

Validation Report

Report for:
Panama Wind Energy Private Limited

Validation of CDM project for
Wind based power generation by Panama
Wind Energy Private Limited in Maharashtra,
India

LRQA Reference : CDM-MUM-0061781
Version 02.5

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1 Executive Summary

Lloyd's Register Quality Assurance Limited has been contracted by Panama Wind Energy Private Limited, the project participant (PP), to undertake validation of the proposed project activity "Wind based power generation by Panama Wind Energy Private Limited in Maharashtra, India". The validation has been performed through a process of document review based on the project design document, Version 1.1 dated 28/07/2011 initially submitted for validation and the subsequent revisions, follow-up interviews with the stakeholders, resolution of outstanding issues and issuance of the validation report.

The project intends to reduce greenhouse gas (GHG) emission by utilising wind resource to generate electricity. The project activity envisages the installation of 63 Wind Turbine Generator (WTGs) with capacity of 1.6MW each in the state of Maharashtra. The electricity generated by the project activity will be supplied to the regional grid, i.e. the North East West North East grid (NEWNE) of India. It will reduce the impact of power generation from the conventional fossil fuel based power plants, thereby leading to reduction of GHG emissions.

The fulfilment of the requirements as set forth in Article 12 of the Kyoto Protocol of the United Nations Framework Convention on Climate Change (UNFCCC), the modalities and procedures for a CDM (CDM M&P) and relevant decisions of the Conference of the Parties, serving as meeting of the Parties to the Kyoto Protocol (COP/MOP) and the Executive Board of the CDM (CDM-EB) have been evaluated and conformance to the validation requirements were confirmed based on the given information. A risk based approach was taken to conduct the validation and corrective action requests (CARs) and clarifications (CLs) were raised for relevant actions by the PP.

The validation team has found through the validation process 10 CARs. The PP has taken actions and submitted to LRQA revised PDD, revised investment analysis spreadsheet, revised common practice analysis spreadsheet. The validation team is of the opinion that the proposed project activity as described in the project design document Version 1.10 dated 28/11/2012 meets all the relevant UNFCCC requirements for the CDM, as well as the host country's national requirements and if implemented as designed, is likely to achieve the emission reductions and contribute to the sustainable development of the host country. LRQA therefore requests the registration of "Wind based power generation by Panama Wind Energy Private Limited in Maharashtra, India" to the CDM Executive Board as a CDM project activity.

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Abbreviations

AD	Accelerated Depreciation
AE	Applicant Entity
BE	Baseline emissions
BM	Build Margin
CAPM	Capital Asset Pricing Model
CARs	Corrective action requests
CDM	Clean development mechanism
CDM-EB	Executive board of clean development mechanism
CDM M&P	Modalities and procedures for a clean development mechanism
CDM PS	CDM Project Standard
CDM VVM	CDM Validation and Verification Manual
CDM VVS	CDM Validation and Verification Standard
CEA	Central Electricity Agency
CERs	Certified emission reductions
CLs	Clarification requests
CM	Combined Margin
COP/MOP	Conference of the Parties serving as meeting of the Parties to the Kyoto Protocol
CUF	Capacity utilisation Factor
DNA	Designated national authority
DOE	Designated operational entity
EF	Emission factor
EHV	Extra high voltage
EIA	Environmental impacts assessment
ERPA	Emissions reduction purchase agreement
FAR	Forward action requests
GBI	Generation Based Incentive
GE	General Electric
GHG	Greenhouse gas
GSP	Global stakeholders' consultation process
IPCC	Intergovernmental panel on climate change
IREDA	Indian Renewable Energy Development Agency
IRR	Internal rate of return
KP	Kyoto Protocol of the United Nations Framework Convention on Climate Change
kV/kVA	Kilovolt / Kilovolt ampere
kW / kWh	Kilowatt / Kilowatt hour
LE	Leakage emissions
LoA	Letter of approval
LR	Lloyd's Register
LRQA	Lloyd's Register Quality Assurance Limited
LT	Low Tension
MEDA	Maharashtra Energy Development Agency
MERC	Maharashtra Electricity Regulatory Commission
MNRE	Ministry of New and Renewable Energy
MoC	Modalities of Communication
MoEF	Ministry of Environment and Forests
MSEDCL	Maharashtra State Electricity Distribution Company Limited
MW / MWh	Mega watt / Mega watt hour
NCDMA	National Clean Development Mechanism Authority
NCV	Net calorific value
NEWNE	North East West North-East

NGO	Non governmental organisation
ODA	Official development aid
OM	Operating Margin
O&M	Operation & Maintenance
PDD	Project design document
PE	Project emissions
PLF	Plant Load Factor
PP	Project participant
PPA	Power Purchase Agreement
QA/QC	Quality Assurance/Quality Control
RBI	Reserve Bank of India
RfR	Request for Registration
tCO ₂ e	Tonnes of carbon dioxide equivalent
UNFCCC	United Nations Framework Convention on Climate Change
WACC	Weighted Average Cost of Capital
WTG	Wind Turbine Generator

2 Introduction

The project participant (PP), Panama Wind Energy Private Limited has contracted with Lloyd's Register Quality Assurance Limited (LRQA) to undertake validation of the proposed project activity "Wind based power generation by Panama Wind Energy Private Limited in Maharashtra, India". This report summarises the findings of the validation process that has been conducted on the validation requirements of the CDM.

The validation has been undertaken by the team formed of the qualified personnel of LRQA as follows:

Ankush Jain	LRQA India	Team leader CDM lead validator Sector expert
Shubha Shanbhag	LRQA India	Team leader ¹ CDM lead validator Sector expert
Imran Ustad	LRQA India	Technical reviewer and Sector expert
Prabodha C Acharya	LRQA Ltd.	Decision maker (trainee)
Javier Vallejo Drehs	LRQA Ltd.	Decision maker

Personnel being engaged in a CDM project validation are qualified based on the established procedures of LRQA to assure the resource requirements satisfy all the requirements of competence criteria for an AE/DOE under CDM (CDM-Accreditation Standard version 04.0). LRQA is designated as an operational entity and holds the full responsibility of decision-making regarding the validation, in line with the accreditation requirements of the CDM-EB. The certificate of appointment of the team personnel is attached to this report.

2.1 Objective

Validation is the process of an independent third party evaluation of a project activity on the basis of the PDD, against the requirements of the CDM as set out in Article 12 of the Kyoto Protocol, the CDM M&P, subsequent decisions made by the COP/MOP and CDM-EB, and other rules applicable to the proposed project activity including the host country's legislation and its specific requirements for sustainable development. The validation follows the requirements of the current version of the CDM validation and verification standard (CDM VVS) and the CDM Project Standard (PS) to ensure the quality and consistency of the validation work and the report.

2.2 Scope

The scope of validation is an independent and objective review of the project design. Review of the PDD is conducted against the requirements of the Kyoto Protocol, the CDM M&P and relevant decisions of the COP/MOP and the CDM-EB. LRQA follows a risk-based approach in the validation focusing on the identification of significant risks for project implementation and generation of CERs. Validation is not meant to provide any consulting towards the PP, however, the corrective actions requests (CARs) and clarifications (CLs) might provide input for improvement of the project design. A

¹ Shubha Shanbhag was involved in this project till 11/04/2012. Thereafter the project was lead by Ankush Jain since Shubha left the organisation.

validation conclusion shall become final subject to the decision maker's review by LRQA Ltd.

