communication with respect to the change in size of proposed CDM Project Activity was communicated to the Consultant (/Ref-A27/) and TUV India Private Limited (1st DOE) (/Ref-A29/). The board resolution on 04/04/2011 has emphasizes to continue the project activity with revised capacity under CDM to minimize the financial risks associated with the project.

The validation team is able to verify the documents detailed in Table 3 above and found to be reliable and authentic and moreover the start date remains the same. From the documentary assessment and the interview with Project Participant, the Validation Team is able to conclude that there is less than two years of a gap between the documented evidence. Therefore the project participants demonstrated that real and continuing actions were taken to secure CDM status for the project in parallel with its implementation.

The DOE appointed for this proposed CDM project activity had informed the Project Participant their inability to conduct validation for the revised size of 19.80 MW. The sequence of events illustrate that necessary steps have taken for seeking CDM Registration of the project. The project participant has demonstrated by means of reliable evidence, that continuing and real actions were taken to secure CDM status for the project activity in parallel with its implementation. The same is meeting the requirements stated in paragraph 6. b of Guidelines on the Demonstration and Assessment of Prior Consideration of the CDM (/Ref-B10/).

The project activity start date determined as 22/07/2008 in the PDD is appropriate and is the earliest of the dates at which the real action of the Project began. This is in accordance with the latest CDM glossary of terms (/Ref-B5/). The start date is based on Letter of Intent with WTG supplier M/s Vestas Wind Technology India Private Limited (/Ref-A12/) placed by MCL on 22/07/2008.



The validation team has assessed the documents and cross checked key events based on information available from the UNFCCC³ website and Host Party DNA website.

Bureau Veritas Certification hereby confirms that the proposed project activity complies with the requirements related to the prior consideration of the CDM.

3.9.2. Identification of Alternatives (116)

The approved baseline and monitoring methodology ACM 0002, version 13.0.0 (/Ref-B2/) prescribes the baseline for new grid connected renewable power plant/unit as, "Electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources, as reflected in the combined margin (CM) calculations described in the "Tool to calculate the emission factor for an electricity system".

Hence as per paragraph 116 of VVS version 3.0 (/Ref-B1/) which, states that in case the approved methodology that is selected by the proposed CDM project activity prescribes the baseline scenario, then no further analysis of alternatives is required. Since the applied methodology, ACM 0002, version 13.0.0 itself prescribes a pre-defined baseline scenario; no further analysis on identification of alternatives is required.

3.9.3. Investment Analysis (123)

Analysis method

The project participant has demonstrated the additionality of the project activity using the 'Step II – Investment Analysis' of the Demonstration and Assessment of Additionality Version 7.0.0 (/Ref-B6/). The proposed CDM project activity generates revenues by the sale of electricity generated. CDM revenue therefore is not the only source of revenue for the project activity; hence simple cost analysis cannot be used. The project participant has selected Post-tax Equity IRR as financial indicator for investment analysis and benchmark analysis to demonstrate the additionality of the proposed CDM project activity.

The high investment by the project participant is necessary to commensurate return for the project participant, hence the validation team concluded that the financial indicator selected is appropriate for the project type and decision making context and it is in conformity with the guidelines on the Assessment of Investment Analysis (EB 62, Annex 5) (/Ref-B7/)

In accordance with paragraph 19 of EB 62 Annex 5 (/Ref-B7/) and paragraph 123 of VVS Version 3.0 (/Ref-B1/) Benchmark analysis selected by the project participant is an appropriate method to demonstrate additionality.

Benchmark

The PP has chosen benchmark analysis to demonstrate additionality of the project and for this purpose, has selected Equity IRR as the financial indicator. As per Annex 5 of EB 62 "In cases

³ <http://cdm.unfccc.int/Projects/Validation/DB/OB98HGOB9W6DUNN60IUBED9VHZRTUQ/view.html>



where benchmark approach is used, the applied benchmark shall be appropriate to the type of IRR calculated". The cash flow in the IRR (/Ref-A33/) is computed based on 100% equity investment. Therefore the selection of benchmark of Return on Equity (ROE) is appropriate to financial indicator of Equity IRR chosen and is also in conformity with the Para 121 of VVS 3.0 and EB guidance provided.

The project participant has derived the Return on Equity (ROE) on the basis of the CAPM model. The CAPM has been calculated based on the following formula:

$$\text{CAPM} = ((Rf_1) + ((Rm - Rf_2) * \beta_A))$$

Where,

Rf_1 = Applicable Risk free rate

Rf_2 = Average return of a risk free investment

Rm = Expected market return

β_A = Average unlevered beta

The average risk free return is as 10.04% and is from Reserve Bank of India Published data on the interest rates for central government securities and the data has been considered for a period from 1991 to 2007 (/Ref-A32/) and is available at the time of investment decision. The risk free rate is as 7.80% and is from Reserve Bank of India published data for the Month-end Yield to Maturity of SGL Transactions in Central Government Dated Securities for Various Residual Maturities for term maturity of 20 years and is available at the time of investment decision. The market return based on BSE 30 sensx data is 19.03% and has been derived for the period from 1978 till March 2008 (/Ref-A31/).

As explained in the PDD, the beta value for the project type was based on Beta values of power generating companies in India and listed on the stock exchange at the time of investment decision. The beta has been taken for 5 companies for 6 years and 8 months period prior to decision making considering the BSE Sensex 30 index. Average of the beta values was taken. The average beta value considered was 1.11. The beta is of power generating companies and hence it is accepted.

The average unlevered beta has been calculated based on the following formula:

$$\beta_A = \beta_E / [1 + (1 - T) * (D/E)]$$

Where,

β_A = Unlevered beta of the firm

β_E = Levered beta of the firm



T = Marginal tax rate of the firm

D/E = Debt-Equity ratio of the firm.

The unlevered beta of the companies are detailed in the table below and the average unlevered beta comes to 1.11

Name of the utility	Unlevered beta of the firm (β_A)
BF utilities	1.48
Tata Power	1.00
GIPCL	0.90
NLC	1.10
CESC	1.06
Average	1.11

The validation team raised CL 3 (1) and CL 6 to assess the availability of information, appropriateness of data, period of data used by the project participant in the computation of benchmark.

In response to CL 3 (1) the Project Participant clarified the data used from the Reserve Bank of India⁴ was available at the time of decision making, the data vintage period was provided. The data is available on the public domain and the web link for the same was provided and checked by the validation team. Based on satisfactory response and reference, the validation team closed CL 3(1) and CL 6.

The validation team also noted that the Project Participant has another wind power project which is under CDM Validation and the approach used to compute the benchmark is also the same.

The validation team, along-with the financial expert engaged, also verified the correctness and authenticity of the data used for the benchmark calculation and found them to be correct and publicly available and appropriate to the type of project activity and decision making context.

⁴ India's central banking institution



This is also in line with the guidelines for benchmark selection stipulated in the Guidance on the Assessment of Investment Analysis, EB 62 Annex 5.

Thus, the validation team was able to conclude that the benchmark (/Ref-A34/) used by the Project Participant in the context of decision making and type of investment is appropriate.

Thus, the benchmark calculated for the project activity was found in line with VVS version 3.0 paragraph 121 and paragraph 123 (b). The validation team therefore concluded that the benchmark adopted by the Project participant to establish the additionality is 17.77% and consequently the project's additionality is correct and valid.

Data source & Input value

Before reviewing the post tax equity IRR calculations (/Ref-A33/), the validation team has validated the basic input parameters listed in the web hosted PDD and spread sheet of Investment Analysis in accordance with Para 123 (a) of VVS (/Ref-B1/).

The validation team reviewed all the sources and documents with respect to input values and assumptions, the validation team concluded that the input values considered in calculation of equity IRR are appropriate to the type of project activity and meet the requirement of paragraph 6 of EB 62, Annex 5, Guidance on the assessment of Investment Analysis (/Ref-B7/).

The approach adopted by the validation team for verifying the assumptions and their references are as follows:

- Appropriateness of the sources of reference & assumptions and their relevance to the period in which the decision was made;
- Whether access to the references and information is provided;
- Whether the references and information are publicly available;
- Authenticity & credibility of the sources of information.

The detailed assessment of input parameters and assumptions along with the means of validation is provided below table in accordance with paragraph 118 of VVS version 3.0 and in line with Guidance on Assessment of Investment Analysis (EB 62, Annex 5) (/Ref-B7/).

The parameters presented in the table below were not supported earlier with adequate reference and sources, hence CL 2 and CL 3 were raised by the Validation Team.

The Project Participant in response to the CL 2 and CL 3 provided the sources and references where the data was derived and also clarified the appropriateness of information available at the time of decision making. Based on necessary changes incorporated in the PDD and IRR sheet, the validation team closed CL 2 and CL3, details of closure are available in the Table 2 of Appendix A of this document.

Parameter	Value used	Source of value	Validation justification
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Project capacity in MW	19.80	Techno Commercial Offer letter from M/s Vestas Wind Technology India Private Limited (/Ref-A10/)	The validation team has verified the project capacity by reviewing the original offer letter submitted by WTG (technology) supplier dated 20/06/2008. The proposal was available at the time of investment decision i.e.,04/07/2008 and hence appropriate. The capacity of the project activity was also cross checked with commissioning certificate (/Ref-A8/) and also with power purchase agreement (/Ref-A7/), and found to be correct, Hence, accepted by the validation team.
Number of WTGs	12	Techno Commercial Offer letter from M/s Vestas Wind Technology India Private Limited (/Ref-A10/)	The validation team has verified the project capacity by reviewing the original offer letter submitted by WTG (technology) supplier dated 20/06/2008. The proposal was available at the time of investment decision i.e.,04/07/2008 and hence appropriate. The capacity of the project activity was also cross checked with commissioning certificate (/Ref-A8/) and also with power purchase agreement (/Ref-A7/), and found to be correct, Hence, accepted by the validation team.
Total project cost (Million INR)	1374.00	Techno Commercial Offer letter from M/s Vestas Wind Technology India Private Limited (/Ref-A10/)	The validation team has verified the project capacity by reviewing the original offer letter submitted by WTG (technology) supplier dated 20/06/2008. The proposal was available at the time of investment decision i.e.,04/07/2008 and hence appropriate. This is as per paragraph 6 of guideline on the Assessment of Investment Analysis (EB 62, Annex 5) and hence appropriate. In order to cross verify the value further, the validation team verified



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			<p>the actual cost of the WTGs based on Letter of Intent placed by the project participant to the WTG supplier (/Ref-A12/).</p> <p>This is the document which mentions the negotiated final price of the WTGs and hence found credible. The validation team noted that the actual project cost is INR 1362.00 million which is 1% lesser than the value in offer letter.</p> <p>However, even with these lesser values, the project is still additional. The project participant has subjected total project cost to 10% variation (both + & -). The same is detailed in sensitivity analysis below.</p>
Plant Load factor (PLF), %	23.76	Third party Wind Assessment report (/Ref-A11/)	<p>The PLF value has been sourced from the third party wind assessment conducted by M/s. Fair Aero Consultant & Technologist. The consultant is engaged in analysis of wind farm sites, estimation of generation and prognosis of technical features of wind turbines. They have been engaged in Micro Siting of Wind Farm Sites and have technical expertise in the wind power project domain. The validation team has taken the experience of third party engineering consultant in consideration and is able to conclude that the PLF report submitted to be credible. This is in accordance with Annex 11 of EB 48 and hence accepted by the validation team (/Ref-B4/).</p> <p>The validation team noted that M/s. Fair Aero Consultant & Technologist is a third party to the project participant and they offer consultancy services on Wind</p>



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			<p>Energy projects. Hence the source of the value is considered to be credible.</p> <p>Since the PLF value is determined in line with the requirements specified in paragraph 3(b), EB 48, Annex 11, the validation team accepted the same (/Ref-B4/).</p> <p>The validation team further reviewed the NCES tariff order of TNERC dated 15/05/2006 (/Ref-A35/), which was applicable at the time of investment decision and noted that the PLF indicated for WTGs located in entire Palagat Pass is 24.92%. It is observed that the PLF assumed by project participant for investment analysis is 23.76%. The PLF considered in the TNERC Tariff Notification is for the entire Palagat Region, where as the PLF assessed by third party engineering consultant is very specific to the site.</p> <p>The project participant has presented the actual generation from the year April 2009 to April 2013 (/Ref-A46/), the PLF achieved during this period is in the range of 21 to 23% which is closer to the estimated PLF by the third party engineering consultant. Based on the documents assessed the validation team is able to conclude that the PLF used in the computation of IRR to be appropriate in the context of the project. The Project Participant has further subjected the PLF to a sensitivity analysis of + 10% & - 10%. The same is discussed in the section below of this validation</p>
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			report.
Operation and maintenance cost from 2 nd year onwards (Million INR/WTG) excluding service tax & duties with an annual escalation from 3 rd year onwards.	1.26 with annual escalation of 7.5% from 3 rd year onwards	Techno Commercial Offer letter from M/s Vestas Wind Technology India Private Limited (/Ref-A10/)	<p>Based on the proposal received from technology supplier dated 20/06/2008 the operation & maintenance charges have been taken as 1.26 Million INR per WTG from 2nd year onwards with an annual escalation of 7.5% from 3rd year up to 5th Year. Project Participant has considered the same escalation for the balance years (i.e., from 6th to 20th year) for IRR computation. The value reflects the O&M cost applicable at the time of investment decision. This is as per paragraph 6 of Guidelines on the Assessment of Investment Analysis (EB 62 Annex 5) (/Ref-B7/) and hence accepted by the validation team.</p> <p>The validation team also reviewed the O&M agreement signed between the Project Participant and the O&M contractor and found the O&M charges is 1.70 Million INR/WTG for the project activity with an annual escalation of 5%(/Ref-A36/) from subsequent years. The O&M cost as per agreement is 25.88% more than the proposal cost considered in the IRR spread sheet , hence the validation team is able to conclude that the value considered is conservative. The Project Participant has further subjected the parameter of O&M cost to a sensitivity analysis of - 10% & +10% variation to check the robustness of the parameter. Please refer discussion on sensitivity analysis below.</p>
Insurance cost in %	0.75 of the	NCES tariff order of	The value considered is from