2.3 GHG Project Description

Panama Wind Energy Private Limited is involved in the installation of 100.8 MW wind power project (63 × 1.6MW) located at Satara, Maharashtra in India. The generated power will be exported to the Integrated Northern, Eastern, Western and North Eastern Grid (NEWNE) of India.

The exported electricity from the project activity will displace equivalent electricity from the connected grid which is primarily fossil fuel based and hence will result in reduced greenhouse emissions. The validation team confirms that the Wind Turbine Generator (WTGs) of GE India Industrial Private Limited of capacity 1.6 MW are based on a proven technology used elsewhere in the host country for electricity generation using wind energy.

The project activity is categorized in the sectoral scope 1 – Energy industries (renewable/non-renewable sources).

The estimated GHG emission reduction is 186,270 tCO₂e per annum during the fixed crediting period of 10 years. The emission reduction has been estimated based on the ex-ante Plant Load Factor (PLF) estimated by GL Garrad Hassan, third party.

3 Methodology

3.1 Review of documents

The validation is performed primarily based on the review of the project design document (PDD) and the other supporting documentation.

The PDD Version 1.1 dated 28/07/2011 was initially reviewed. LRQA requested the PP to present supporting information and documents relating to the project design and such additional information and documents were also reviewed by LRQA.

Through the process of the validation, the PDD and the supporting documents of the same were evaluated to confirm the actions taken by the PP to the CARs and CLs issued by LRQA. The documents reviewed by LRQA are listed in Appendix B. LRQA reviewed the final version of the PDD version 1.10 dated 28/11/2012 to confirm that all changes agreed had been incorporated.

3.2 Site Visit and Follow-up interviews

A site visit and follow-up interviews with the stakeholders were conducted as detailed in the schedule as below:

Date	Location/ Address	Party Interviewed	Subjects Covered	Team Members on Site
13/09/2011	Panama office, Pune	Panama Wind Energy Private Limited	1. Project Idea – Selection of technology, selection of site, Project boundary 2. Performance of WTGs – Power generation, grid	Shubha Shanbhag

Date	Location/ Address	Party Interviewed	Subjects Covered	Team Members on Site
			availability, PLF, Machine availability, losses etc. 3. Legal requirements including consents and approvals necessary for the project. (clearance for forest land etc) 4. Power evacuation arrangements (proposal from PRDC), refunding of grid connection assets (3.5 MM INR/MW) 5. Current status of project 6. Status of PPA 7. Expected power generation levels for the project 8. Environmental due diligence by ERM 9. Balance of plant contracts (Spark and Godavari)	
14/09/2011	Project site	Panama Wind Energy Private Limited	1. Unique Identification 2. PLF 3. Monitoring systems 4. Projects contribution to sustainable development 5. Local stakeholder consultation process 6. Land transaction 7. Environmental impact assessment	
		Local stakeholders	1. Intimation process for the meeting to local stakeholders' 2. Representation by stakeholders in the meeting 3. Minutes of meeting – Comments, action taken 4. Employment of local skilled and unskilled people 5. Views on the project activity	

A full list of persons interviewed is shown in Appendix C.

For details of all the findings of the desk review and site visit, please refer to the Validation Protocol and Findings in Appendix F.

3.3 Resolution of clarification and corrective action requests

LRQA applies the risk based approach aimed at focusing on high risk issues to the validation results while not omitting any part of the mandatory processes.

Findings identified in the process are indicated under the titles corrective action requests (CARs) and clarification requests (CLs) and forward action requests (FARs). CARs and CLs require the PP to take relevant actions. Criteria for judging items as CAR or CL are as follows:

Corrective action request (CAR):

- the project participants have made mistakes that will influence the ability of the project activity to achieve real, measurable additional emission reductions
- the CDM requirements have not been met, or
- there is a risk that emission reductions cannot be monitored or calculated.

Clarification request (CL):

- information is insufficient or not sufficiently clear to determine whether the applicable CDM requirements have been met.

FARs are to be raised to highlight issues related to project implementation that require review during the first verification of the project activity. FARs do not relate to CDM requirements for registration.

CARs and CLs are to be resolved or closed out if the PP modifies the project design, rectifies the PDD or provides adequate additional explanations or evidence that satisfies the concerns. If this is not completed, the project activity cannot be recommended for registration to the CDM Executive Board.

For details of the nature of the issues raised, the nature of the responses provided, the means of validation of such responses and the resulting changes in the PDD or supporting annexes please refer to the Validation Protocol and Findings in appendix F.

3.4 Internal quality control

A technical review by a qualified person independent from the validation team and a review by an authorised decision maker were conducted before the submission of the validation report to the PP and before requesting the registration of the project activity.

4 Validation protocol and conclusions

This section provides an overview of the validation activities undertaken by LRQA in order to arrive at the final validation conclusions and opinion. It includes general conclusions based on the Clean Development Mechanism Validation and Verification Standard (VVS) version 03.0. Further details in relation to each element of the protocol and each finding are shown in the Validation Protocol and Findings – Appendix F.

The protocol is structured based on the main validation requirements as follows:

- Approval by the Parties involved
- Participation requirements
- Project design document
- Project description

- Baseline and monitoring methodology
 - Applicability of the selected methodology
 - Project boundary
 - Baseline identification
 - Algorithms and/or formula used to determine emission reductions
- Additionality of a project activity
 - Prior consideration of the CDM
 - Identification of alternatives
 - Investment analysis
 - Barrier analysis
 - Common practice analysis
- Monitoring plan
- Local stakeholder consultation
- Environmental impacts.

4.1 Approval

A CDM project shall be approved by the Parties involved.

The host Party of the proposed project is India. India ratified the Kyoto Protocol on 26/08/2002. The Designated National Authority (DNA) is National Clean Development Mechanism Authority (NCDMA) established in the Ministry of Environment and Forests (MoEF), Government of India. The information of the DNA has been confirmed by the validation team against the relevant information on the UNFCCC CDM website (<http://cdm.unfccc.int/DNA/index.html>). A letter from approval from the host country, reference number 4/6/2012-CCC dated 06/11/2012, has been received from the PP. This letter of approval confirms the contribution of the project activity “Wind based power generation by Panama Wind Energy Private Limited in Maharashtra, India” to the sustainable development of India.

The project has currently been proposed as a unilateral CDM project and the Annex I Party has not yet been identified. In line with the provision of paragraph 57 of the 18th meeting of the CDM-EB, registration of a project activity can take place without an Annex I party being involved at the stage of registration.

For details relating to this section, please refer to the Validation Protocol in Appendix F

4.2 Participation requirements

Panama Wind Energy Private Limited is private entity having its registered office in India.

The contact details of the PP are correctly provided in Appendix 1 of the PDD.

Participation in the project activity of the PPs has been authorised, as confirmed in the LoAs issued by the DNAs of the Parties concerned. The team confirmed that no entities other than the authorised entities are indicated as project participants in the PDD.

For details relating to this section, please refer to the Validation Protocol in Appendix F

4.3 Project design document

The PDD was checked and confirmed as complete against the Guideline for completing the project design document form, Version 01.0 referring to the latest version under CDM VVS track applicable to the validation

A valid form of the F-CDM-PDD is used that is the current form under CDM VVS track as available on the CDM website;

For details relating to this section, please refer to the Validation Protocol in Appendix F.

4.4 Project description

Panama is involved in the installation of 100.8 MW wind power project (63 × 1.6MW) located at Satara, Maharashtra in India. Unique coordinates of the project activity are as follows:

WTG No	Latitude (N)	Longitude (E)
1	17° 17' 42"	73° 46' 33"
2	17° 17' 51"	73° 46' 32"
3	17° 18' 07"	73° 46' 35"
4	17° 18' 15"	73° 46' 37"
5	17° 18' 15"	73° 46' 38"
6	17° 18' 23"	73° 46' 21"
7	17° 18' 31"	73° 46' 46"
8	17° 18' 41"	73° 46' 35"
9	17° 18' 50"	73° 46' 37"
10	17° 18' 56"	73° 46' 43"
11	17° 19' 03"	73° 46' 48"
12	17° 19' 10"	73° 46' 53"
13	17° 19' 17"	73° 47' 00"
14	17° 19' 23"	73° 47' 06"
15	17° 19' 29"	73° 47' 13"
16	17° 19' 36"	73° 47' 19"
17	17° 19' 41"	73° 47' 28"
18	17° 19' 24"	73° 47' 34"
19	17° 19' 30"	73° 47' 40"
20	17° 19' 41"	73° 47' 45"
21	17° 18' 19"	73° 47' 02"
22	17° 18' 25"	73° 47' 10"
23	17° 18' 29"	73° 47' 23"
24	17° 18' 37"	73° 46' 59"
25	17° 18' 23"	73° 46' 21"
26	17° 18' 53"	73° 47' 05"
27	17° 19' 00"	73° 47' 11"
28	17° 19' 05"	73° 47' 19"
29	17° 19' 09"	73° 47' 31"
30	17° 19' 11"	73° 47' 45"
31	17° 19' 18"	73° 47' 57"
32	17° 19' 26"	73° 48' 02"
33	17° 19' 33"	73° 48' 06"
34	17° 18' 14"	73° 47' 24"
35	17° 19' 01"	73° 47' 54"
36	17° 19' 07"	73° 48' 09"
37	17° 19' 11"	73° 48' 21"
38	17° 19' 19"	73° 48' 23"
39	17° 19' 27"	73° 48' 27"
40	17° 19' 24"	73° 48' 39"
41	17° 19' 38"	73° 48' 52"
42	17° 19' 47"	73° 48' 58"

WTG No	Latitude (N)	Longitude (E)
43	17° 18' 53"	73° 48' 34"
44	17° 19' 00"	73° 48' 37"
45	17° 19' 09"	73° 48' 40"
46	17° 19' 17"	73° 48' 43"
47	17° 19' 24"	73° 48' 48"
48	17° 19' 30"	73° 48' 49"
49	17° 19' 36"	73° 49' 12"
50	17° 18' 18"	73° 48' 44"
51	17° 18' 26"	73° 48' 46"
52	17° 18' 33"	73° 48' 51"
53	17° 18' 41"	73° 48' 53"
54	17° 18' 48"	73° 48' 57"
55	17° 18' 56"	73° 49' 02"
56	17° 19' 02"	73° 49' 06"
57	17° 19' 11"	73° 49' 09"
58	17° 19' 17"	73° 49' 15"
59	17° 18' 33"	73° 49' 18"
60	17° 18' 41"	73° 49' 20"
61	17° 18' 48"	73° 49' 23"
62	17° 18' 49"	73° 49' 40"
63	17° 18' 53"	73° 49' 52"

The electricity will be sold to the connected grids for which PP will enter into a Power Purchase Agreement (PPA). The exported electricity from the project activity will displace equivalent electricity from the connected grid which is primarily fossil fuel based and hence will result in reduced Greenhouse Gas emissions. The validation team confirms that the Wind Turbine Generator (WTGs) of General Electric (GE) of capacity 1.6 MW are based on a proven technology used elsewhere in the host country for electricity generation using wind energy.

LRQA confirms that the project description included in the PDD is accurate and complete. This description provides the reader with a clear understanding of the precise nature of the project activity and the technical aspects of its implementation.

The project description was validated by document review including Project Feasibility Report, interview, and the on site visit.

Sustainable development

The host Party's DNA confirmed the contribution of the project activity to the sustainable development of the host Party.

For details relating to this section, please refer to the Validation Protocol in Appendix F.

4.5 Baseline and monitoring methodology

Applicability of the selected methodology to the project activity

The project activity applied the approved baseline and monitoring methodologies: ACM0002, Version 12.3.0 "Grid connected renewable electricity generation". The methodology is valid for seeking registration until 11/01/2013 23:59:59 GMT.

LRQA confirms that the selected methodology is applicable to this project activity. The project applicability was confirmed against each condition in the approved methodology selected. Appendix F includes the list of each applicability condition, the

steps taken to validate each one and the conclusions about its applicability to the proposed project activity.

For details relating to this section, please refer to the Validation Protocol in Appendix F.

Project boundary

The project boundary has been validated through documentation review on contract for supply of equipment, contract for power generation services, interview and field survey that included physical site, and review of construction work during site visit. This information was substantiated via cross check with CO₂ baseline database for Indian Power sector, Version 06. Through the processes taken, the validation team confirmed that the identified project boundary, the selected sources and the gases were justified for the project activity and they meet the requirements of the approved methodology.

Baseline identification

The baseline scenario identified in the PDD has been assessed against the requirements in the approved methodology ACM0002, Version 12.3.0. LRQA can confirm that the procedure included in this methodology to identify the most reasonable baseline scenario, has been correctly applied.

The steps taken to assess the baseline identification are described in the Validation protocol in Appendix F.

LRQA confirms that:

- All the assumptions and data used by the project participants are listed in the PDD, including their references and sources;
- All documentation used is relevant for establishing the baseline scenario and correctly quoted and interpreted in the PDD;
- Assumptions and data used in the identification of the baseline scenario are justified appropriately, supported by evidence and can be deemed reasonable;
- Relevant national and/or sectoral policies and circumstances are considered and listed in the PDD;
- The approved baseline methodology has been correctly applied to identify the most reasonable baseline scenario and the identified baseline scenario reasonably represents what would occur in the absence of the proposed CDM project activity.

Algorithms and/or formula used to determine emission reductions

LRQA has confirmed that the steps taken and the equations applied to calculate baseline emissions and emission reductions comply with the requirements of the approved methodology ACM0002, Version 12.3.0

The steps taken to assess the algorithms and/or formula used to determine emission reductions are described in the Validation protocol in Appendix F.

LRQA confirms that:

- All assumptions and data used by the project participants are listed in the PDD, including their references and sources;
- All documentation used by project participants as the basis for assumptions and source of data is correctly quoted and interpreted in the PDD;
- All values used in the PDD are considered reasonable in the context of the proposed CDM project activity;
- The baseline methodology has been applied correctly to calculate project emissions, baseline emissions, leakage and emission reductions;
- All estimates of the baseline emissions can be replicated using the data and parameter values provided in the PDD.

4.6 Additionality of a project activity

The project additionality was demonstrated by the PP using the Tool for the demonstration and assessment of additionality Version 06.0.0.

Prior consideration of CDM

The start date of the project activity is 01/03/2011 based on the purchase order for transformer. Validation team confirmed the start date from the review of contract for supply of equipment, contract for energy generation services, and purchase orders.

The start date of the project activity is after 02/08/2008. Prior consideration of the project activity was demonstrated through notification made to DNA of India and UNFCCC secretariat on 27/04/2011. Validation team confirmed the prior consideration through the list of notifications available at UNFCCC website, completed CDM prior consideration form, and emails sent to DNA and UNFCCC secretariat.

The steps taken to assess the prior serious consideration of the CDM are described in the Validation protocol in Appendix F.