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of the project cost (INR Million) and reduction in insurance cost per year in % after 5 th year onwards.	project and reduction of insurance cost @ 0.50% after 5 th year onwards.	TNERC dated 15/05/2006 (/Ref-A35/)	publically available document issued by Tamil Nadu Regulatory Commission via order dated 15/05/2006. The validation team considers the document to be authentic since it is a publically available document and hence no further validation is required on the parameter.
Power Tariff (INR/kWh)	2.90	NCES tariff order of TNERC dated 15/05/2006 (/Ref-A35/),	<p>The tariff has been derived from the TNERC order which was available to the project participant at the time of decision making. It indicates the Wind power tariff to be INR 2.90 /kWh for projects located at wind Group II in Tamil Nadu (/Ref-A35/).</p> <p>The validation team cross verified the PPA agreement signed between the Project Participant and Tamil Nadu State Electricity Regulatory Committee. and found that the tariff rate is 2.90 INR/kWh (/Ref-A7/).</p> <p>However, the project participant has subjected tariff to $\pm 10\%$ variation under sensitivity analysis to cover the uncertainty in tariff and the results are detailed in section below of sensitivity below.</p>
Employee Expenses (INR Million / MW)	0.04	The expenses are considered based on past MCL experience in operation of WTGs equivalent to 57.79MW (/Ref-A37/)	Project Participant has considered employee expenses and administrative expenses based on past experience in operation of WTGs equivalent to 57.79MW. The document was available at time of investment decision i.e., 04/07/2008 and hence appropriate. This is as per paragraph 6 of Guidelines on the Assessment of Investment Analysis (EB 62 Annex 5) (/Ref-B7/) and hence accepted by the validation
Administrative Expenses (INR Million / MW)	0.05		



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			team. The validation team has cross verified the actual employee and administrative expenses for the validated project activity, the expenses comes to 0.022 & 0.052 (/Ref-A38/)respectively, with these values the IRR comes to 2.88% and still below the benchmark value.
Debt Equity ratio (%)	00:100	Assumed	The project has been funded through 100% equity and there is no debt component and this has been certified by company secretary of MCL and also by Government of India approved chartered accountant, Jagannathan & N Krishnaswami (/Ref-A39/).
Income tax Depreciation Rate (WDV)			
Income Tax depreciation rate (in %)	80%	Income tax Act	80% of IT depreciation has been sourced from the Income Tax Act (/Ref-A40/). The validation team accepted this value as it was available at the time of investment decision and the same is in accordance with the accounting principles of the Host Country and Guidelines for the assessment of investment analysis. (/Ref-B7/)
Book depreciation rate (SLM)			
Book depreciation rate on plant and machinery (%)	5.28	As per Schedule XIV of the Companies Act, 1956 (/Ref-A41/)	The rate of depreciation is as per the Schedule XIV of companies act, 1956. The rate of depreciation is in accordance with accounting principle of host party. Hence, on affirmation from financial expert of BVCH, the validation team concludes that rate of depreciation considered for income tax calculation is appropriate and in accordance with Guidelines for assessment of Investment Analysis.(/Ref-B7/)
Book depreciation rate on civil (%)	3.34		



Income tax rates			
Income tax rate (%)	33.99	Indian IT rate applicable under Income Tax Act 1961 (/Ref-A43/)	The Income Tax rate is taken on the basis of the prevalent rates published by Ministry of Finance for every financial year and is publicly available and is found to be correctly applied.
Minimum Alternate Tax (MAT) (%)	11.33	Indian IT rate applicable under Income Tax Act 1961. (/Ref-A42/)	The Minimum Alternate Tax rate is taken on the basis of the prevalent rates published by Ministry of Finance for every financial year and is publicly available and is found to be correctly applied.

The validation team hereby confirms that project participant has applied all the statutory levies, deferred tax benefits under section 80IA (/Ref-A43/) under Income Tax Act 1961 and taxes as per the valid tax rules of India.

Indicator Calculation

The arithmetical accuracy in computation of Equity IRR was found to be correct. The Equity IRR calculations have been provided in a spreadsheet (/Ref-A33/). The computations are transparently presented in the spreadsheet and were verified by the validation team. All the cells of the spreadsheets can be accessed and the data and formulae in the cells can be viewed, as the cells are unprotected.

Equity IRR was computed for a period of 20 years, which reflects the period of expected operation of the underlying project activity (technical lifetime) and hence was found to be appropriate.

As required by Annex 5 of EB 62 the expected profit on the sale of assets at the end of the operating life has been taken as salvage value in the terminal year. The project developer has taken into account profit after tax, depreciation, and salvage value (in the terminal year) in the computation of IRR. The principle adopted in making projections and computing IRR conforms to the accepted and standard accounting and taxation principles. The financial expert has verified the IRR calculations and observed them to be in order.

With the above background, the validation team concludes that underlying assumptions are appropriate, accounting principles adopted in calculations, the calculations presented are correct and the guidance vide paragraph 120 of the VVS (/Ref-B1/) has been taken care of. Based on the above, the post tax Equity IRR was worked out to be **2.85%**.

The validation team validated the assumptions as above and observed that they are correct and are consistently presented in the final PDD (/Ref-A2/) as well as financial spreadsheet (/Ref-A33/). The financial expert engaged by BVCH also verified the IRR calculations for the Project participant and observed it to be correct.



Sensitivity Analysis

In order to demonstrate the robustness of the conclusion arrived at above, viz., that the project is additional; and as per the guidelines on the assessment of investment analysis (section VI of EB 62, Annex 05 guidelines) (/Ref-B7/), the sensitivity of the investment analysis to all parameters constituting more than 20% of either total project costs or total project revenues has been determined by the project participant.

Paragraph 20 of the EB 62 Annex 05 Guidelines on the assessment of Investment analysis specifies which input parameters need to be varied for the purpose of the sensitivity analysis.

The validation team raised CL 5 to understand the scenarios where the IRR would cross the benchmark and probabilities of occurrence of such scenario.

In response to CL 5 the Project Participant provided the scenarios where the IRR would cross the benchmark and probability of occurrence of these scenarios. Based on satisfactory response by the project participant the validation team closed CL 5.

Accordingly, 4 input parameters in the investment analysis were subjected to a variation of +/- 10% to check the effect it would have on the overall financial analysis. The following 4 parameters were subjected to variation:

Plant Load Factor

Tariff

O&M cost

Project Cost

The range of variation (+/- 10%) for the above stated parameters could be considered as reasonable in the context of the project activity, for the following reasons:

Plant Load Factor:

The PLF is deduced from the third party Wind Energy assessment Report as 23.76% (/Ref-A11/). Net generation has been subjected to +10% and -10% variation. The results obtained in the two scenarios demonstrate that even with 10% increase in PLF the IRR does not cross the benchmark; the result is similar with 10% decrease in PLF.

Further, the validation team also reviewed the TNERC notification of 2006 (/Ref-A35/), which was the applicable at the time of investment decision and was noted that the PLF indicated for Tamil Nadu wherein the proposed project activity is located is 24.92%. It is noted that estimated PLF by third party engineering consultant is 23.76% which is considered by the project participant in demonstrating additionality. Project participant has subjected the PLF up to 97.74% variation over the assumed value and the resultant Equity IRR equals to the benchmark, indicating that the analysis is sufficiently robust with large variations of the PLF. The results obtained in the above scenarios are demonstrated in the table below:

Parameter	Variations in the sensitivity (%)			Benchmark (%)
Plant Load factor	-10	Base-Case	10	17.77
Equity IRR	1.31	2.85	4.51	

Thus, the validation team found the approach adopted by the Project participant to be satisfactory.

Tariff:

The power tariff in Tamil Nadu is fixed for the entire life of the project activity at INR 2.90 /kWh based on TNERC tariff Notification of 2006 (/Ref-A35/), which was available to the project participant at the time of investment decision. However considering the uncertainty in the tariff structure undergoing any revision in future, the Project participant has subjected the parameter of tariff to a sensitivity analysis of + 10% and -10%. The Equity IRR with +10% on tariff work out to be 4.51% without CDM revenue which is below the benchmark and at -10% the IRR is 1.31%. Further, project participant has subjected sensitivity up to 97.74% at which the Equity IRR is above the Benchmark of 17.77%. Thus it indicates that the analysis is sufficiently robust for large variations of tariff.

Operation and Maintenance Cost:

The Project Participant has also conducted a sensitivity analysis on the parameter of Operation and Maintenance cost in line with Investment Guidance Version 5, EB 62, Annex 5 paragraph 21, subjecting a sensitivity analysis of - 10% & +10% and found that Equity IRR was 3.16% much below the benchmark of 17.77%. The Equity IRR at +10% variation works out to be 2.52%. The IRR would cross the benchmark when the O&M cost is reduced by 665.50% which is unrealistic since the actual Operation & Maintenance Agreement is in place and actual O&M cost is higher than the projected cost and agreement also discusses about escalation. Based on this assessment the validation team is able to conclude that the scenario of O&M cost lesser than the projected O&M cost is unlikely.

Project cost:

The project cost was subjected to two variations of +10% (increase) and -10% (decrease). At the start of validation, the Letter of Intent for the supply of equipments were issued by project participant to the equipment supplier. The validation team reviewed the supply contract and service order and found that the actual cost of the project activity based was lower than the cost indicated in the initial techno commercial offer by the WTG supplier. The project cost per Wind Turbine Generator indicated in the initial offer by M/s Vestas Wind Technology India Private Limited [which was available at the time of decision making] was INR 1374.00 million whereas the actual project cost [based on Letter of Intent] worked out to be INR 1362.00 million only (1% lesser than the projected cost). Hence the sensitivity analysis was concluded at the rate of -10% and the equity IRR was observed to be 4.31% which is lower than the benchmark. The capital cost being 10% higher than the estimated cost is irrelevant since the purchase orders have already been placed on the equipment supplier during course of validation and the Project participant is obliged to pay the agreed on cost. The post tax equity IRR in both the scenarios remains below the benchmark value of 17.77%. The post tax equity IRR would cross the benchmark when the project cost is less by 53.91%, the scenario is unlikely since the project cost has already incurred by the Project Participant.

The validation team agrees with the approach followed in the selection of parameters for the sensitivity analysis, as the criteria employed in the same meets the EB 62 Annex 05 guidelines for Investment analysis.

The summary of all the parameters that were subjected to the sensitivity analysis are presented below:

Parameters	Variation in equity IRR (%)	Benchmark (%)
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	-10	0	10	
PLF	1.31	2.85	4.51	17.77
Tariff rate	1.31		4.51	
O&M cost	3.16		2.52	
Project cost	4.31		1.79	

The results of the sensitivity analysis indicate that even in situations favoring higher net electricity export, decrease in project cost and increase in power tariff, the post tax equity IRR for the investment would not cross the benchmark of 17.77%.

The sensitivity analysis is included by the project participant as a part of the spreadsheet for investment analysis. The results of the sensitivity analysis can be checked by inserting the range of variation (i.e. +/- 10%) in the worksheet named "Assumptions" in the investment analysis spreadsheet. The financial expert in the validation team also validated the accuracy of computations of the sensitivity analysis and confirmed that the same are correct.

The validation team therefore confirms that the Equity IRR for the project activity without CDM revenues is 2.85% and even with sensitivity analysis carried out as per the guidelines on assessment of investment analysis (EB 62 Annex 5), the values of Post Tax Equity IRR does not cross the benchmark adopted. Based on assessment as per the requirements of paragraph 120 (e) of VVS 3.0 (/Ref-B1/), the validation team therefore concurs with the project participant that the project activity is additional since it is not financially viable without the benefits from CDM.

Conclusion:

The validation team has confirmed that all data used to arrive at the benchmark were derived from the UNFCCC guidelines and from sources available to the project participant at the time of the investment decision and hence the validation team accepted the same.

The post tax equity IRR for the investment of the project works out to be 2.85%. The Post Tax Equity IRR value is lower than the benchmark of 17.77%. The validation team therefore confirms that the financial returns from the proposed CDM project activity would not be sufficient to justify the required investment as the Post Tax Equity IRR does not meet a minimum rate of return that could be expected by an investor.

3.9.4.Barrier Analysis (127)

The project participant has not attempted to prove additionality through barrier analysis.

3.9.5.Common Practice Analysis (130)

The Project Participant in the webhosted PDD had performed the common practice analysis, however the same was not meeting the requirements of "Tool for the demonstration and assessment of Additionality" (/Ref-A6/). The validation team raised CAR 6.

In response the Project Participant incorporated the changes to meet the requirements of "Tool for the demonstration and assessment of additionality" and Common Practice Guidance. CAR 6



was closed based on the corrections incorporated and which were found to be meeting the requirements of the tool and guidance.

The common practice analysis for the project activity has been conducted as per the requirements of Guidance on Common practice, version 02.0, EB 69 (/Ref-B8/).

The following set of measures has been listed in paragraph 2 of the Common practice tool (/Ref-B8/):

- (a) Fuel and feedstock switch (example: switch from naphtha to natural gas for energy generation, or switch from limestone to gypsum in cement clinker production);
- (b) Switch of technology with or without change of energy source including energy efficiency improvement as well as use of renewable energies (example: energy efficiency improvements, power generation based on renewable energy);
- (c) Methane destruction (example: landfill gas flaring);
- (d) Methane formation avoidance (example: use of biomass that would have been left to decay in a solid waste disposal site resulting in the formation and emission of methane, for energy generation).

The project activity falls under measure (b) above since in theory the project essentially switches from a potential fossil fuel based power plant (with a EF equal to combined margin) to a renewable energy based plant and hence the common practice analysis of the project activity should be demonstrated using Stepwise approach for common practice of the guidance on common practice.

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

All the power plant with +/-50% of the capacity of the proposed project activity 19.8 MW has been selected for analysis. The applicable output range of capacity for analysis is 9.9 MW to 29.7 MW;

Step 2: Identify similar projects (both CDM and non-CDM) which fulfill 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.

The applicable geographical area selected by the Project participant for common practice analysis is the entire host country viz. India. The same is in accordance with paragraph 5 of the additionality tool according to which the applicable geographical area should cover the entire host country as a default.

The details of wind energy projects that deliver same output or capacity viz. power generation and within the applicable output range of 9.90 MW to 29.70 are provided in PDD. The total project activity identified within this applicability criterion is 27.

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.

The total numbers of projects identified after Step 2 that deliver same output or capacity viz. power generation and within the applicable output range of 9.90 MW – 29.70 MW are identified to be zero in number and all the projects are either registered or submitted for registration or the projects under CDM validation. Hence Nall = 0

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 Ndiff.

Based on step 2, Ndiff = Nall

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.

From the information in Step 2 and Step 3 –

Nall	0
Ndiff	0
Nall - Ndiff	0
$F = 1 - N_{diff}/N_{all}$	No value

As per para 10 of the guidance the proposed project activity is a common practice within a sector in the applicable geographical area if:

- (a) the factor F is greater than 0.2, and
- (b) Nall-Ndiff is greater than 3.