Identification of alternatives

The list in the Validation Protocol – Appendix F section 6.b, shows the baseline as prescribed by the applied methodology and clearly states how LRQA has validated it to be credible and complete.

It is the opinion of LRQA that the list of alternatives provided in the PDD are credible and complete considering the technology and circumstances of the proposed Project activity as well as the investor business.

Investment analysis

The Investment analysis option has been used to demonstrate the additionality of the proposed project activity. LRQA confirms that the PDD provides evidence that this project activity would not be economically or financially feasible, without the revenue from the sale of CERs.

The PP have shown that the project activity is additional by demonstrating that the financial returns of the proposed CDM project activity would be insufficient to justify the required investment.

For assessing the additionality of this project activity LRQA has complied with the latest version of the “Guidelines on the Assessment of Investment Analysis” as provided by the CDM Executive Board and with other relevant guidance including the latest guidelines on plant load factors “Guidelines for the reporting and validation of plant load factors”.

For details about the validation of the parameters used in the financial calculations and assessment of the benchmark applied, please refer to the Validation protocol in Appendix F.

LRQA confirms that the underlying assumptions for the investment analysis are appropriate and that the financial calculations are correct.

Common practice analysis

LRQA confirms that the proposed CDM project activity is not widely observed and commonly carried out in the region India.

For details about the validation of the geographical scope, the assessment of the existence of similar projects and also the assessment of the essential distinctions between the proposed project activity and any similar projects, please refer to the Validation protocol in Appendix F.

4.7 Monitoring Plan

The PDD includes a Monitoring Plan based on the approved monitoring methodology ACM0002, Version 12.3.0.

LRQA confirms that the Monitoring Plan described in the PDD complies with the requirements in the Monitoring Methodology and that the PP will be able to apply this Monitoring Plan following the monitoring arrangements described in it.

For details about the validation of the Monitoring Plan, please refer to the Validation protocol in Appendix F.

4.8 Local stakeholder consultation

The PP invited Local Stakeholders to comment on the proposed project activity on 04/05/2011 before the publication of the PDD on the UNFCCC website. The local stakeholder consultation meeting was held at Karad.

LRQA confirms that the stakeholder consultation process targeted stakeholders and was appropriate for identifying stakeholders' opinions about the project and collecting their views.

For details about the steps taken to assess the adequacy of the Stakeholder consultation, please refer to the Validation protocol in Appendix F.

4.9 Environmental impacts

LRQA has confirmed that the host country regulations do not require any Environmental Impact Assessment (EIA) to be conducted for the project activity.

For details about the document review and determination of whether the PP have undertaken the analysis of environmental impacts, please refer to the Validation protocol in Appendix F.

4.10 Summary of Changes

Significant changes made to the original PDD published for Global Stakeholder Consultation Process are summarised below. The PDD version 1.1 dated 28/07/2011 was modified and several changes occurred due to the result of validation process. The PDD version 1.10 dated 28/11/2012 includes all these changes.

For details about the results of the responses to CARs and CLs, discussions on revisions to project documentation and the detailed changes to the PDD coming from the validation process, please refer to the Validation Findings Log in the Validation Protocol in Appendix F.

Item	Description	Value in PDD GSP	Value in PDD RfR	CAR/CL
1.	Project description has been amended to include the phased implementation schedule. Further, technical specification, lifetime, plant load factor and monitoring equipment and their location has been included as well.	NA	NA	CAR02
2.	Connected grid system was not correctly referenced.	Inconsistent	NEWNE	CAR02
3.	Applicability conditions of the applied tool is now included in the PDD	NA	NA	CAR-03
4.	The project boundary diagram was incomplete. Revised PDD now includes the	NA	NA	CAR04

Item	Description	Value in PDD GSP	Value in PDD RfR	CAR/CL
	location of meters at the substation and feeder line, and grid connected power plants.			
5.	Project start date was incorrectly considered.	04/05/2012	01/03/2012	CAR05
6.	Project cost was corrected in the PDD due to typographical error. Further, costs related to contingency and studies & permit was removed	INR 6957.519 Millions	INR 7010.8 Millions	CAR-06
7.	Due to decrease in project cost by removing costs related to contingency and studies & permit, the IRR was increased	7.16%	9.50%	CAR-06
8.	Electricity tariff rate was revised as it was not available at the time of investment decision	INR 5.37/kWh	INR 5.33/kWh	CAR-06
9.	Benchmark was revised as list of companies with beta more than 2 was removed	13.50%	12.18%	CAR-07
10.	Common practice analysis was revised in accordance with the additionality tool, Version 06.0.0	NA	Factor, F = 0.007	CAR-08
11.	Operating margin emission factor was revised conservatively by rounding it down	0.9487 tCO ₂ /MWh	0.9486 tCO ₂ /MWh	CAR-09
12.	Evidence of PLF was not submitted. PLF was now taken from the study report prepared by third party, whereas initial PDD was referring to tariff order.	20%	22.238%	CAR-09
13.	Based on change in PLF in closure of CAR-09 ex-ante emission reduction estimate was changed.	167,542 tCO ₂ /annum	186,270 tCO ₂ /annum	CAR-09
14.	Monitoring plan revised.	NA	NA	CAR-10

5 Comments by parties, stakeholders and NGOs

In line with the requirement of the Procedures for Processing and Reporting on Validation of CDM project activities, the PDD is to be made publicly available for 30 days subject to confidentiality provisions agreed with the PP, to enable comments to be received from Parties, stakeholders, and UNFCCC accredited NGOs on the validation and registration requirements.

The PDD was made publicly available in line with the requirements of the procedure for the period of 30/07/2011 – 28/08/2011 as per <http://cdm.unfccc.int/Projects/Validation/DB/RPEFAKF9LIL2GUPF15O45ETZ8PC2A3/view.html>.

One comment was received during the period and the comments were made publicly available as per <http://cdm.unfccc.int/Projects/Validation/DB/RPEFAKF9LIL2GUPF15O45ETZ8PC2A3/view.html>.

The comment received has been taken into consideration as detailed in Appendix D of this report.

6 Validation Opinion

LRQA has undertaken the validation of the proposed project activity “Wind based power generation by Panama Wind Energy Private Limited in Maharashtra, India” based on the requirements of CDM as set out in Article 12 of the Kyoto Protocol, the CDM M&P, the present annex, subsequent decisions made by the COP/MOP and CDM-EB, and the other rules applicable to the proposed project activity including the host country’s legislation and its specific requirements for sustainable development.

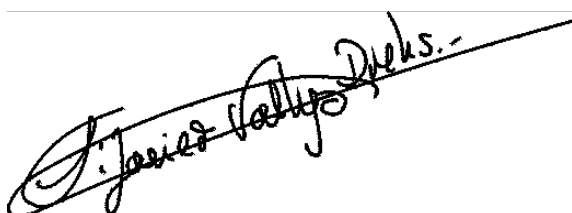
The project activity is installation of new 100.8 MW wind power project (63 × 1.6MW) at Satara, Maharashtra in India. The electricity generated from the project activity will be sold to the connected grid for which PP will enter into Power Purchase Agreement (PPA). The exported electricity from the project activity, thus, will displace equivalent electricity from the connected grid which is primarily fossil fuel based and hence will result in reduced greenhouse emissions.

To arrive at the final validation conclusions and opinion, LRQA carried out review of project documents, assessment of compliance with and application of the approved consolidated methodology as well as the approved methodological tools, field survey and physical on site assessment of the project site and interviewing the local stakeholders. There was no project component or issues excluded from the validation.

Through the validation process, the validation team identified 10 CARs. The PP has taken action on the raised issues and submitted to LRQA the revised PDD, revised investment analysis spreadsheet, and other supporting evidence.

The validation team is of the opinion that the proposed project activity conforms to all the relevant UNFCCC requirements for the CDM as well as the host country’s national requirements, and if implemented as designed, is likely to achieve the validated emission reductions of 186,270tCO₂e/annum and contribute to the sustainable development of the host country. Therefore LRQA requests the registration of “Wind based power generation by Panama Wind Energy Private Limited in Maharashtra, India” to the CDM Executive Board as a CDM project activity.

Decision Maker



Javier Vallejo Drehs
CDM Quality Manager
30/11/2012

7 Appendices

7.1 Appendix A: Letter of approval for the project by the host and investing country DNA

Letter of Approval from the DNA of India, Ref: 4/6/2012-CCC dated: 06/11/2012

7.2 Appendix B: List of documents reviewed

Category A documents (documents prepared by the PP)

1. Project Design Document, Version 1.1 dated: 28/07/2011, Version 1.5 dated: 25/04/2012, Version 1.6 dated: 29/05/2012, Version 1.7 dated: 31/07/2012, Version 1.8 dated: 10/11/2012, Version 1.9 dated: 20/11/2012, and Version 1.10 dated: 28/11/2012
2. Combined Investment analysis and emission reduction spreadsheet, Version 1 dated: 28/07/2011, Version 1.2 dated: 29/05/2012, Version 1.3 dated: 10/11/2012, Version 1.4 dated: 28/11/2012
3. Benchmark spreadsheet, Version 1 dated: 28/07/2011, Version 1.2 dated: 29/05/2012
4. Common Practice analysis spreadsheet, Version 1 dated: 29/05/2012
5. Offer by GE dated: 10/02/2011
6. Project Feasibility Report dated: 22/02/2011
7. Extracts of the Board minutes dated: 23/02/2011
8. Contract for sale of power generation equipment dated: 04/05/2011
9. Contract for power generation services dated: 04/05/2011
10. Work order for erection, testing and commissioning of fibre optic cable and stringing accessories of wind SCADA system, Ref: 55000036 dated: 15/07/2011
11. Purchase order for supply of material for wind SCADA system, Ref: 66000046 dated: 15/07/2011
12. Purchase order for supply of 33 33KV/690V, 1800KVA transformer, Ref: 66000043 dated: 13/05/2011
13. Purchase order for supply of 32 33KV/690V, 1800KVA transformer, Ref: 66000044 dated: 25/07/2011
14. Purchase order for supply of electrical equipment and system for 220/33KV, 200MVA substation, Ref: 66000040 dated: 15/03/2011
15. Purchase order for supply of 2 100MVA, 220/33KV transformers, Ref: 66000036 dated: 01/03/2011
16. Work order for erection, testing and commissioning of electrical equipment and systems for 220/33KV, 200MVA substation, Ref: 55000028 dated: 14/03/2011
17. Amendment in Purchase order for supply of 33KV circuit breakers, Ref: 66000038-RO2 dated: 21/11/2011
18. Amendment in Purchase order for supply of 33KV circuit breakers, Ref: 66000038-RO1 dated: 25/06/2011
19. Amendment in Purchase order for supply of 220KV circuit breakers, 220KV & 33KV isolators, Ref: 66000037(R-3) dated: 20/12/2011
20. Amendment in Purchase order for supply of 220KV circuit breakers, 220KV & 33KV isolators, Ref: 66000037 dated: 01/03/2011
21. Purchase order for supply of material for 33KV equipment and systems, Ref: 66000042 dated: 14/03/2011
22. Amendment work order for erection, testing and commissioning of 33KV equipment and systems, Ref: 55000031 dated: 05/10/2011

23. Work order for erection testing and commissioning of 220KV transmission lines, Ref: 55000032 dated: 18/06/2011
24. Purchase order for supply of materials for 220KV, Extra high voltage (EHV) transmission lines, Ref: 66000041 dated: 18/06/2011
25. Amendment in Purchase order for supply of 33KV circuit breakers, Ref: 66000039(R-3) dated: 21/11/2011
26. Purchase order for supply of 15Km 1.1KV LT cable, Ref: 66000047 dated: 22/07/2011
27. Purchase order for supply of 5Km 1.1KV LT cable, Ref: 66000048 dated: 23/08/2011
28. Letter to Maharashtra Energy Development Agency for infrastructure clearance for 24MW, Ref: PWEPL/MEDA/Infra/111128 dated: 28/11/2011
29. Receipt from Maharashtra Energy Development Agency for road repair and maintenance charges, Voucher no: BCR01905 dated: 07/12/2011
30. Receipt from Maharashtra Energy Development Agency (MEDA) as security deposit, Voucher no: BCR01904 dated: 07/12/2011
31. Receipt from Maharashtra Energy Development Agency for MEDA processing fee, Voucher no: BCR01903 dated: 07/12/2011
32. Receipt from Maharashtra Energy Development Agency for application fee, Voucher no: BCR01902 dated: 07/12/2011
33. Invoice for Berkley Energy Wind Mauritius Limited and Renewable Energy Asia Fund Expenses, dated: 31/03/2011
34. Agreement on advisors for fund raising, dated: 20/04/2010
35. Agreement between the PP and AHP Technologies dated: 28/06/2011
36. Land transaction documents
37. Invoices raised by Trilegal
38. Balance sheet of Panama Wind Energy Private Limited for the year 2009-10
39. Copy of local stakeholder advertisement in local Newspaper 'Sakal' dated: 04/05/2011
40. Minutes of local stakeholders meeting dated: 07/05/2011 including attendance sheet
41. Certificate of Incorporation of Panama Wind Energy Private Limited dated: 25/07/2003
42. Technical documentation of Wind turbine generator system 1.6-82.5 – 50Hz
43. Study report prepared by GL Garrad Hassan dated: 06/05/2011
44. Copy of email submitted by the PP to the DNA of India dated: 27/04/2011
45. Filled F-CDM-Prior Consideration form dated: 27/04/2011

Category B documents (other documents referenced)

1. ACM0002, Consolidated baseline methodology for grid-connected electricity generation from renewable sources (Version 12.3.0)
2. ACM0002, Consolidated baseline methodology for grid-connected electricity generation from renewable sources (Version 12.1.0)
3. Tool to calculate the emission factor for an electricity system" Version 02.2.1
4. CO₂ Baseline Database for the Indian Power Sector, User Guide Version 6.0
5. User guide version 06 CO₂ baseline database for Indian power sector.
6. Guidelines on the Assessment of Investment Analysis, Version 05.
7. Tool for the demonstration and assessment of additionality, Version 6.0.0

8. Guidelines on the Demonstration and Assessment of prior consideration of the CDM (version 04)
9. Guideline for the reporting and validation of plant load factors (Version 01)
10. Clean Development Mechanism Validation and Verification Standard (Version 03.0)
11. Clean Development Mechanism Project Standard (Version 02.0)
12. Eligibility Criteria for Host Country Approval, National CDM Authority, Ministry of Environment & Forests
13. Notification by Ministry of Environment & Forests dated 14/09/2006
14. Central Electricity Authority (CEA), Installation and operation of meters regulation, Amendment 2010.
15. Maharashtra Electricity Regulatory Commission (MERC) tariff order dated: 14/07/2010
16. MERC tariff order dated: 30/03/2012
17. Indian Renewable Energy Development Agency (IREDA) website: <http://www.ireda.gov.in/>
18. Operational Guidelines for Wind Generation Based incentives (GBI) and Accelerated Depreciation (AD) published by IREDA, dated: 17/12/2009
19. State metering code published by Maharashtra State Electricity Transmission Company Limited
20. Metering code notification published by Central Electricity Authority dated: 17/03/2006