Nall-Ndiff is not greater than 3 and the Factor F is less than 0.2. Since both the above condition has not been satisfied and thus validation team concludes that the project activity is not a common practice in India.



The project participant has presented the tabular column for the common practice analysis in the revised PDD (/Ref-A2/) with the details of the project activities considered up to 04/07/2008 (investment decision date).

The validation team based on the above assessment is able to confirm that the proposed CDM project activity is not a common practice in the host country, India.

3.10. Monitoring Plan (133)

The Project uses the approved monitoring methodology ACM0002, Version 13.0.0 (/Ref-B2/)

The webhosted PDD did not contain adequate information on data collection, monitoring recording, archiving and QA & QC procedures, CAR 8, CL 8, CL 9 and CL 10 were raised by the validation team.

Project Participant in response to the CAR and CLs raised, clarified and responded to the following with necessary changes and documentation:

1. Purpose of Data – The same was detailed in section B.7.1 of the revised PDD to be in line with the F-CDM-PDD completion guidelines.
2. Data Recording, Monitoring and Archiving were detailed in the revised PDD.
3. QA & QC procedures were defined and measures & procedures to be followed during meter failure have been detailed.

Based on adequate corrections and response, CAR 8 and CL 8 to CL 10 were closed.

Applicability of this methodology is justified in PDD section B.2 Referring to the discussions on the applicability of the methodology in section 3.8.1 above, the validation team considers that the selected monitoring methodology is applicable to the Project and achievable.

Data and Parameters Monitored & Implementation of the Monitoring Plan

The steps taken to assess whether the monitoring arrangements described in the monitoring plan are feasible within the project design are described below. The validation team considers the project activity complying with the requirements of the applied baseline and monitoring methodology for the following reasons:

1. According to the methodology, there is only one variable that a windmill project needs to monitor, i.e., EGPJ,y, the net electricity supplied to the grid by the proposed Project Activity.
2. The project activity comprises of three parameters which are needed to be monitored for computing the net electricity supplied to the grid in a year, which are EGPJ,y, EGimport and EGexport. The Project Participant has included 2 additional parameters EGexport & EGimport, which monitors the gross electricity export and gross electricity import of the



- project activity WTG's by the individual meters located at the project site itself. Based on these measured and recorded values, the net electricity supplied value is calculated as EGexport - EGimport. The monthly readings are carried out in the form of joint meter readings between TNEB officials and MCL plant representatives and a statement will be issued by TNEB in the form of monthly statement.
3. EFgrid,CM,y, the emission factor is fixed ex-ante based on CEA database, Version 7. This is in line with the EF tool as required by the methodology.
 4. Project participant has provided provision for monitoring these parameters and for electronic as well as hard copy archiving of the monitored data. This is stated in Section B.7.1 of the revised PDD.
 5. Project participant has made provision for storing and archiving the data for 2 years beyond the end of the crediting period.
 6. The monitoring plan includes requirements for calibration of the energy meters. The calibration is performed by the State Electricity utility once in two years.. In the event of Faulty Meter which leads to replacement / change the following are the steps involved:
 - a) LCS meter readings and EB meter readings are noted by site operators on daily basis.
 - b) If the EB energy meter found faulty then site operator will inform the concerned Electricity Board officials.
 - c) The Electricity Board officials will check the meter at site and if the meter is found faulty the meter would be replaced with the new energy meter.
 7. In given period if the event of failure of meter occurs, the operation of WTG/s would be stopped during the period when the faulty meter is replaced by new calibrated meter. Since the WTG/s would not be in operation there would be no generation of electricity for the specific period, hence there would not be any accounting of emission reductions by the Project Participant.
 8. The error identified in the energy meter during the calibration would be applied to all the monitored data since the date of the last calibration, in case the meter has been used in the preparation of the monthly Joint Meter reading.
 9. The monitoring frequency for EGPJ,y matches with that of the applied methodology, viz. continuous measurement and monthly recording. The cross checking will be carried out with the invoices raised by the Project Participant on the State Electricity Utility for payments, for the net electricity delivered by the Project Activity to the grid.
 10. The meters to be employed to be of accuracy class of 0.5 and 0.2.

The validation team physically verified the metering system installed at the site of the project activity. The validation team also interacted with the team of the O&M service provider; M/s. Vestas Wind Technology India Private Limited, who is also the equipment supplier. The agency is experienced in the monitoring system and is managing O&M of numerous other wind farm CDM projects. The O&M team consists of operators, technicians and engineers who are trained and qualified to the carry out the roles and responsibilities have been defined in the PDD. The flow of data and data monitoring and role of the personnel involved is clearly communicated. The QA & QC procedure for the quality of data and data archiving procedures are also defined and followed which was evidenced during the physical site visit of the validation team.



The validation team therefore is of the opinion that the project participant through the O&M agency is capable of implementing the monitoring plan in the context of the project activity.

The validation team considers that the description of the monitoring plan contains all necessary parameters, that they are described and that the means of monitoring described in the plan complies with the requirements of the methodology including applicable tool(s).

The validation team considers that the means of implementation of the monitoring plan, including the data management and quality assurance and quality control procedures, are sufficient to ensure that the emission reductions achieved by/resulting from the proposed project activity can be reported ex post and verified.

Bureau Veritas Certification hereby confirms that the monitoring plan complies with the requirements of the methodology including applicable tool(s), the monitoring arrangements described in the monitoring plan are feasible within the project design and the project participants are able to implement the described monitoring plan.

3.11. Environmental Impacts (137)

A notification pertaining to Environment Impact Assessment (EIA) was published on DNA of India's (i.e. Ministry of Environment & Forests) (/Ref-A44/). The Schedule list, section 1 of this EIA notification dated 14/09/2006; EIA is not regulatory requirement for wind energy projects. Thus the project activity does not involve any negative environmental impacts, as the WTGs are installed for generation of power using wind which is a clean source of energy.

Project participant has obtained HCA approval (/Ref-A3/) from DNA of India and it is confirmed by the Authority that the project contributes to sustainable development in India. The project activity is in compliance with all current applicable legislations.

3.12. Local Stakeholder Consultation (140)

The project participants have completed a local stakeholder consultation process and that due steps were taken to engage stakeholders and solicit comments for the proposed project activity.

Invitation letters were sent on 25/09/2008 to local community, local village administration and officials of TNEB and consultation was carried out on 28/10/2008 at project site this was also confirmed by validation team interaction with local stake holders during site visit. The minutes of meeting of local stake holder consultation, attendance sheet and invitation letter (/Ref-A45/) was also verified by the validation team. The team confirms that local stake holder has been carried out by Project Participant and no negative issues has been raised the stake holders.

Bureau Veritas Certification hereby confirms that comments that are relevant for the proposed project activity have been invited from local stakeholders, the summary of the comments received as provided in the PDD is complete, the project participants have taken due account of all comments received and have described this process in the PDD.



4. COMMENTS BY PARTIES, STAKEHOLDERS AND NGOS

The PDD using methodology ACM0002, Version 13.0.0 (/Ref-B2/) was webhosted on the UNFCCC for global stakeholders comments as per CDM requirements. The project with the title “MCL wind power project in TamilNadu” from 06/06/2012 to 05/07/2012 (/Ref-A1/) was available on the UNFCCC website and during this consultation period no comments were received..



5. VALIDATION OPINION

Bureau Veritas Certification has performed a validation of the MCL wind power project in Tamilnadu, India, which is located in Illuppainagaram, Anikkadavu, Thottampatti, Virugalpatti Villages, Periyapatti Wind Farm, Udumalpet region, Tirpur District, Tamil Nadu, India. The validation was performed on the basis of UNFCCC criteria for the CDM, and host country criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting.

The validation consisted of the following three phases: i) desk review of the project design document and additional background documents; ii) follow-up interviews with project stakeholders; iii) resolution of outstanding issues and the issuance of the final validation report and opinion.

The project correctly applies the approved consolidated baseline and monitoring methodology ACM0002, Version 13.0.0 and uses the latest tool for demonstration and assessment of additionality (EB70, Annex8, Version 7.0.0), tool to Calculate the Emission Factor for an Electricity System (EB 65, Annex 19, version 02.2.1), Guidelines for the reporting and validation of PLF (Annexure 11, EB 48), Guidelines on the assessment of investment analysis (EB 62, Annex 5, Version 5.0) and Guidelines on common practice (EB 69, Annex 8, Version 2.0).

By synthetic description of the project, the project is likely to result in reductions of GHG emissions that are real, measurable and give long-term benefits to the mitigation of climate change. It is demonstrated that the project is not a likely baseline scenario. Emission reductions attributable to the project are hence additional to any that would occur in the absence of the project activity.

Given that the project is implemented and maintained as designed, the project is likely to achieve the estimated annual emission reductions of 36,966 tCO₂e and 369,660 tCO₂e during the ten years of its fixed crediting period.

The review of the project design documentation and the subsequent follow-up interviews have provided Bureau Veritas Certification with sufficient evidence to determine the fulfillment of stated criteria. In our opinion, the project meets all relevant UNFCCC requirements for the CDM and the relevant host country criteria. Bureau Veritas Certification thus requests registration of the project as a CDM project activity.

Mr. Sanjay Patankar
Internal Technical Reviewer
03/09/2013

Mr. V. Senthil Kumar
Team Leader
03/09/2013

6. REFERENCES

Category 1 Documents:

Documents provided by project participants that relate directly to the GHG components of the project.

(/Ref-A1/)	PDD published for global stake holder consultation for a capacity of 19.8 MW [http://cdm.unfccc.int/Projects/Validation/DB/Q861X5CIWDLQSWCRTY3HP0MHMBDM7S/view.html]
(/Ref-A2/)	Final PDD, Dated 10/08/2013
(/Ref-A3/)	Host Country Approval, Reference no: 4/1/2013-CCC, Dated 23/04/2013
(/Ref-A4/)	Letter of undertaking on contribution by MCL towards CSR activities, dated 27/11/2012
(/Ref-A5/)	Modalities of Communication (MoC), Dated 24/05/2013
(/Ref-A6/)	Central Electricity Authority database, Version 7.0, Dated 01/01/2012.
(/Ref-A7/)	Power purchase agreement signed between PP and Tamil Nadu Electricity Board. Dated 20/10/2008
(/Ref-A8/)	Commissioning certificates issued by Tamil Nadu Electricity Board, 1. Ref no Lr. No. SE/UEDC/UDT/AO/AS/IA4/F.Windfarm/S.C.N.1550/C/08 Dt., 14/10/08 – Date of Commissioning – 25/09/2008 2. Ref no Lr. No. SE/UEDC/UDT/AO/AS/IA4/F.Windfarm/S.C.N.1551/C/08 Dt., 14/10/08 – Date of Commissioning – 25/09/2008 3. Ref no Lr. No. SE/UEDC/UDT/AO/AS/IA4/F.Windfarm/S.C.N.1552/C/08 Dt., 14/10/08 – Date of Commissioning – 25/09/2008 4. Ref no Lr. No. SE/UEDC/UDT/AO/AS/IA4/F.Windfarm/S.C.N.1553/C/08 Dt., 14/10/08 – Date of Commissioning – 25/09/2008 5. Ref no Lr. No. SE/UEDC/UDT/AO/AS/IA4/F.Windfarm/S.C.N.1554/C/08 Dt., 14/10/08 – Date of Commissioning – 25/09/2008 6. Ref no Lr. No. SE/UEDC/UDT/AO/AS/IA4/F.Windfarm/S.C.N.1555/C/08 Dt., 14/10/08 – Date of Commissioning – 25/09/2008 7. Ref no Lr. No. SE/UEDC/UDT/AO/AS/IA4/F.Windfarm/S.C.N.1565/C/08 Dt., 16/10/08 – Date of Commissioning – 28/09/2008 8. Ref no Lr. No. SE/UEDC/UDT/AO/AS/IA4/F.Windfarm/S.C.N.1566/C/08 Dt., 16/10/08 – Date of Commissioning – 25/09/2008 9. Ref no Lr. No. SE/UEDC/UDT/AO/AS/IA4/F.Windfarm/S.C.N.1567/C/08 Dt., 14/10/08 – Date of Commissioning – 28/09/2008 10. Ref no Lr. No. SE/UEDC/UDT/AO/AS/IA4/F.Windfarm/S.C.N.1568/C/08 Dt., 14/10/08 – Date of Commissioning – 27/09/2008 11. Ref no Lr. No. SE/UEDC/UDT/AO/AS/IA4/F.Windfarm/S.C.N.1569/C/08 Dt., 15/10/08 – Date of Commissioning – 28/09/2008 12. Ref no Lr. No. SE/UEDC/UDT/AO/AS/IA4/F.Windfarm/S.C.N.1574/C/08 Dt., 16/10/08 – Date of Commissioning – 29/09/2008
(/Ref-A9/)	Emission reduction spread sheet
(/Ref-A10/)	Techno Commercial Offer Letter by Vestas Wind Technology India Private Limited. Dated 20/06/2008



(/Ref-A11/)	PLF estimation report prepared by M/s Fair Aero Consultant & Technologist
(/Ref-A12/)	LOI with M/s Vestas Wind Technology India Private Limited (Project activity Start date), Dated 22/07/2008
(/Ref-A13/)	Investment board decision on CDM awareness prior to project activity start date. Dated 04/07/2008
(/Ref-A14/)	MCL board resolution dated 02/08/2010 to sell 33 numbers of Enercon make WTG's
(/Ref-A15/)	Tax invoice receipts
(/Ref-A16/)	MCL board resolution to consider 19.80 MW as a CDM project activity
(/Ref-A17/)	PDD published for global stake holder consultation for a capacity of 46.2 MW [http://cdm.unfccc.int/Projects/Validation/DB/OB98HGOB9W6DUNN60IUBED9VHZRTUQ/view.html]
(/Ref-A18/)	Techno Commercial Proposal from Enercon for supply of WTG of capacity 26.4MW
(/Ref-A19/)	LOI to Enercon for supply of WTG of capacity 26.40 MW
(/Ref-A20/)	CDM Local stakeholders consultation for the project activity.
(/Ref-A21/)	Letter of appointment of DOE for the validation of project activity
(/Ref-A22/)	Project submitted to host country Designated National Authority (MoEF) for getting the Host Country Approval for the project activity.
(/Ref-A23/)	Letter detailing date of DNA Meeting for Host Country Approval
(/Ref-A24/)	Communication with CDM consultant intimating the selling of wind machines and seeking advice for further proceeding with CDM post selling of 33 WTGs of Enercon make of capacity of 0.8 MW each.
(/Ref-A25/)	Communication between RML & MCL regarding to further proceeding of project under CDM.
(/Ref-A26/)	MCL communicated the board decision to CDM consultant and asked for proposal for the revised capacity and the other formalities to be done.
(/Ref-A27/)	MCL signed the CDM Consultancy agreement for revised capacity-19.80MW with Ecoinvest Carbon SA
(/Ref-A28/)	MCL submitted the withdrawal request for 46.2 MW project to the DOE appointed for the 46.2 MW project and communicated with the DOE for validation quotation for the revised capacity i.e. -19.8MW.
(/Ref-A29/)	Appointment of the BVCH as DOE for 19.8 MW project. Dt., 12/03/2012
(/Ref-A30/)	Termination of contract with the DOE (TUV India Private Limited). Dt., 15/03/2012
(/Ref-A31/)	BSE Sensex Data derived from : http://www.bseindia.com/histdata/hindices.asp
(/Ref-A32/)	RBI published data
(/Ref-A33/)	Final IRR spread sheet
(/Ref-A34/)	Final Benchmark spread sheet
(/Ref-A35/)	NCES tariff order notification dated 15/05/2006 by Tamil Nadu Electricity Regulatory Commission.
(/Ref-A36/)	Actual O&M agreement dated 21/02/2010 between MCL & Vestas wind technology India Private limited.
(/Ref-A37/)	Employee & administrative expenses based on past MCL Wind Power Projects experience
(/Ref-A38/)	Employee & administrative expenses for the validated project activity