7.3 Appendix C: List of persons interviewed

<u>S. No.</u>	<u>Name</u>	<u>Organisation</u>
1.	Dinesh Jagdale	Panama Wind Farm Private Limited
2.	Sunil Sharma	Emergent Ventures
3.	Sauvik Banerjee	Emergent Ventures
4.	S Shinde	Local villager
5.	Mr. Chandrakant Lakshman Surve	Local villager
6.	Mr. Sanjay Kadam	Local villager
7.	Mr. Anil Shantaram Patikar	Local villager

7.4 Appendix D: How due account has been taken to the public input made to the validation requirements

The PDD was made publicly available in accordance with the requirements of the Procedures for processing and reporting on validation of a CDM project activity for the period of 30/07/2011 – 28/08/2011 as per <http://cdm.unfccc.int/Projects/Validation/DB/RPEFAKF9LIL2GUPF15O45ETZ8PC2A3/view.html>.

One comment was received during the period and the comments were made publicly available as per <http://cdm.unfccc.int/Projects/Validation/DB/RPEFAKF9LIL2GUPF15O45ETZ8PC2A3/view.html>. Comment received has been taken into consideration as follows:

<u>S. No.</u>	<u>Comment</u>
1 (a)	Beta for power industry is taken at 1.65. This is very high. DOE should check other projects and will find that it cannot be more than 1. Consequently, the return

S. No.	Comment
	of 24.47% on equity assumed is very high. MERC has recommended only 16% return and EB has recommended much lower return. WACC for this project cannot be more than 11%.
Response from PP	Beta of the project has been conservatively revised to 1.23. The revised calculations do not include companies which are having exceptionally high beta when calculating average. The return on equity is 19.75%. Recommended return on equity mentioned in the tariff order is applied for tariff determination and not a suitable benchmark for additionality demonstration in accordance with Paragraph 40 of 40 th CDM-EB meeting report.
Evaluation	<p>Validation team confirmed that the average beta was calculated by conservatively not using companies with exceptionally high beta. Further, the most conservative period beta calculation was used by comparing beta for 2, 3, 4 and 5 year period. The beta used for the project activity is 1.23 based on above approach. Suitability of the period for beta calculation has been presented in the Protocol section below.</p> <p>The return on equity for the project activity was determined using Capital Asset Pricing Model (CAPM) approach which is one of the acceptable practices in corporate finance. The PP has used publicly available data for determination of benchmark.</p> <p>Team has also confirmed the suitability of return on equity by making a comparison with other similar indices. For details of return on equity and Weighted Average Cost of Capital (WACC) and validation please refer to protocol section below.</p> <p>Return on equity mentioned in the tariff order is not appropriate in the context of the investment decision of the project activity as the method is used for determination of tariff for CDM and non-CDM projects. EB has clearly described that the benchmark mentioned in the tariff order is not suitable for additionality demonstration in paragraph 40 of 40th CDM-EB meeting report. Therefore, the return on equity prescribed by MERC tariff order is not suitable for the project activity.</p>
1 (b)	Cost of the project is working out to Rs.6.96 crore ² per MW. This is very high compared to other projects. MERC and CERC recommended cost is much lower. DOE should take only purchase order into consideration and not offer. Cost cannot be more than RS.60 mn. per MW.
Response from PP	The project cost taken for investment analysis is based on project feasibility report which mentions INR 7,010.80 Millions or INR 69.55 Millions/MW. Contracted project cost based on firm purchase orders and agreements at the time of validation is INR 6,678.29 Millions, which corresponds to 66.25 Million/MW. Since the project is not yet commissioned, the actual project cost is likely to increase.
Evaluation	Validation team confirmed the total project cost of INR 7,010.80 millions from the review of project feasibility report. Validation team further assessed the actual contracted project cost to be INR 6,678.29 millions from the purchase orders and agreements. Validation of the project cost is also included in the Protocol section 7C below.
1 (c)	Order for the equipment was placed in May 2011. The project was commissioned in the same year as the CER credit is being sought from March 2012. Hence, the

² One Crore is ten Millions

S. No.	Comment
	project starts operation in the same year in which it invests. As per financial management principles, the investment should be deducted from the profit of first year and net investment should be taken into account.
Response from PP	The cash-flow statement in the investment analysis considers the investment in the project activity and first year cash inflow from the project in the same year, i.e. financial year 2011-12.
Evaluation	Based on the review of investment analysis, validation team confirms that investment has been deducted from the profit of first year and net investment is taken into account. Validation team confirms that correct approach has been used for cash flow calculations.
1 (d)	DOE should ensure that the PP has taken into account accelerated depreciation (80%+20% additional depreciation) and tax holiday. Tax savings due to accelerated depreciation should be taken into account as cash inflow in the first year.
Response from PP	The project is registered under Generation based incentive (GBI) scheme; the accelerated scheme has not been applied.
Evaluation	Out of the two schemes, accelerated depreciation and Generation Based Incentives (GBI) only one can be selected ³ . Validation team confirms that GBI scheme will be used for the project activity as was considered during the investment decision by the PP. Based on the host country expertise of the team it was confirmed that incentives has been correctly applied in the investment analysis.
1 (e)	IRR cannot be as low 7.16% for this project.
Response from PP	The project IRR has now been revised to 9.40%.
Evaluation	Based on the review of investment analysis, validation team confirms that project IRR has been correctly calculated as 9.40%. The detail of validation is included in section 7C of the validation protocol.

7.5 Appendix E: Certificate of Appointment

Validation of “Wind based power generation by Panama Wind Energy Private Limited in Maharashtra, India”

We hereby certify that the following personnel have engaged in the validation process that has fully satisfied the competence requirements of the validation of the CDM project activity.

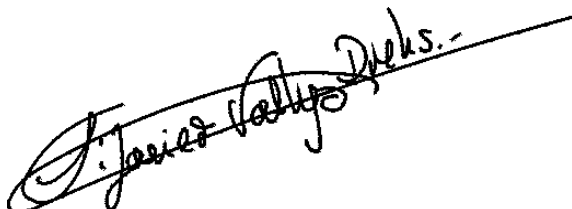
Name of Person

Ankush Jain
Shubha Shanbhag
Imran Ustad
Prabodha C Acharya
Javier Vallejo Drehs

Assigned Roles

Team Leader and sector expert
Team Leader⁴ and sector expert
Technical Reviewer and Sector expert
Decision Maker – Trainee
Decision Maker

Signed by
Decision Maker



Javier Vallejo Drehs
CDM Quality Manager
30/11/2012

⁴ Shubha Shanbhag was involved in this project till 11/04/2012. Thereafter the project is lead by Ankush Jain

7.6 Appendix F: Validation Protocol and findings log

LLOYDS REGISTER QUALITY ASSURANCE Clean Development Mechanism Validation Protocol and Findings

This document has been produced by the LRQA Validation Team after the completion of the desk review and the site visit. It outlines the validated situation in relation to a number of criteria, including those defined in the Validation and Verification Standard (VVS) produced by the CDM Executive Board.

The questions within this document must be completed in full and in your own words. The purpose of this protocol is to record LRQA's opinion and LRQA's findings.

If LRQA has identified issues requiring corrective action or clarification, make a reference in the 'Conclusion' column, and state details in the section marked 'Findings'.

	Validated situation	Conclusion
SECTION 1. Approval and contribution to sustainable development		
Host Country Approval		
1. Has the Host country DNA provided a written approval?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/> ⁵ CAR 01 was issued as LoA was not submitted for validation. In response to the finding the PP has submitted the LoA. The resolution is as detailed in the findings section of this protocol.	CAR-01 OK
2. Confirm that the letter has been issued by the Party's DNA and is valid for the proposed CDM project activity under validation	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/> LoA was issued on 06/11/2012 by the National Clean Development Mechanism Authority (NCDMA) established in the Ministry of Environment and Forests (MoEF) which is the Designated National Authority (DNA) of the host country Party as per http://cdm.unfccc.int/DNA/index.html . The LoA is issued for the proposed project activity.	OK
3. Mention the means of validation employed to assess the authenticity of the Letter of Approval. Indicate the source of the LoA (for example, PP or directly from the DNA)	The LoA was made available by the PP. Comparison with other approved projects by the DNA was also conducted to check the authenticity of the letter (included project ref 6325 and 6317).	OK

⁵For each section and question where a YES / NO / NA answer is required, explain your choice.

	Validated situation	Conclusion
<p>4. Does the written Letter of Approval confirm the following:</p> <p>(a) The Party is a Party to the Kyoto Protocol (including ratification)?</p> <p>(b) Participation is voluntary?</p> <p>(c) The proposed CDM project activity contributes to the sustainable development of the country?</p> <p>(d) It refers to the precise proposed CDM project activity title in the PDD being submitted for registration?</p>	<p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/></p> <p>The LoA confirms:</p> <p>(a) The host country Party ratified the Kyoto Protocol on August 2002.</p> <p>(b) The participation is voluntary.</p> <p>(c) The proposed project activity will assist the host country in achieving sustainable development.</p> <p>(d) The LoA indicates the precise title of the proposed project activity as indicated in the PDD.</p>	OK
<p>5. Is the letter of approval unconditional with respect of (a) to (d) above?</p>	<p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/></p> <p>The LoA does not add any specific condition to the points stated therein.</p>	OK
<p>6. Does the LoA from the host party acknowledge the bundle activity (if applicable)?</p>	<p>Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input checked="" type="checkbox"/></p> <p>The project is not a bundled activity.</p>	-
Annex I Party Approval		
<p>7. Has the Annex I country DNA provided a written approval?</p>	<p>Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input checked="" type="checkbox"/></p> <p>The project activity is currently developed as a unilateral project. Annex 1 participant is not specified at this stage. In line with the provision of paragraph 57 of the 18th meeting of the CDM-EB, registration of a project activity can take place without an Annex I party being involved at the stage of registration.</p>	-
<p>8. Confirm that the letter has been issued by the Party's DNA and is valid for the proposed CDM project activity under validation.</p>	<p>Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input checked="" type="checkbox"/></p>	-
<p>9. Mention the means of validation employed to assess the authenticity of the Letter of Approval.</p> <p>Indicate the source of the LoA (for example, PP or directly from the DNA).</p>	Not Applicable	-

	Validated situation	Conclusion
10. Does the written Letter of Approval confirm the following: (a) The Party is a Party to the Kyoto Protocol (including ratification)? (b) Participation is voluntary? (c) It refers to the precise proposed CDM project activity title in the PDD being submitted for registration?	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input checked="" type="checkbox"/>	-
11. Is the letter of approval unconditional with respect of (a) to (c) above?	Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input checked="" type="checkbox"/>	-
Host Country and Annex I Party Approval		
12. Do any of the Letters of Approval contain additional specification of the project activity? Like: - PDD Version number? - Validation report version number? Make sure that the request for registration is made on the basis of the documents specified in any of the letters.	The LoA does not refer to a specific version number of the PDD or validation report.	OK

		Validated situation		Conclusion
SECTION 2. Authorisation				
1	Confirm that the PPs are listed in a tabular form in section A.3 of PDD and that this information is consistent with the contact details provided in Appendix 1 of the PDD and with the contact details in the MoC.	Host Party PP name in PDD/ A.4	Panama Wind Energy Private Limited	OK
		Host Party PP name in PDD/ Appendix 1	Panama Wind Energy Private Limited	
		Host Party PP name in MoC	Panama Wind Energy Private Limited	
		Annex 1 Party PP name in PDD/ A.4	NA	
		Annex 1 Party PP name in PDD/ Appendix 1	NA	
		Annex 1 Party PP name in MoC	NA	
2	Confirm that each of the PPs has been approved by at least one Party involved.	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/> The PP, Panama Wind Energy Private Limited, is approved by India. Refer LoA The project activity is currently developed as a unilateral project. Annex 1 participant is not specified at this stage. The PP, Panama Wind Energy Private Limited, is approved by the DNA of India.		OK
3	Confirm that no entities other than those approved as PPs are included in section A.3 of PDD.	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/> Refer above		OK
4	Ensure that the approval of participation has been issued from the relevant DNA. If in doubt verify this with the corresponding DNA.	The approval by the host Party DNA has been issued by the correct organization. Validation team had also confirmed the LoAs from the similar cases.		OK

	Validated situation	Conclusion
SECTION 3. Modalities of communications		
<p>1 Validate the corporate identity of all the PPs and the focal point included in the MoC letter:</p> <ul style="list-style-type: none"> - Validate the signatures - Validate the employment status. <p>To validate this use any of the following options:</p> <ol style="list-style-type: none"> Directly checking with evidence from PPs and the corresponding companies, for example, contracts, personal identity card or passport, HR records. Notarised documentation, e.g power of attorney for signing on behalf of the company and the other PPs. Written confirmation from the PP that all the personal details are valid and accurate. 	<p>Validation team confirmed the corporate identity of the PP, Panama Wind Energy Private Limited, from the review of following documents:</p> <ul style="list-style-type: none"> ▪ Certificate of Incorporation of Panama Wind Energy Private Limited ▪ Validation contract with LRQA Ltd ▪ From the review of company website: http://www.panama-group.com/wind-energy.php <p>Validation team confirmed the name of the representative and its signatures from the following documents</p> <ul style="list-style-type: none"> • Validation contract with LRQA • Purchase order for circuit breaker dated: 21/11/2011, • Purchase order for electrical equipment dated: 13/05/2011, • Purchase order for power transformer dated: 01/03/2011. 	OK
<p>2 If a written confirmation (option c) is chosen from the options above, the following issues shall be validated:</p> <ul style="list-style-type: none"> - The PP sending the written confirmation and signing it shall be the one signing the contract with LRQA. - The person signing the written confirmation and the person signing the MoC (if they are different persons) are duly authorised to do so on behalf of all the PPs, that is, they have a signed authorisation from the other PPs and the identity and role of the person who has signed this authorisation has been checked. 	NA	-
<p>3 Has the MoC been completed as per the latest "Procedures for MoC between the project participants and the Executive Board"?</p> <ul style="list-style-type: none"> - No modifications to the template / form should be made and each document should be clearly dated 	<p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/></p> <p>MoC is consistent with the PDD.</p> <p>Validation team confirms that:</p> <ol style="list-style-type: none"> 1. No modification in the template has been made. 2. Title of the project and names of project participants and focal points are fully consistent with the PDD. The PP, Panama Wind Energy Private 	OK

	Validated situation	Conclusion
<ul style="list-style-type: none"> - Title of the project and names of project participants and focal points should be fully consistent with those indicated in all other project documentation - Focal point scopes should be clearly and correctly indicated - Contact details and specimen signatures of focal point entities including those of project participants in Annex 1 should be correctly entered. Only one telephone, fax, email contact should be entered per authorized signatory. In cases where additional contact details are included, only the first indicated information will be taken into account and only the official business address of the proposed entity should be provided on the F-CDM-MOC form. - The Statement of Agreement in Section 3 should be signed by one authorized signatory for each project participant; signatures made available in Section 3 should correspond to those indicated in the related Annex 1 document; focal point entities who are not designated as project participants should not sign Section 3. 	<p>Limited, consistent between PDD, and the MoC.</p> <ol style="list-style-type: none"> 3. Focal point scopes are clearly and correctly indicated 4. Contact details and specimen signatures has been correctly entered. 5. Statement of Agreement in Section 3 is signed by one authorized signatory of project participant. 	