(/Ref-A39/)	Certified Proof for 100% equity by Company secretary and chartered accountant
(/Ref-A40/)	Income tax depreciation rate as per Appendix IA of the Income Tax rules 1962
(/Ref-A41/)	Book depreciation rate as per Schedule XIV of the Companies Act, 1956
(/Ref-A42/)	Corporate Income tax rate
(/Ref-A43/)	Section 80IA benefits, as per Appendix IA of the Income Tax rules 1962 [http://law.incometaxindia.gov.in/dittaxmann/incometaxacts/2008itact/sec_080-ia.htm]
(/Ref-A44/)	EIA notification dated 14/09/2006 [http://envfor.nic.in/legis/eia/so1533.pdf]
(/Ref-A45/)	Local stake holder consultation documents (Invitation letter, attendance sheet and minutes of meeting)
(/Ref-A46/)	WTGs Generation Data from April 2009 to April 2013
(/Ref-A47/)	Agreement signed between MCL and Bunge's Ecoinvest Carbon SA, dated 01/08/2007

Category 2 Documents:

Background documents related to the design and/or methodologies employed in the design or other reference documents used for cross-check.

(/Ref-B1/)	Validation & Verification Standard, version 3.0, EB 70
(/Ref-B2/)	Consolidated baseline methodology for grid – connected electricity generation from renewable sources – ACM0002, Version 13.0.0
(/Ref-B3/)	Tool to Calculate the Emission Factor for an Electricity System, EB 65, Annex 19, version 02.2.1
(/Ref-B4/)	Guidelines for the reporting and validation of PLF, Annexure 11, EB 48
(/Ref-B5/)	Glossary: CDM terms , Version. 07.0 – EB 70
(/Ref-B6/)	Tool for Demonstration and Assessment of Additionality, EB 70, Annex 8, Version 7.0.0
(/Ref-B7/)	Guidelines on the assessment of investment analysis, EB 62, Annex 5, Version 5.0
(/Ref-B8/)	Guidelines on common practice, EB 69, Annex 8, Version 2.0
(/Ref-B9/)	Tool to determine the remaining lifetime of equipment, EB 50, Annex 15
(/Ref-B10/)	Guidelines on the Demonstration and Assessment of Prior Consideration of the CDM, Version 04, Annex 13, EB 62

Persons interviewed:

Persons interviewed during the validation or persons that contributed with other information that are not included in the documents listed above.

A.	M/s Madras Cements Limited (Project Participant)	
1	Mr. Selvanayagam	Company Secretary
B	M/s Bunge Emission Group (Consultant)	
1	Mr. Vikash Yadav	Executive
C	Local Stakeholder	
1	Mr. S. Varadarajan	Farmer, Resident of Local Village



2	Mr. R. Ramachandran	Businessman, Resident of Local Village
3	Mr. J. Madana	Electrical Engineer – Vestas.



7. CURRICULA VITAE OF THE DOE'S VALIDATION TEAM MEMBERS

Mr. V. Senthil Kumar	Bureau Veritas Certification, India	<p>Team Leader, Climate Change Lead Verifier,</p> <p>He is a Environmental Engineer with over 6 years of experience in the field of Consultancy related to Training and Implementation of Management Systems (ISO : 9000, 14000 & 18000) for various organizations. For the last 4 years, he is involved in different type of Clean Development Mechanism Projects. He has also experience in offering project management services to various renewable energy projects. Has undergone training related to Clean Development Mechanism and is currently involved in validation and verification of CDM project activities.</p>
Mr. P. Shelton Victor	Bureau Veritas Certification, India	<p>Team Member, Climate Change Verifier.</p> <p>He is an Post Graduate Energy Engineer and also holds a Bachelors Degree in Mechanical engineering with expertize in offering consultancy services in renewable energy (especially wind energy) and energy auditing verticals. He has undergone intensive training on Clean Development Mechanism (CDM) and completed CDM Verifier/ Lead Verifier training course and currently involved in validation of CDM project activites</p>
Mr. Sanjay Patankar	Bureau Veritas Certification, India	<p>Internal Technical Reviewer</p> <p>Educational qualifications: B.E. (Mech.) M.E. (Mech.)</p> <p>He has over 20 years of experience in engineering manufacturing industry covering various functions like enterprise management, product design, engineering, tool & die design, improvements in the production shop, quality assurance & control and systems planning and implementation, including ISO 9001 based quality management systems. Working for the last 2 years in Bureau Veritas Certification (India) Private Ltd. as Lead Auditor for ISO 9001, 14001 and OHSAS 18001 standards/specifications. Has</p>



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		undergone training related to Clean Development Mechanism and is currently involved in validation and verification of CDM project activities.
Mr. Hitesh Karandikar	Bureau Veritas Certification, India	<p>Specialist supporting Technical Reviewer, Climate Change, Lead Verifier.</p> <p>He has a B.E. (Bachelor of Engineer) in Electrical Engineering. (1991 batch). He is an MBA in Marketing and Finance. He has worked in Gujarat Electricity Board of Gujarat state in various departments. He has worked at world renowned Hydro Power project viz. "Sardar Sarovar Narmada Nigam Limited". He has an experience of Designing switch Yard Structures, foundation switchyard structures. He is a certified Energy Manger from Bureau of Energy Efficiency, and has vide experience of preliminary energy audit of more than 200 industries. He was also a team mate from Gujarat Electricity Board, in carrying out thermal power energy audit carried out by NPC, Hyderabad and ERDA, Vadodara. He has been faculty in many "Energy Conservation" seminars/conferences.</p> <p>His other professional qualification includes : He is a ISO 9001, 14001 and OHSAS 18001 Lead Auditor (more than 200 man-day audit experience). He is also a certified Six Sigma Black Belt. He has successfully undergone training of CDM verifier organized by Bureau Veritas.</p>
Mr. Jayaram	Karthikeyan and Jayaram Associates, India (Financial Expert)	Services from Jayaram & Karthikeyan Associates were delivered by Mr. Jayaram, who is a Chartered Accountant. He possesses in depth understanding and experience in Assurance services relating to financial appraisals & analyses, those specially related to CDM projects. He is empanelled with BVCH for scrutinizing the financial additionality aspects of the CDM projects handled by BVCH and expressing opinions on the financials of the project participant. Has appraised over 50 CDM projects for financial additionality on behalf of CDM validators of repute.

APPENDIX A: CDM PROJECT VALIDATION PROTOCOL

Table 1 Validation requirements based on VVS version 03.0 (EB 70 Annex 3), PS version 02.1 (EB 70 Annex 2), PCP version 03.1 (EB 70 Annex 4), and Guidelines for completing the PDD form version 01.0 (EB 66 Annex 8)

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
Part I Cover Page					
(a) Is the title of the project activity provided?	PDD		Yes the title of the Project Activity is provided as MCL wind power project in Tamil Nadu, India	OK	OK
(b) Is the version number of the PDD indicated?	PDD		Yes, the version number of the PDD is 02	OK	OK
(c) Is the completion date of the PDD provided in DD/MM/YYYY format?	PDD		Yes, the completion date of the PDD is 01/11/2012	OK	OK
(d) Are project participants indicated?	PDD		Yes, the Project Participant is Madras Cements Limited	OK	OK
(e) Is the host party(ies) indicated?	PDD		Yes, the host part is India	OK	OK
(f) Is the sectoral scope and selected methodology(ies) indicated?	PDD		Yes; the sectoral scope: 01 and the applied methodology: ACM 0002 version 13.3.0	OK	OK
(g) Is the estimated amount of annual average GHG emission reductions indicated?	PDD		The estimated amount of annual average GHG emission reductions is indicated as 41,541 tCO _{2e}	OK	OK
Part II PDD					
A. Description of project activity					
A.1 Purpose and general description of project activity					
A.1.1 Is a brief description of the project activity provided, including a summary of the scope of activities/	PDD PS	31(b)	Yes provided	OK	OK

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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
measures that are to be implemented within the project activity?					
A.1.2 Are the scenario existing prior to the start of project and baseline scenario indicated?	PDD		The baseline scenario has been stated, however the same is not meeting the requirements of "Guidelines for completing the project design document form for small-scale CDM project activities"	CAR 1.	OK
A.1.3 Does it explain how the project activity will reduce GHG emissions or increase GHG removals?	PS	31(c)	The PDD states that there will be a reduction in emissions due to the project activity.	OK	OK
A.1.4 Is the estimated of annual average and total GHG emission reductions for the chosen crediting period provided?	PDD		The annual average and total GHG emission reductions for the chosen crediting periods are not provided as required by F-CDM-PDD completion guidelines	CAR 2.	OK
A.1.5 Is a brief description of how the project activity contributes to sustainable development provided?	PDD		Yes provided	OK	OK
A.1.6 In order to determine whether the description of the proposed project activity in the PDD is accurate, complete, and provides an understanding of the proposed CDM project activity, does the DOE conducted a physical site visit to assess the Project? If not, please justify.	VVS	65	Site visit were conducted on 28/09/2012 by validation team and discussions were carried out with plant officials at site and also with the local stake holders who where present during the earlier meeting held by MCL on 28 th /10/2008, based on the discussions, it is understood that the proposed Project Activity is in tune with the webhosted PDD.	OK	OK
A.1.7 For all other proposed CDM project activities not referred to in VVS paragraphs 65-66, does the DOE undertaken the validation of project description by reviewing available designs and	VVS	67	The Project Activity is a non – bundled small-scale Project Activity with emission reduction exceeding 15,000 Ton per year and physical site inspection has been carried	OK	OK

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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
feasibility studies and should conduct comparison analysis with equivalent projects, as appropriate.			out on 16 July.		
A.1.8 If the proposed CDM project activity involves the alteration of an existing installation or process, does the project description state the differences resulting from the project activity compared to the pre-project situation?	VVS	68	Please refer Section A.1.2 above	(CAR 1)	OK
A.2 Location of project activity					
A.2.1 Is the host party(ies) indicated?	PDD		India is the host party	OK	OK
A.2.2 Is region/state/province etc. indicated?	PDD		Tamil Nadu state	OK	OK
A.2.3 Is City/Town/Community etc. indicated?	PDD		The project is located in Tirpur district in Tamil Nadu.	OK	OK
A.2.4 Are the details of physical location of the project activity provided?	PDD		The location stated in the webhosted PDD is not matching with the details stated in the Power Purchase Agreement. PP to clarify the same.	CL 1	OK
A.3 Technologies and measures					
A.3.1 Are there a list and the arrangement of the main manufacturing/ production technologies, systems and equipment involved?	PDD		Please refer Section A.1.2 above	(CAR 1)	OK
A.3.1.1 Is the information about the age and average lifetime of the equipment based on manufacturer's specifications and industry standards, and existing and forecast installed capacities, load factors and efficiencies	PDD		Yes provided	OK	OK

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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
included in the description?					
A.3.1.2 Are the monitoring equipments and their location in the systems included in the description?	PDD		Not Applicable		OK
A.3.2 Are energy and mass flows and balances of the systems and equipment included in the project activity provided?	PDD		Not Applicable	OK	OK
A.3.3 Are the types and levels of services provided by the systems and equipment that are being modified and/or installed under the project activity and their relation, if any, to other manufacturing/ production equipment and systems outside the project boundary provided?	PDD		Not Applicable	OK	OK
A.3.4 Does the description clearly explain how the same types and levels of services provided by the project activity would have been provided in the baseline scenario?	PDD		Yes provided	OK	OK
A.3.5 Is a list of facilities, systems and equipment in operation under the existing scenario prior to the implementation of the project activity provided?	PDD		Yes Provided	OK	OK
A.3.6 Is a list of facilities, systems and equipment in the baseline scenario provided?	PDD		The baseline scenario involves regional grid from the Host Party, to which multiple power plants will be connected, hence the list of facilities, systems and equipments involved in the baseline scenario cannot be ascertained.	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
A.3.7 Is a description of how technologies and measures and know-how to be used are transferred to the Host Party(ies) included?	PDD		The webhosted PDD is silent on whether there is any transfer of technology.	CAR 3.	OK
A.4 Party(ies) and project participant(s)					
A.4.1 Are following information provided in a tabular format?					
A.4.1.1 List of project participants and parties	PDD		Yes provided	OK	OK
A.4.1.2 Identification of Host Party	PDD		India is identified as the host party	OK	OK
A.4.1.3 Indication whether the Party wishes to be considered as project participant	PDD		The party does not wish to be Project Participant	OK	OK
A.5 Public funding of project activity					
A.5.1 Is it indicated whether the project activity receives public funding from Annex I Parties?	PDD		Project Participant has confirmed in the webhosted PDD that there are no public funding involved	OK	OK
A.5.2 In case where public funding from Annex I Parties is involved, are followings provided? (a) Information on Parties providing public funding (b) Attached in Appendix 2: the affirmation obtained from such Parties that such funding does not result in a diversion of official development assistance, is separate from, and is not counted towards the financial obligations of those Parties	PS	34	Not Applicable	OK	OK
B. Application of selected approved baseline and					

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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
monitoring methodology					
B.1 Reference of methodology					
B.1.1 Is the selected methodology (ies) indicated with exact reference (number, title and version)?	PDD		Yes provided	OK	OK
B.1.2 Are the baseline and monitoring methodologies selected by the project participants the valid versions of those approved by the Board?	VVS	70	The baseline and monitoring methodologies applied for the Project Activity is approved by the board.	OK	OK
B.1.3 Are there any tools and other methodologies to which the selected methodology indicated?	PDD		<p>Yes, the following tools are considered for the Project Activity:</p> <ol style="list-style-type: none"> 1. Tool for the demonstration and assessment of additionality, Version 06.0.0. 2. Tool to calculate the emission factor for an electricity system, Version 02.2.1. 	OK	OK
B.1.4 Has specific guidance and/or clarifications provided by the Board with respect to the approved methodology and any applicable tools been applied?	VVS	71	Not Applicable	OK	OK
B.1.5 Is there any deviation or clarification requested for the approved methodology?	VVS	78-81	No there are no deviation or clarification requested for the approved methodology	OK	OK
B.2 Applicability of methodology					
B.2.1 Is the selected baseline and monitoring methodology applicable to the project activity and	VVS	73-75	Yes valid.	OK	OK

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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
that the selected version valid at the time of submission of the proposed project activity for registration?					
B.2.2 Does the project activity meet each of the applicability conditions of the approved methodology or other methodology component referred to therein?	PDD VVS	76	Yes provided	OK	OK
B.3 Project boundary					
B.3.1 Are the emission sources and GHGs included in the project boundary for the purpose of calculating project emissions and baseline emissions described using the table provided?	PDD		Yes provided	OK	OK
B.3.2 Is a flow diagram of the project boundary presented, physically delineating the project activity?	PDD		Yes provided	OK	OK
B.3.3 Does the flow diagram include the equipment, systems and flows of mass and energy described? In particular, is the emission sources and GHGs included in the project boundary and the data parameters to be monitored indicated in the diagram?	PDD VVS	82	Yes Provided.	OK	OK
B.4 Establishment and description of baseline scenario					
B.4.1 Is an explanation how the baseline scenario is established in accordance with the selected	PDD VVS	89	Yes provided	OK	OK

VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
baseline methodology provided?					
B.4.2 When establishing the baseline scenario, and where “future anthropogenic emissions by sources are projected to rise above current levels due to the specific circumstances of the host Party”, do the project participants follow the “Guidelines on the consideration of suppressed demand in CDM methodologies”?	PS	42	The base line scenario is defined, which is Southern regional grid and hence this section is not applicable.	OK	OK
B.4.3 Does the approved methodology that is selected by the proposed CDM project activity prescribe the baseline scenario and hence no further analysis is required?	VVS	113, 115	Yes provided	OK	OK
B.4.4 If no, does the PDD identify credible alternatives to the project activity in order to determine the most realistic baseline scenario?	VVS	114	Not applicable	OK	OK
B.4.5 Does the list of alternatives given in the PDD ensure that: (a) One of the options that the project activity is undertaken without being registered as a proposed CDM project activity (b) The list contains all plausible alternatives (c) The alternatives comply with all applicable and enforced legislation	VVS	114	The baseline scenario is well defined	OK	OK
B.4.6 Has any procedure contained in the methodology to identify the most reasonable baseline scenario,	PDD VVS	89	Yes provided	OK	OK

VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
been correctly applied?					
B.4.7 Is the baseline identified for the proposed project activity the scenario that reasonably represents the anthropogenic emissions by sources of GHGs that would occur in the absence of the proposed project activity?	VVS	88	Yes identified	OK	OK
B.4.8 Does the selected methodology require use of tools (such as the “Tool for the demonstration and assessment of additionality” and the “Combined tool to identify the baseline scenario and demonstrate additionality”) to establish the baseline scenario?	VVS	89	Project Participant has considered the Tool for the demonstration and assessment of additionality, Version 06.0.0, EB 65 towards assessing the additionality of the Project Activity.	OK	OK
B.4.9 Does the methodology require several alternative scenarios to be considered in the identification of the most reasonable baseline scenario?	VVS	90	The base line scenario is defined, which is Southern regional grid and hence not required.	OK	OK
B.4.10 Are the documents and sources referred to in the PDD correctly quoted and interpreted and are they crosschecked with other verifiable and credible sources, such as local expert opinion, if available?	PDD VVS	91	<p>The data and sources towards baseline establishment are derived from Central Electricity Authority (GOI) and the published are considered to be authentic.</p> <p>Under section B.4 of the webhosted PDD, Project Participant data considered to explain baseline scenario has not been elaborated in detail and same is not meeting the requirements of Guidelines for Completing the PDD.</p>	OK CAR 4.	OK
B.4.11 Does the PDD provide a description of the	VVS	92	The baseline scenario is well defined which	OK	OK

VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
identified baseline scenario, including a description of the technology that would be employed and/or the activities that would take place in the absence of the proposed project activity?			is Electricity delivered to the grid (Southern grid) by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources		
B.4.12 Have all applicable CDM requirements been taken into account in the identification of the baseline scenario for the proposed project activity?	VVS	93	All The baseline scenario is well defined which is Electricity delivered to the grid (Southern grid)	OK	OK
B.4.13 Has relevant national and/or sectoral policies and circumstances (type E+ or E-), such as sectoral reform initiatives, local fuel availability, power sector expansion plans, and the economic situation in the project sector been taken into account?	VVS	93	Relevant National policies, regulations and circumstances relevant to the baseline scenario have not been detailed in the webhosted PDD.	CAR 5.	OK
B.4.14 Is a transparent description of the baseline scenario provided?	PDD		Yes provided	OK	OK
B.5 Demonstration of additionality					
B.5.1 Is the project activity demonstrated additional in accordance with the selected methodology (ies)?	PDD		Yes demonstrated	OK	OK
B.5.2 Where the procedure in the selected methodology(ies) and/or tool involves several steps, is it described how each step is applied and is the outcome of each step transparently documented?	PDD		Yes provided	OK	OK
B.5.3 Is the method selected to demonstrate additionality clearly indicated?	PDD		Investment analysis has been considered to demonstrate additionality and it has been	OK	OK

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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			clearly stated in the webhosted PDD.		
B.5.4 If investment analysis is used:					
B.5.4.1 Are all relevant assumptions and parameters used in the analysis listed?	PDD		Yes provided	OK	OK
B.5.4.2 Is the latest version of the “Guidelines on the assessment of investment analysis” applied?	VVS	118	Yes the latest version 5.0, EB 62 has been considered	OK	OK
B.5.4.3 Is project activity one of the following cases in regards to investment analysis:	VVS	119			
B.5.4.3.1 The proposed project activity would produce no financial or economic benefits other than CDM-related income;	VVS	119(a)	Not Applicable	OK	OK
B.5.4.3.2 The proposed project activity is less economically or financially attractive than at least one other credible and realistic alternative;	VVS	119(b)	Not Applicable	OK	OK
B.5.4.3.3 The financial returns of the proposed project activity would be insufficient to justify the required investment.	VVS	119(c)	the financial returns from the Project Activity is well below the market yield rates which is 7.62 to 8.64% for a period of 10 years from 2007 – 2008, which is based on RBI data. http://rbidocs.rbi.org.in/rdocs/AnnualReport/PDFs/86544.pdf	OK	OK
B.5.4.4 Has the accuracy of financial calculations carried out for investment analysis been verified as follows:	VVS	120			



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
B.5.4.4.1 Determine the suitability of the financial indicator selected by the project participants and conduct a thorough assessment of all parameters and assumptions used in calculating such financial indicators, and determine the accuracy and suitability of these parameters using available evidence and applying its expertise in relevant accounting practices	VVS	120(a)	<ol style="list-style-type: none"> 1. Project Participant to make available the following supporting documents for validation: <ol style="list-style-type: none"> i. Signed copy of proposal from Vestas for supply of WTG ii. Commissioning certificate for WTG, bearing HTSC number 1566 iii. Date of DNA meeting for host country approval iv. Towards validation site visit carried on 15/05/2010 v. Communication between CDM consultant and MCL to proceed with the revised project capacity. vi. MCL has sold the WTGs to the RML and Group concern vii. MCL signed the CDM Consultancy agreement for revised capacity-19.8MW with Ecoinvest Carbon SA viii. MCL submitted the withdrawal request for 46.2 MW project to the DOE appointed for the 46.2 MW project and 	CL 2	OK



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			<p>communicated with the DOE for validation quotation for the revised capacity i.e. -19.8MW.</p> <p>ix. Project Participant to make available supporting documents for “employee & administrative expenses” considered in the webhosted PDD for validation.</p> <p>2. It is observed that the depreciation has been calculated including land cost which is not depreciable asset; clarify?</p> <p>3. MAT tax credit u/s. 115 JAA of IT Act has not been considered for calculating the taxation; clarify?</p> <p>4. Project Participant to justify why fair value of land cost has not been considered as part of the salvage value?</p> <p>5. From the IRR spread sheet Project Participant has considered generation for 6 months for the first year of operation of WTG’s whereas insurance cost are considered for 1 year, clarify</p>		



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			6. The WTG's are expected to be commissioned prior to September 2008, hence clarify the computation considered for Income tax depreciation i.e., why depreciation benefits are not considered for one full year during the first year of operation?		
B.5.4.4.2 Cross-check the parameters against third-party or publicly available sources, such as invoices or price indices	VVS	120(b)	<p>i. Project Participant to clarify the availability of weighted average data to deduce benchmark (Reserve Bank of India Annual Report 2007 -2008 dated 29/08/2008) Viz., the board investment decision date (04/07/2008).</p> <p>ii. Project Participant to justify the availability of PLF value of 26.7% considered in the webhosted PDD & IRR spread sheet Viz.,</p> <p style="padding-left: 40px;">a) The referred source.</p> <p style="padding-left: 40px;">b) Board investment decision date.</p> <p>iii. Project Participant to justify the availability of following parameters; considered in the webhosted PDD & IRR spread sheet Viz., the referred source & board investment decision date.</p>	CL 3	OK



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			a) Tariff rate considered towards sale of power. b) Insurance Cost (% of the project Cost) c) Percentage reduction in Insurance Cost per year after 5 th year iv. Project Participant to clarify whether there are any subsidies or incentive on tariff availed by the Project Activity from any of the Government bodies.		
B.5.4.4.3 Review, as appropriate, feasibility reports, public announcements and annual financial reports related to the proposed project activity and the project participants	VVS	120(c)	Project Participant to submit annual reports for the last three years.	CL 4	OK
B.5.4.4.4 Assess the correctness of computations carried out and documented by the project participants; and	VVS	120(d)	Please refer section B.5.4.4.1 above.	(CL 2)	OK
B.5.4.4.5 Assess, where applicable, the sensitivity analysis by the project participants to determine under what conditions variations in the result would occur, and the likelihood of these conditions.	VVS	120(e)	PP to provide workings of scenarios in the sensitivity analysis where the IRR would cross the benchmark and probabilities of occurrence the scenarios.	CL 5	OK

VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
B.5.4.5 If benchmark analysis is used:					
B.5.4.5.1 Is the benchmark clearly indicated?	PDD		Yes return on equity has been considered as the benchmark	OK	OK
B.5.4.5.2 Is the type of benchmark applied suitable for the type of financial indicator presented?	VVS	121(a)	<p>1. Project Participant to justify the appropriateness of the benchmark applied with respect to the Financial Indicator – Post Tax Equity IRR for demonstrating additionality.</p> <p>PP has applied return on equity as the bench mark for this project activity and PP to confirm and demonstrate; PP to clarify whether there are other existing wind power projects and also the consistency in applying this benchmark for the investment decision in the past.</p> <p>2. Project Participant has considered levered beta for calculating the COE, hence Project Participant to justify why a more appropriate approach like unlevered beta has not been adopted?</p> <p>3. Why a vintage data from 1978-79 has not been considered for computation of market return?</p> <p>4. Based on the supporting document provided the validation team is not able to ascertain the term of maturity</p>	CL 6	OK

VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			considered to estimate applicable risk free rate; Project Participant to explain.		
B.5.4.5.3 Does the risk premiums applied in determining the benchmark reflect the risks associated with the project type or activity?	VVS	121(b)	Please refer section B.5.4.5.2 above	(CL 6)	OK
B.5.4.5.4 Is it reasonable to assume that no investment would be made at a rate of return lower than the benchmark?	VVS	121(c)	Yes, it is reasonable to consider that no investment would be made at rates lower than the bench mark.	OK	OK
B.5.4.6 If cost comparison is used:					
B.5.4.6.1 Are the scenarios compared described?	PDD		Not applicable	OK	OK
B.5.4.7 If PPs rely on values from FSR:	VVS	122			
B.5.4.7.1 Has the FSR been the basis of the decision to proceed with the investment in the project?	VVS	122(a)	Not applicable	OK	OK
B.5.4.7.2 Are the values used in the PDD and associated annexes fully consistent with the FSR? If inconsistencies occur, was the appropriateness of the values validated?	VVS	122(b)	Not applicable	OK	OK
B.5.4.7.3 On the basis of its specific local and sectoral expertise, is confirmation provided, by cross-checking or other appropriate manner, that the input values from the FSR are valid and applicable at the time of the investment	VVS	122(c)			

VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
decision?					
B.5.5 If barriers analysis is used:					
B.5.5.1 Is the “Guidelines for objective demonstration and assessment of barriers” followed?	PS	48	The project activity considers investment analysis and the project participant has not used the barrier analysis route to demonstrate additionality.	OK	OK
B.5.5.2 Is it ensured that only the most relevant barriers selected?	PDD		Not Applicable	OK	OK
B.5.5.3 Is the credibility of the barriers justified with key facts and/or assumptions and the rationale?	PDD		Not Applicable	OK	OK
B.5.5.4 Is it ensured that issues that have a direct impact on the financial returns of the project activity are not considered as barriers but assessed by investment analysis? This does not refer to either: (a) Risk related barriers (b) Barriers related to the unavailability of sources of finance for the project activity	VVS	125	Not Applicable	OK	OK
B.5.5.5 Were the barriers determined as real?	VVS	126(a)	Not Applicable	OK	OK
B.5.5.6 Were the barriers determined as preventing the implementation of the project activity but not the implementation of at least one of the possible alternatives?	VVS	126(b)	Not Applicable	OK	OK
B.5.6 Common Practice Analysis					

VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
B.5.6.1 If the project type is first-of-its kind, do the project participants consider “Guidelines on additionality of first-of-its-kind project activities”?	VVS PS	128 49(a)	The Project Activity is not first of its kind and hence not applicable	OK	OK
B.5.6.2 If the project type is not first-of-its kind, has common practice analysis been conducted considering “Guidelines on common practice”?	VVS PS	128 49(b)	The common practice demonstrated in the webhosted PDD is not in line with the paragraph 6 and 47 of “Tool for the demonstration and assessment of additionality” (Version 06.1.0), Annex 20, EB 69.	CAR 6.	OK
B.5.6.3 Was it assessed whether the geographical scope of the common practice analysis is appropriate for the assessment related to the project activity’s technology or industry type?	VVS	129(a)	Please refer Section B.5.6.2 above	(CAR 6)	OK
B.5.6.4 Was it determined to what extent similar and operational projects, other than CDM project activities, and have been undertaken in the defined region?	VVS	129(b)	Please refer Section B.5.6.2 above	(CAR 6)	OK
B.5.6.5 Are similar and operational projects, other than CDM project activities, already “widely observed and commonly carried out” in the defined region? Is it assessed whether there are essential distinctions between the proposed CDM project activity and the other similar activities?	VVS	129(c)	Please refer Section B.5.6.2 above	(CAR 6)	OK
B.5.7 Prior consideration of the clean development					

VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
mechanism					
B.5.7.1 If the project activity start date prior to the date of publication of the PDD for stakeholder comments, were the CDM benefits considered necessary in the decision to undertake the project as a proposed CDM project activity?	PDD VVS	105	The start date of the Project Activity was 22/07/2008 and is prior to the date of publication towards global stake holder comments was on 06/06/2012	OK	OK
B.5.7.2 Is the start date of the project activity, reported in the PDD, the earliest date at which either the implementation or construction or real action of a project activity begins?	VVS	106	The start date of the Project Activity is 22/07/2008 which is the real action for the Project Activity. The date of placing purchase order for on equipment (WTG's) supplier has been considered as the start date. The same is meeting requirements of CDM Glossary of Terms.	OK	OK
B.5.7.3 If the project activity requires construction, retrofit or other modifications, is it ensured that the date of commissioning not considered as the project activity start date?	VVS	106	Not Applicable as the project activity is a Greenfield project.	OK	OK
B.5.7.4 Is it a project activity with a start date on or after 02 August 2008, or before 02 August 2008?	VVS	106	The start date of the Project Activity is 22/07/2008 and is before 02/08/2008.	OK	OK
B.5.7.5 For a project activity with a start date on or after 02 August 2008, are the following provisions to be satisfied:			<i>for which PDD has not been published for GSC or a new methodology proposed to the EB before the project activity start date</i>		
B.5.7.5.1 Has the PP informed the Host Party DNA and the UNFCCC secretariat in writing of the commencement of the project activity and of	PS VVS	27 107	Not applicable	OK	OK

VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
their intention to seek CDM status within 180days of the project activity start date?					
B.5.7.5.2 Do the project participants inform the secretariat of the progress of the project activity every subsequent two years after the initial notification, until the PDD regarding the project activity has been published for global stakeholder consultation or, a new baseline and monitoring methodology is proposed or a revision of an approved baseline and monitoring methodology is requested for the project activity before the start date?	PCP	9	Not applicable	OK	OK
B.5.7.6 For a project activity with a start date before 02 August 2008, are the following elements to be satisfied:	VVS	108	<i>for which the start date is prior to the date of publication of the PDD for global stakeholder consultation</i>		
B.5.7.6.1 Are evidence of their awareness of the CDM prior to the project activity start date, and that the benefits of the CDM were a decisive factor in the decision to proceed with the project provided?	PS VVS	28 (a) 108	Yes Board decision has been carried out on 04/07/2008.	OK	OK
B.5.7.6.2 Are evidence that continuing and real actions were taken to secure CDM status for the project in parallel with its implementation provided?	PS VVS	28 (b) 108- 110	Yes provided, however the supporting documents to be made available with validation team, please refer section B.5.4.4.1 above	(CL 2)	OK
B.5.7.6.3 Is an implementation timeline of the proposed CDM project activity provided?	PS	28(c)	Yes provided under Section B.5 of the PDD.	OK	OK

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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
B.6 Emission reductions					
B.6.1 Explanation of methodological choices					
B.6.1.1 Does the PDD explain how the methods or methodological steps in the selected methodology, for calculating project emissions, baseline emissions, leakage emissions and emission reductions are applied?	PDD VVS	96	Yes provided	OK	OK
B.6.1.2 In case the methodology(ies) include different scenarios or cases, does the PDD indicate and justify which scenario or cases applies to the project activity?	PDD		Base line scenario is well established and is based on data provided by CEA (GOI), hence this section is Not applicable	OK	OK
B.6.1.3 In case the methodology(ies) provide different options to choose from, does the PDD indicate and justify which option is chosen for the project activity?	PDD VVS	97	Yes provided	OK	OK
B.6.1.4 In case the methodology (ies) allow different default values, does the PDD indicate and justify which of the default values have been chosen for the project activity?	PDD		The project activity does not involve different default values; hence this section is not applicable.	OK	OK
B.6.2 Data and parameters fixed ex ante					
B.6.2.1 If data and parameters will not be monitored throughout the crediting period of the proposed project activity but have already been determined and will remain fixed throughout the crediting period, are all data sources and	PDD VVS	98	Base line scenario is well established and is based on data provided by CEA (GOI), hence this section is Not applicable hence appropriate & correct, applicable to proposed CDM project activity and	OK	OK

VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
assumptions: (a) Appropriate and correct? (b) Applicable to the proposed CDM project activity? (c) Resulting in a conservative estimate of the emission reductions?			conservative estimate of the emission reductions.		
B.6.2.2 For each piece of data or parameter, are tables provided in accordance with the instructions?	PDD		The "purpose of data" detailed across tables under section B.6.2 of the webhosted PDD is not in line with the Guidelines for Completing the PDD.F-CDM-PDD completion guidelines.	CAR 7.	OK
B.6.3 Ex ante calculations of emission reductions					
B.6.3.1 Is a transparent ex ante calculation of project emissions, baseline emissions (or, where applicable, direct calculation of emission reductions) and leakage emissions expected during the crediting period, applying all relevant equations provided in the approved methodology provided?	PDD		Yes provided	OK	OK
B.6.3.2 Is the information how each equation is applied, in a manner that enables the reader to reproduce the calculation, provided?	PDD		Yes provided	OK	OK
B.6.3.3 Is the information of additional background information and/or data provided in Appendix 4, including relevant electronic spreadsheets?	PDD		Additional background are provided under Appendix 4.	OK	OK
B.6.3.4 Is a sample calculation for each equation used provided, substituting the values used in the	PDD		Please refer section B.5.4.4.2 above	(CL 3 (ii))	OK

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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
equations?					
B.6.4 Summary of the ex ante estimates of emission reductions					
B.6.4.1 Are the results of the ex ante estimation of emission reductions for all years of the crediting period, provided in a tabular format?	PDD		Yes provided	OK	OK
B.7 Monitoring Plan					
B.7.1 Data and parameters to be monitored					
B.7.1.1 Is specific information on how the data and parameters that need to be monitored would actually be collected during monitoring included?	PDD		Yes provided	OK	OK
B.7.1.2 For each data or parameter, is the information completed, in a tabular format:					
B.7.1.2.1 The source(s) of data that will be actually used for the proposed project activity (e.g. which exact national statistics). Where several sources may be used, explain and justify which data sources should be preferred.	PDD		Not applicable	OK	OK
B.7.1.2.2 Is an estimate of the data/ parameter that will be monitored during the crediting period provided?	PDD		Yes provided	OK	OK
B.7.1.2.3 Where data or parameters are to be	PDD		Based on site visit the validation team	CL 7	OK

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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
measured, does it specify the measurement methods and procedures, standards to be applied, accuracy of the measurements, person/entity responsible for the measurements, and, in case of periodic measurements, the measurement intervals?			<p>understands that for:</p> <ul style="list-style-type: none"> i. WTG bearing HTSC # U1554 meter has been changed from ELSTER (tri-vector) 0.5s to L&T (ABT) 0.2s, hence Project Participant to explain the reason for change of meter. ii. WTG bearing HTSC # U1567, Project Participant to clarify the meter employed Viz., the supporting document provided by Madras Cements Limited on E.B meter details for Vestas 1650kW iii. The accuracy class of meter mentioned in section B.7.1 of the webhosted PDD is not consistent with the actual site conditions. iv. The webhosted PDD states that Net Electricity Generated would be measured by the energy meter. Project Participant to clarify the same. v. The Project Participant in section 		

VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			B.7.1 of the webhosted PDD states that “one check meter on local control system of WTG”. Project Participant to clarify the above statement.		
B.7.1.2.4 Is a description of the QA/QC procedures including the calibration procedures, where applicable, provided?	PDD		Project Participant to clarify the steps considered as QA/QC procedures in the event of faulty meter(s) in line with prevailing Tamil Nadu State Electricity Board operational procedures.	CL 8	OK
B.7.1.2.5 Is the purpose of data indicated?	PDD		The “purpose of data” detailed across tables under section B.7.1 of the webhosted PDD to be in line with F-CDM-PDD completion guidelines.	CAR 8.	OK
B.7.1.3 Is this monitoring plan based on the approved monitoring methodology applied to the proposed CDM project activity?	VVS	131	Yes applied	OK	OK
B.7.1.4 Does the monitoring plan contain all necessary parameters?	VVS	132(a)	It is understood from webhosted PDD, archiving of data will be carried out, however it is not clear who will be responsible towards archiving of data	CL 9	OK
B.7.1.5 Do the means of monitoring described in the plan comply with the requirements of the methodology including applicable tool(s)?	VVS	132(a)	Yes applicable	OK	OK
B.7.1.6 Are the monitoring arrangements described in the monitoring plan feasible within the project	VVS	132(b)	Monitoring plan is applicable and feasible towards implementation on the Project	OK	OK

VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
design?			Activity.		
B.7.1.7 Are the means of implementation of the monitoring plan sufficient to ensure that the emission reductions achieved by/resulting from the proposed CDM project activity can be reported ex post and verified?	VVS	132(b)	Based on monitoring plan described by Project Participant in the PDD all Ex post can be verified.	OK	OK
B.7.2 Sampling plan					
B.7.2.1 Are there any data and parameters monitored in section B.7.1 above to be determined by a sampling approach?	PDD		Not applicable	OK	OK
B.7.2.2 Is a description of the sampling plan provided in accordance with the recommended outline for a sampling plan in the "Standard for sampling and surveys for CDM project activities and programme of activities"?	PDD		Not applicable	OK	OK
B.7.3 Other elements of monitoring plan					
B.7.3.1 Is the operational and management structure, that the project operator will implement in order to monitor emission reductions and any leakage generated by the project activity, described in the PDD?	PDD PS	56(a)	Project Participant to clarify the procedure considered in the event of failure of meter(s) in line with prevailing Tamil Nadu State Electricity Board operational procedures.	CL 10	OK
B.7.3.2 Are the responsibilities for and institutional arrangements for data collection and archiving clearly indicated?	PDD PS	56(c)	Yes provided	OK	OK
B.7.3.3 Does the monitoring plan include provisions to	PS	56(b)	Yes provided	OK	OK

VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
ensure that data monitored and required for verification and issuance be kept and archived electronically for two years after the end of the crediting period or the last issuance of CERs, whichever occurs later?					
B.7.3.4 Does the monitoring plan include uncertainty levels, methods and the associated accuracy level of measuring instruments to be used for various parameters and variables?	PS	56(e)	Please refer Section B.7.1.2.3 above	(CL 7)	OK
B.7.3.5 Does the monitoring plan include specifications of the calibration frequency for the measuring equipments?	PS	56(f)	Please refer section B.7.1.2.3 above	(CL 7)	OK
C. Duration and crediting period					
C.1 Duration of project activity					
C.1.1 Start date of project activity					
C.1.1.1 Is the start date of the project activity stated, in the format of DD/MM/YYYY?	PDD		Yes provided	OK	OK
C.1.1.2 Does it describe how the start date has been determined and provide evidence to support this date?	PDD		Yes provided	OK	OK
C.1.2 Expected operational lifetime of project activity					
C.1.2.1 Is the expected operational lifetime of the project activity stated in years and months?	PDD		Yes provided	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
C.2 Crediting period of project activity					
C.2.1 Type of crediting period					
C.2.1.1 Is the type of crediting period chosen for the project activity stated?	PDD		Yes provided	OK	OK
C.2.1.2 In case a renewable crediting period was chosen, does it indicate whether it is the first, second or third?	PDD		Not Applicable	OK	OK
C.2.2 Start date of crediting period					
C.2.2.1 Is the start date of crediting period stated in the format of DD/MM/YYYY?	PDD		Yes provided	OK	OK
C.2.3 Length of crediting period					
C.2.3.1 Is the length of crediting period stated in years and months?	PDD		Yes provided	OK	OK
D. Environmental impacts					
D.1 Analysis of the environmental impacts					
D.1.1 Is a summary of the analysis of the environmental impacts of the project activity and references to all related documentation provided?	PDD		As per MoEF guidelines the Project Activity does not require any Environmental Impact Assessment.	OK	OK
D.2 Environmental impact assessment					
D.2.1 If an environmental impact assessment is required, are conclusions and references to all related documentation provided?	PDD		As per MoEF guidelines the Project Activity does not require any Environmental Impact Assessment.	OK	OK

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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
D.2.2 Have the project participants undertaken an analysis of environmental impacts activity, including transboundary impacts, and whether those impacts are considered significant by the project participants or the host Party?	VVS	134	As per MoEF guidelines the Project Activity does not require any Environmental Impact Assessment.	OK	OK
D.2.3 If the host Party requires an environmental impact assessment, have the environmental impact assessment approved by local government?	VVS	135	As per MoEF guidelines the Project Activity does not require any Environmental Impact Assessment.	OK	OK
E. Local stakeholder consultation					
E.1 Solicitation of comments from local stakeholders					
E.1.1 Did the project participants complete a local stakeholder consultation process and that due steps were taken to engage stakeholders and solicit comments for the proposed project activity?	VVS	138	Yes completed	OK	OK
E.1.2 Is the process by which comments from local stakeholders have been invited provided?	PDD		Yes provided	OK	OK
E.2 Summary of comments received					
E.2.1 Are stakeholders that have made comments identified?	PDD		Yes identified and provided in the PDD	OK	OK
E.2.2 Have comments by local stakeholders that can reasonably be considered relevant for the proposed CDM project activity been invited?	VVS	139 (a)	Yes invited and provided in the PDD	OK	OK
E.2.3 Is the summary of comments provided complete?	PDD		Yes summary of comments are provided in	OK	OK

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CHECKLIST QUESTION	Ref.	§	COMMENTS		Draft Concl	Final Concl
	VVS	139 (b)	the PDD			
E.3 Report on consideration of comments received						
E.3.1 Is information provided to demonstrate that all comments received have been considered?	PDD VVS	139 (c)	Yes provided		OK	OK
F. Approval and authorization						
F.1 General						
F.1.1 Is it indicated whether the letter(s) of approval from Party(ies) available at the time of submitting the PDD to the validating DOE?	PDD		Host country approval to be made available with DOE for validation.		CL 11	OK
F.2 Approval			COUNTRY A	COUNTRY B		
F.2.1 Has the DNA of each Party indicated as being involved in the proposed CDM project activity in section A.3 of the PDD provided a written letter of approval?	VVS	38	Please refer Section F.1.1 above	Not Applicable	(CL 11)	OK
F.2.2 Does the letter of approval from DNA of each Party confirm that : (a) The Party is a Party of the Kyoto Protocol (b) The participation is voluntary (c) In the case of the host Party, the proposed CDM project activity contributes to the sustainable development of the country (d) Refers to the precise proposed CDM project activity title in the PDD being submitted for registration	VVS	39	Please refer Section F.2.1 above		(CL 11)	OK

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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
F.2.3 Is(are) the letter(s) of approval unconditional with respect to (F.2.2) above?	VVS	40	Please refer Section F.2.2 above	(CL 11)	OK
F.2.4 Has(ve) the letter(s) of approval been issued by the respective Party's DNA? If there is doubt with respect to (F.2.2) above, was it verified with the DNA that the letter of approval is valid for the proposed CDM project activity under validation?	VVS	41,42	Please refer Section F.2.2 above	(CL 11)	OK
F.2.5 Does the letter of approval by the DNA of the host Party confirm the contribution of the proposed CDM project activity to the sustainable development of the host Party?	VVS	51	Please refer Section F.2.2 above	(CL 11)	OK
F.3 Authorization					
F.3.1 Has each project participant been authorized by at least one Party involved in a letter of approval?	VVS	45	Please refer Section F.2.2 above	(CL 11)	OK
F.3.2 Is the information in tabular form in the PDD consistent with the contact information for project participants provided?	VVS	46	Please refer Section F.2.2 above	(CL 11)	OK
F.3.3 Are any entities other than those approved as project participants included in the PDD?	VVS	47	Please refer Section F.2.2 above	(CL 11)	OK
F.3.4 Has the approval of participation issued from the relevant DNA? And if in doubt, was it verified with the DNA that the approval of participation is valid for the proposed CDM project participants?	VVS	48	Please refer Section F.2.2 above	(CL 11)	OK
Part III Others					

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
A. Appendixes of PDD					
A.1 Appendix 1: Contact information of project participants					
A.1.1 For each organization listed in section A.4 of PDD, is the table in PDD completed, with the following mandatory fields: Organization, City, postcode, Country, Telephone and Fax, e-mail and Name of contact person?	PDD		Yes Provided	OK	OK
A.2 Appendix 2: Affirmation regarding public funding					
A.2.1 If applicable, is the affirmation obtained from Parties providing public funding to the project Activity attached?	PDD		Not applicable.	OK	OK
A.3 Appendix 3: Applicability of the selected methodology(ies)					
A.3.1 Is the background information on the applicability of the selected methodology provided?	PDD		Not provided	OK	OK
A.4 Appendix 4: Further background information on ex ante calculation of emission reductions					
A.4.1 Is the background information on the ex ante calculation of emission reductions provided?	PDD		Yes Provided	OK	OK
A.5 Appendix 5: Further background information on monitoring plan					

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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
A.5.1 Is the background information used in the development of the monitoring plan provided?	PDD		Not provided	OK	OK
A.6 Appendix 6: Summary of post registration changes					
A.6.1 Is a summary of the post registration changes provided?	PDD		Not applicable.	OK	OK
B. Global Stakeholder Consultation					
B.1.1 Is there any comment on the PDD of the proposed project activity received during Global Stakeholder Consultation process?	VVS	34	There were no comments received. During the Global Stakeholder Consultation Period.	OK	OK
B.1.2 If yes, have all comments been taken into account during the validation of the proposed project activity?	VVS	35	Not applicable	OK	OK
B.1.3 If comments indicate that the proposed project activity does not comply with the CDM requirements and are not substantiated, is there any further clarification from the entity providing the comment?	VVS	36	Not applicable	OK	OK
B.1.4 If yes, how comments received have been taken due account?	VVS	36	Not applicable	OK	OK
B.1.5 If no, are the comments as originally provided proceeded to assess?	VVS	36	Not applicable	OK	OK
C. Modalities of Communications (MoC)					

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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
C.1.1 Has the corporate identity of all project participants and focal points included in MoC statement, as well as the personal identities, including specimen signatures and employment status, of their authorized signatories been validated by:	VVS	53			
C.1.1.1 Directly checking evidence for corporate, personal identity and other relevant documentation; or	VVS	54(a)	Project Participant to make available evidences towards corporate personal identity including specimen signatures authorized signatories for validation.	CL 12	OK
C.1.1.2 Notarized documentation; or	VVS	54(b)	Please refer section C.1.1.1 above	(CL 12)	OK
C.1.1.3 Written confirmation from the project participant or the coordinating/managing entity that all corporate and personal details, including specimen signatures, are valid and accurate.	VVS	54(c)	Please refer section C.1.1.1 above	(CL 12)	OK
C.1.2 If (C.1.1.3) above was chosen, is it ensured that the MoC statement is received from a project participant with whom the DOE has a contractual relationship?	VVS	55	Please refer section C.1.1.1 above	(CL 12)	OK
C.1.3 If (C.1.1.3) above was chosen, is it ensured that the official who submits the MoC statement to the DOE and the official who signed the written confirmation (if a different person) is/are duly authorized to do so on behalf of the respective project participant?	VVS	56	Please refer section C.1.1.1 above	(CL 12)	OK
C.1.4 If it is unable to validate the requirements by	VVS	57	Please refer section C.1.1.1 above	(CL 12)	OK



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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
applying C.1.1.1 to C.1.1.3 above, are any further validation activities performed?					
C.1.5 Has the latest version of the form “Modalities of Communication statement” (F-CDM-MOC) been used?	VVS	60(a)	Please refer section C.1.1.1 above	(CL 12)	OK
C.1.6 Is the information required as per F-CDM-MOC, including its annex 1, correctly completed?	VVS	60(b)	Please refer section C.1.1.1 above	(CL 12)	OK
C.1.7 Do the project participant's authorized signatories signing the F-CDM-MOC correspond to the project participant's authorized signatories included in F-CDM-MOC, annex 1?	VVS	60(c)	Please refer section C.1.1.1 above	(CL 12)	OK

Table 2: Resolution of Corrective Action and Clarification Requests

Draft report clarifications and corrective action requests by validation team	Ref. To checklist question in Table 1	Summary of project owner response	Validation team conclusion
CAR 1. The baseline scenario has been stated, however the same is not meeting the requirements of "Guidelines for completing the project design document"	A.1.2	PP has revised the PDD section A.1 to state the baseline scenario inline with the requirement of "Guidelines for completing the project design document".	The revised PDD states the baseline scenario as identified in Section B.4. Hence CAR 1 is closed.
CAR 2. The annual average and total GHG emission reductions for the chosen crediting periods are not provided as required by "Guidelines for completing the project design document.	A.1.4	PP has revised the PDD section A.1 to provide the annual average and total GHG emission reductions for the chosen crediting periods as required by "Guidelines for completing the project design document.	The revised PDD states that the estimated annual average emission reduction from the project activity to be 36,966 tCO ₂ e and the total GHG emission reductions for the chosen fixed crediting period to be 3,69,660 tCO ₂ e Hence CAR 2 is closed.
CAR 3. The webhosted PDD is silent on whether there is any transfer of technology.	A.3.7	No transfer of technology is involved in the project activity. PDD section A.3 has been revised to include the same.	Under Section A.3 of the revised PDD, Project Participant has confirmed that there are no transfers of technology involved in the project activity. Hence CAR 3 is closed.

CAR 4. Under section B.4 of the webhosted PDD, Project Participant data considered to explain baseline scenario has not been elaborated in detail and same is not meeting the requirements of Guidelines for Completing the PDD.	B.4.10	PP has revised PDD section B.4 appropriately in accordance with the "F-CDM-PDD completion guidelines" requirement.	All parameters relevant to baseline scenario are now elaborated in detail under Section B.4 of the revised PDD. The quantity of net electricity supplied to grid to be 41211.2 MWh and this data is calculated and is Ex-ante and available at the time of decision making. Hence CAR 4 is closed.
CAR 5. Relevant National policies, regulations and circumstances relevant to the baseline scenario have not been detailed in the webhosted PDD.	B.4.13	PP has already explained the same in section B.5 of the PDD under Sub Step 1b : <i>Consistency with mandatory laws and regulations</i> as per the requirements of the "F-CDM-PDD completion guidelines".	Relevant National policies, regulations and circumstances relevant to the baseline scenario are detailed in the revised PDD, All national and sectoral policies relevant to the project activity are now discussed under section B.5 of the final PDD. Hence CAR 5 is closed.
CAR 6. The common practice demonstrated in the webhosted PDD is not in line with the paragraph 6 and 47 of "Tool for the demonstration and assessment of additionality".	B.5.6.2	PP has also revised PDD to incorporate the sources and reference considered towards demonstration of Common Practice Analysis as annexure 2.	The sources and reference towards evaluating common practice analysis are now provided as Annexure 2 of the revised PDD. Hence CAR 6 is closed

CAR 7. The “purpose of data” detailed across tables under section B.6.2 of the webhosted PDD is not in line with the Guidelines for Completing the PDD.F-CDM-PDD completion guidelines.	B.6.2.2	PP has revised PDD section B.6.2 to state the “purpose of data” in line with the Guidelines for Completing the PDD.F-CDM-PDD completion guidelines.	The purpose of data is now provided in concurrence with F-CDM-PDD completion guidelines. Hence CAR 7 is closed
CAR 8. The “purpose of data” detailed across tables under section B.7.1 of the webhosted PDD to be in line with F-CDM-PDD completion guidelines.	B.7.1.2.5	PP has revised PDD section B.7.1 to state the “purpose of data” in line with the Guidelines for Completing the PDD.F-CDM-PDD completion guidelines.	The purpose of data is now provided in concurrence with F-CDM-PDD completion guidelines. Hence CAR 8 is closed
CL 1 The location stated in the webhosted PDD is not matching with PPA. PP to clarify the same.	A.2.4	The location mentioned in the webhosted PDD is “Periyapatti” name of the wind farm location. PP has revised PDD Section A.2.4 as per F-CDM-PDD completion guidelines and provided the specific WTGs location details in Annexure 1 of the PDD and the same is referred in section A.2.4.	Locations of each WTG are provided under annexure 1 of the final PDD and are in concurrence with power purchase agreement. Hence CL 1 is closed
CL 2 1. Project Participant to make available the following supporting documents for validation: i. Signed copy of proposal from Vestas for supply of WTG	B.5.4.4.1	i. Supporting document has been provided with the response. ii. Commissioning certificate for WTG, bearing HTSC number 1566 has been provided by PP	Commissioning certificate for WTG bearing HTSC number 1566 are made available with the validation team and the document is found to appropriate and applicable for the validated project activity.

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<p>ii. Commissioning certificate for WTG, bearing HTSC number 1566</p> <p>iii. Date of DNA meeting for host country approval</p> <p>iv. Towards validation site visit carried on 15/05/2010</p> <p>v. Communication between CDM consultant and MCL to proceed with the revised project</p>		<p>with this response.</p> <p>iii. Supporting document has been provided now. PP has submitted the email communication (Dated: 16/04/2010) provided by the NCDMA for the HCA meeting date to the Madras Cements Limited with the response.</p> <p>iv) PP has already submitted the supporting document "TUV DVR Invoice" for the Draft Validation Report received by PP which was provided after the site visit. However, there is no other supporting available for the same action. Therefore, same has been removed from the chronology of action in the PDD. Moreover, the contract has been terminated now with the DOE appointed for 46.2 MW. Please refer to the file 'TUV termination</p>	<p>i. Relevant Commissioning certificate for WTG, bearing HTSC number 1566 has been provided.</p> <p>ii. Letter to NCDMA dated 29/04/2010 from MCL has been provided to DOE, but Project Participant to make available the letter of communication from NCDMA to MCL on DNA meeting for host country approval.</p> <p>iii. The Email communication between NCDMA and Project Participant was made available with the validation team and the mail details the Project Participant meeting with the DNA of India for host country approval.</p> <p>iv. Invoices for draft validation and termination letter of DOE has been validated and are found to be appropriate with the response provided. The removals of activity from chronology of events under section B.5 of the revised PDD are accepted by the validation team.</p>
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capacity.		letter'.	
vi. MCL has sold the WTGs to the RML and Group concern		v) The communication was a teleconference between PP and the CDM consultant. So there is no physical supporting available for the action. Hence, same action has been deleted from the chronology of action in the PDD.	v. As there are no credible documents to substantiate the occurrence of event, it has been removed from chronology of events under section B.5 of the revised PDD are accepted by the validation team.
vii. MCL signed the CDM Consultancy agreement for revised capacity-19.80MW with Ecoinvest Carbon SA		vi) PP has already submitted the supporting document "Invoice" for the selling of WTGs to the RML and Group concern. However, resubmitting the supporting document. Please refer to the file "Invoice copy" provided as an attachment with the response.	vi. Documents provided are in relevance to the chronology of events detailed under section B.5 of the revised PDD.
viii. MCL submitted the withdrawal request for 46.20 MW project to the DOE appointed for the 46.20 MW project and communicated with the DOE for validation quotation for the revised capacity i.e. -19.80MW.		vii) Supporting document, First and the last page of the agreement has been provided to the DOE.	vii. Documents provided are in relevance to the chronology of events detailed under section B.5 of the revised PDD.
			viii. Documents provided are in relevance to the chronology of events detailed under section

<p>ix. Project Participant to make available supporting documents for "employee & administrative expenses" considered in the webhosted PDD for validation.</p> <p>2. It is observed that the depreciation has been calculated including land cost which is not depreciable asset; clarify?</p> <p>3. MAT tax credit u/s. 115 JAA of IT Act has not been considered for calculating the taxation; clarify?</p> <p>4. Project Participant to justify why fair value of land cost has not been considered as part of the salvage value?</p> <p>5. From the IRR spread sheet Project Participant has considered generation for 6 months for the first year of operation of WTG's whereas insurance cost are considered for 1 year, clarify</p> <p>6. The WTG's are expected to be commissioned prior to September 2008, hence clarify the</p>		<p>viii) PP has submitted the email communications for the withdrawal of the appointed DOE for 46.2MW and after the telephonic discussion with the DOE, PP has sent the contract termination letter. Please refer to the email communication and the contract termination letter provided as an attachment with the response. Also, providing the email communication for the validation quotation for the revised capacity i.e. -19.8MW.</p> <p>ix) PP has already submitted the supporting document for the "employee & administrative expenses". However, resubmitting the same. Please refer to the file "Emp and Admn cost" provided as an attachment with the response.</p> <p>2. PP has revised the IRR</p>	<p>B.5 of the revised PDD.</p> <p>ix. Documents provided are in relevance to the chronology of events detailed under section B.5 of the revised PDD.</p> <p>2 The final IRR spread sheet has been revised and land cost are not considered as part of the depreciation calculation.</p> <p>3 MAT credit under section 115 JAA of the IT act has been now considered in the final</p>
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<p>computation considered for Income tax depreciation i.e., why depreciation benefits are not considered for one full year during the first year of operation?</p>		<p>calculation and segregated the land cost from the project cost. Now, the depreciation calculation does not consider the land cost.</p> <p>3. PP has revised the IRR calculation sheet and incorporated the MAT Tax credit calculation</p> <p>4. PP has revised the salvage value calculation and accounted the land cost.</p> <p>5. PP has revised insurance cost calculation for the first year and calculated for 6 months, since the generation has been taken only for six months.</p> <p>6. The revised Income Tax calculation sheet has considered the same from 1st year.</p>	<p>spread sheet.</p> <p>4 Fair value of the land has been accounted as part of the salvage value.</p> <p>5 The Insurance cost considered in the IRR spread sheet has been now revised as per the generation duration considered i.e., insurance cost has been apportioned for first six months since generation from the WTG's has been considered for 6 months for the first year.</p> <p>6 80% accelerated depreciation benefits is now considered in the first year since the project is expected to be operational before 30 September of a F.Y and this can be confirmed based on the following link http://articles.economictimes.in/diatimes.com/2012-04-</p>
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			03/news/31281284_1_wind-energy-wind-farms-wind-turbine. Hence CL2 is closed
CL 3 1. Project Participant to clarify the availability of weighted average data to deduce benchmark (Reserve Bank of India Annual Report 2007 -2008 dated 29/08/2008) Viz., the board investment decision date (04/07/2008). 2. Project Participant to justify the availability of PLF value of 26.7% considered in the webhosted PDD & IRR spread sheet Viz., a) The referred source. b) Board investment decision date. 3. Project Participant to justify the availability of following parameters; considered in the webhosted PDD & IRR spread sheet Viz., the referred source & board investment decision date. a) Tariff rate considered towards sale of power.	B.5.4.4.2	1. PP has revised benchmark sheet to exclude the value of weighted average data for the year 2007-08 which is taken from the RBI annual report as the Reserve Bank of India Annual Report 2007 -2008 dated 29/08/2008 post the decision making date. Hence, considered the values only available at the time of decision making. PP has provided the date of publication of the document for the data considered for the period 1991-97 and also provided the reference link below to check the date of publication. http://www.rbi.org.in/scripts/PublicationsView.aspx?id=9629 2. PP has considered the PLF from the third party PLF study report in accordance with the EB 48 Annex 11 para 3b and revised PDD and	1. The data has been revised and has been considered based on the data availability at the time of investment decision. 2. The PLF value has been considered based on third party report and is in accordance with EB 48 Annex 11 and hence accepted by the validation team. 3. The following parameters are based on TNERC order dated 15/05/2006, which was available at the time of investment decision (04/07/2008). a) Tariff rate considered towards sale of power. b) Insurance Cost (% of the project Cost) c) Percentage reduction in Insurance Cost per year after

<p>b) Insurance Cost (% of the project Cost)</p> <p>c) Percentage reduction in Insurance Cost per year after 5th year</p> <p>4. Project Participant to clarify whether there are any subsidies or incentive on tariff availed by the Project Activity from any of the Government bodies.</p>		<p>IRR sheet accordingly.</p> <p>3. PP has considered the following parameters in the webhosted PDD & IRR spread sheet</p> <p>a) Tariff rate considered towards sale of power.</p> <p>b) Insurance Cost (% of the project Cost)</p> <p>c) Percentage reduction in Insurance Cost per year after 5th year as per the TNERC tariff order 2006 and revised the financial sheet as well as PDD to incorporate the exact page number to refer the same. Please refer to the page no. 90 & 91 of the TNERC order 2006 provided as an attachment with the response.</p> <p>4. PP has clarified that there are no subsidies or incentive on tariff availed by the Project Activity from</p>	<p>5th year</p> <p>4. Project Participant has confirmed that there are no subsidies or incentive availed for the tariff rate.</p> <p>Hence CL 3 is closed.</p>
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		any of the Government bodies.	
CL 4 Project Participant to submit annual reports for the last three years.	B.5.4.4.3	Annual Report for the last three years has been submitted to DOE.	Project Participant has made available annual reports for last three years. Based on which the validation team is able to conclude that the Project Participant has made 100% equity investment for the proposed CDM project activity. Hence CL 4 is closed.
CL 5 PP to provide workings of scenarios in the sensitivity analysis where the IRR would cross the benchmark and probabilities of occurrence the scenarios.	B.5.4.4.5	PP has already provided the working of scenarios in the sensitivity analysis where the IRR would cross the benchmark. Please refer to the 'Assumption worksheet' section 5 Row 69. However, revised the financial sheet and the PDD to incorporate the explanation of the probabilities of occurrence of the scenarios. Project Participant has revised the description in the section B.5 in order to enhance the clarity on the probability of IRR crossing the benchmark.	The probabilities of occurrence of IRR crossing the benchmark for the parameters considered in the sensitivity analysis are explicitly discussed in the revised PDD and the same is accepted by the validation team. Hence CL5 is closed.
CL 6 1. Project Participant to justify the appropriateness of the benchmark applied with respect to the	B.5.4.5.2	1. PP has clarified that there is another existing wind power project	1. Project Participant has considered the same approach for

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<p>Financial Indicator – Post Tax Equity IRR for demonstrating additionality.</p> <p>PP has applied return on equity as the bench mark for this project activity and PP to confirm and demonstrate; PP to clarify whether there are other existing wind power projects and also the consistency in applying this benchmark for the investment decision in the past.</p> <p>2. Project Participant has considered levered beta for calculating the COE, hence Project Participant to justify why a more appropriate approach like unlevered beta has not been adopted?</p> <p>3. Why a vintage data from 1978-79 has not been considered for computation of market return?</p> <p>4. Based on the supporting document provided the validation team is not able to ascertain the term of maturity considered to estimate applicable risk free rate; Project Participant to explain.</p>	<p>which has 100% equity involved and considered benchmark based on the CAPM method based on the data available at the time of decision making (5th April 2007) of that project. This project is also under CDM validation and scheduled under UNFCCC scheduling section for RFR. Below is the reference link provided for the same.</p> <p>http://cdm.unfccc.int/Projects/Validation/DB/BHX0TQO6T2FMQNF1A59AGMX7X5E4DD/view.html</p> <p>PP has provided the weblink to crosscheck the requisite project details directly from the UNFCCC website and also providing the UNFCCC reference number – 7647 herewith for the reference.</p> <p>2. The market return is revised to 19.03%.</p> <p>3. The PP has now considered 30 Year period for the benchmark</p>	<p>their earlier registered project activity with Ref# 7647 i.e., Post tax equity IRR and Benchmark based on CAPM model.</p> <p>2. Unlevered beta approach is now adopted by Project Participant to compute beta. The average beta value has now been revised to 1.11 from 1.48.</p> <p>3. The market return has now been computed based on BSE Sensex – 30 from the year 1978 – 79. The market return has now been revised to 19.03% from 17.50%.</p> <p>4. The applicable risk free rate has been revised by Project Participant to 7.80% in the final benchmark sheet from 8.12% and the maturity term considered is 20 years. Hence this is accepted by the validation team.</p> <p>Hence CL 6 is closed.</p>
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		computation.	
		4. The maturity period considered is 20 years.	
CL 7 Based on site visit the validation team understands that for: i. WTG bearing HTSC # U1554 meter has been changed from ELSTER (tri-vector) 0.5 to L&T (ABT) 0.2s, hence Project Participant to explain the reason for change of meter. ii. WTG bearing HTSC # U1567, Project Participant to clarify the meter employed Viz., the supporting document provided by Madras Cements Limited on E.B meter details for Vestas 1650kW	B.7.1.2.3	i. All the energy meters are currently of 0.5 accuracy class except HTSC no 1554 which has 0.2 accuracy class as per TANGEDCO notification all the new energy meter installation should be of 0.2 accuracy class. So whenever there is replacement of faulty energy meter, it should be replaced by the ABT meter of 0.2 accuracy class. PP has provided the foot note in section B.7.1 to transparently explain the same. Also, providing the supporting document 'TANGEDCO Notification' to the DOE.	i. All the energy meters which were installed at the time of commissioning of WTGs were of 0.5 Accuracy class. The Tamil Nadu Generation and Distribution Corporation Limited (TANGEDCO) notification dated 31.11.2012 states the energy meters which are found faulty or meters which need to be changed have to be complying with 0.2 Accuracy Class. The energy meter of WTG with HTSC No. U1554 was changed to a higher accuracy class (0.2) as per the notification. The same was noted and accepted by the validation team. ii. The supporting document for

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<p>iii. The accuracy class of meter mentioned in section B.7.1 of the webhosted PDD is not consistent with the actual site conditions.</p> <p>iv. The webhosted PDD states that Net Electricity Generated would be measured by the energy meter. Project Participant to clarify the same.</p> <p>v. The Project Participant in section B.7.1 of the webhosted PDD states that “one check meter on local control system of WTG”. Project Participant to clarify the above statement.</p>	<p>ii. Supporting document has been provided for the E.B meter details of HTSC # U1567 and U1554 as an attachment with the response.</p> <p>iii. As explained in the above response (i) PP has revised PDD Section B.7.1 to transparently explain the accuracy class of the existing energy meter and provided the footnote to elaborate the details for the understanding. Also, submitted the TANGEDCO notification to the as an attachment with the response.</p> <p>iv. PP has revised PDD section B.7.1 to correct the description provided as the gross electricity generated would be measured and the net electricity would be calculated.</p>	<p>meter change for WTG with HTSC No. 1567 dated 23/09/2009 was made available to the verification team, it was noted that the old meter of Elster make and new meter was of Secure make. The meter as per 23/09/2009 letter was changed on 14/09/2009.</p>
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		<p>v. PP has revised section B.7.1 to correct the statement as per the actual site condition as there is no check meter on local control system. All the WTGs has been connected to the central monitoring system through integrated electronic meter.</p>	<p>iii. The PDD has been revised to state the accuracy class of energy meters which are now in line with the actual meters at the site. The same was checked and found to be OK.</p> <p>iv. The PP has revised the term and now clearly states that Gross Electricity would be generated. The same is acceptable to the validation team since the Net Electricity as stated in the webhosted PDD is calculated value not measured. Hence the correction made in the revised PDD is accepted.</p> <p>v. The PP has corrected in PDD that there is no check meter for WTGs. The same was checked and accepted , since the same was matching with the site conditions.</p> <p>Hence CL 7 is closed.</p>
CL 8	B.7.1.2.4	PP has revised the PDD to incorporate the steps considered in	The procedures in the event of faulty meters are now discussed in

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Project Participant to clarify the steps considered as QA/QC procedures in the event of faulty meter(s) in line with prevailing Tamil Nadu State Electricity Board operational procedures.		the event of faulty meter(s) in line with prevailing Tamil Nadu State Electricity Board operational procedures.	detail under section B.7.2 of the final PDD and the same reflects as per site conditions. Hence CL 8 is closed
CL 9 It is understood from webhosted PDD, archiving of data will be carried out, however it is not clear who will be responsible towards archiving of data	B.7.1.4	PP has revised section B.7.3 to provide the details on the responsible person towards the archiving of data.	The data will be archived in paper/electronic for two years beyond the crediting period by DGM. Hence CL 9 is closed
CL 10 Project Participant to clarify the procedure considered in the event of failure of meter(s) in line with prevailing Tamil Nadu State Electricity Board operational procedures.	B.7.3.1	PP has revised the PDD to provide the clarity for faulty meter and failure of meter. Following revisions is incorporated in the PDD In the event of Faulty Meter which leads to replacement / change the meter following are the steps involved: 1. LCS Readings and EB meter readings are noted by site operators on daily basis. 2. If the EB energy meter found faulty then site operator will inform the concerned Electricity Board officials.	The procedures in the event of failure of meters are now discussed step wise under section B.7.2 of the final PDD and the procedure defined are achievable. Based on satisfactory response and necessary corrections incorporated in the PDD CL 10 is closed.

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		<p>3. The Electricity Board officials will check the meter at site and if the meter is found faulty the meter would be replaced with the new energy meter.</p> <p>4 The officials provide a billing recommendation to the electricity board to prepare the JMR. Incase of minor fault EB officials found that there is no need to replace the meter then they will check and if needed calibration of the meter would be performed.</p>	
CL 11 Letter of Approval to be made available with DOE for validation.	F.1.1	Letter of Approval from the Host Party DNA with reference no:4/1/2013, dated 23/04/2013	Letter of Approval from Host Party DNA (Ministry of Environment and Forests) was submitted to the Validation Team. The validation team has also cross verified the approval from the website http://cdmindia.gov.in/project_details_view.php?id=1894&oid=1&page=1&reporttype=1 Hence CL 11 is closed.
CL 12 Project Participant to make available evidences towards corporate personal identity including specimen signatures authorized signatories for	C.1.1.1	PP is submitting the Modalities of Communication Statement i.e F-CDM-MOC form to make available evidences towards corporate personal identity including specimen signatures authorized	The signatory & identity proof of Mr. Selvanayagam were confirmed from the Permanent Account Number (PAN) card issued by



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validation.		signatories for validation.	Income Tax Department which is under Government of India (Gol). Based on the documentary evidence CL 12 is closed.
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APPENDIX B: COMMENTS BY PARTIES, STAKEHOLDERS AND NGOS

There were NO COMMENTS received during the global stakeholder consultation from 06/06/2012 to 05/07/2012.