	Validated Situation	Conclusion
SECTION 4. Project design document		
1. Is the project activity Small Scale or Normal Scale?	Normal Scale <input checked="" type="checkbox"/> Small Scale <input type="checkbox"/> Bundled Small Scale <input type="checkbox"/> (cross as appropriate)	OK
2. Has the PDD used the latest template and guidance from the CDM Executive Board available on the UNFCCC CDM Website? Check outputs from the completeness check.	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> F-CDM-PDD template Version 04.1 and Guidelines for completing the project design document form, Version 01 which are the current versions under VVS track available in UNFCCC CDM website, are used.	OK

	Validated situation	Conclusion												
SECTION 5. Description of project activity														
1. Describe the process undertaken to validate that the description of the proposed CDM project activity as contained in the PDD sufficiently covers all relevant elements, is accurate, and that it provides the reader with a clear understanding of the nature of the proposed CDM project activity.	<p>The project activity is installation of 100.8MW new grid connected wind power plant in Maharashtra state in India. The project activity was initially planned to be implemented in phased manner. The phases include:</p> <table><tr><th>Expected Commissioning date</th><th>Capacity (MW)</th></tr><tr><td>31.12.2011</td><td>19.2</td></tr><tr><td>31.01.2012</td><td>25.6</td></tr><tr><td>29.02.2012</td><td>25.6</td></tr><tr><td>31.03.2012</td><td>30.4</td></tr><tr><td>TOTAL</td><td>100.8</td></tr></table> <p>However, the project commissioning is delayed and commissioning is expected to start from August 2012.</p> <p>The electricity generated by the project activity will be supplied to the North East West North-East (NEWNE) grid system. The electrical energy produced by the project activity will be measured using electronic tri-vector bi-directional electricity meters.</p> <p>The description of the project activity was validated based on review of the PDD and supporting documents, physical site visit and field interviews that included the overall design document, agreements, purchase orders, technical specification, and estimation of electricity generation by the technology supplier.</p> <p>CAR-02 was raised during validation as details of the phased implementation, technical specification, lifetime, PLF, monitoring equipment, roles and responsibilities were not presented in the PDD. For detailed resolution refer findings section of the Protocol.</p>	Expected Commissioning date	Capacity (MW)	31.12.2011	19.2	31.01.2012	25.6	29.02.2012	25.6	31.03.2012	30.4	TOTAL	100.8	CAR-02 OK
Expected Commissioning date	Capacity (MW)													
31.12.2011	19.2													
31.01.2012	25.6													
29.02.2012	25.6													
31.03.2012	30.4													
TOTAL	100.8													
2. Confirm that the exact project location is provided in the PDD with Geographical coordinates, check the accuracy of them and the format of the notation	The project activity is located in Satara, Maharashtra state in India. The geo-coordinates of all the 63 wind turbines are as follows:	OK												

	Validated situation			Conclusion
	WTG No	Latitude (N)	Longitude (E)	
(Grades, minutes, seconds or decimal indicating latitude N or S and Longitude E or W) Please include here the Geographical coordinates:	1	17° 17' 42"	73° 46' 33"	
	2	17° 17' 51"	73° 46' 32"	
	3	17° 18' 07"	73° 46' 35"	
	4	17° 18' 15"	73° 46' 37"	
	5	17° 18' 15"	73° 46' 38"	
	6	17° 18' 23"	73° 46' 21"	
	7	17° 18' 31"	73° 46' 46"	
	8	17° 18' 41"	73° 46' 35"	
	9	17° 18' 50"	73° 46' 37"	
	10	17° 18' 56"	73° 46' 43"	
	11	17° 19' 03"	73° 46' 48"	
	12	17° 19' 10"	73° 46' 53"	
	13	17° 19' 17"	73° 47' 00"	
	14	17° 19' 23"	73° 47' 06"	
	15	17° 19' 29"	73° 47' 13"	
	16	17° 19' 36"	73° 47' 19"	
	17	17° 19' 41"	73° 47' 28"	
	18	17° 19' 24"	73° 47' 34"	
	19	17° 19' 30"	73° 47' 40"	
	20	17° 19' 41"	73° 47' 45"	
	21	17° 18' 19"	73° 47' 02"	
	22	17° 18' 25"	73° 47' 10"	
	23	17° 18' 29"	73° 47' 23"	
	24	17° 18' 37"	73° 46' 59"	
	25	17° 18' 23"	73° 46' 21"	
	26	17° 18' 53"	73° 47' 05"	
	27	17° 19' 00"	73° 47' 11"	
	28	17° 19' 05"	73° 47' 19"	
	29	17° 19' 09"	73° 47' 31"	
	30	17° 19' 11"	73° 47' 45"	
	31	17° 19' 18"	73° 47' 57"	
	32	17° 19' 26"	73° 48' 02"	
	33	17° 19' 33"	73° 48' 06"	
	34	17° 18' 14"	73° 47' 24"	

	Validated situation				Conclusion
		35	17° 19' 01"	73° 47' 54"	
		36	17° 19' 07"	73° 48' 09"	
		37	17° 19' 11"	73° 48' 21"	
		38	17° 19' 19"	73° 48' 23"	
		39	17° 19' 27"	73° 48' 27"	
		40	17° 19' 24"	73° 48' 39"	
		41	17° 19' 38"	73° 48' 52"	
		42	17° 19' 47"	73° 48' 58"	
		43	17° 18' 53"	73° 48' 34"	
		44	17° 19' 00"	73° 48' 37"	
		45	17° 19' 09"	73° 48' 40"	
		46	17° 19' 17"	73° 48' 43"	
		47	17° 19' 24"	73° 48' 48"	
		48	17° 19' 30"	73° 48' 49"	
		49	17° 19' 36"	73° 49' 12"	
		50	17° 18' 18"	73° 48' 44"	
		51	17° 18' 26"	73° 48' 46"	
		52	17° 18' 33"	73° 48' 51"	
		53	17° 18' 41"	73° 48' 53"	
		54	17° 18' 48"	73° 48' 57"	
		55	17° 18' 56"	73° 49' 02"	
		56	17° 19' 02"	73° 49' 06"	
		57	17° 19' 11"	73° 49' 09"	
		58	17° 19' 17"	73° 49' 15"	
		59	17° 18' 33"	73° 49' 18"	
		60	17° 18' 41"	73° 49' 20"	
		61	17° 18' 48"	73° 49' 23"	
		62	17° 18' 49"	73° 49' 40"	
		63	17° 18' 53"	73° 49' 52"	
3. Confirm that the physical site inspection reflects the description in the PDD of the proposed CDM project activity. Describe briefly the physical site inspection: Travel details and installations, facilities and buildings visited.	The validation team conducted a physical site visit and confirmed consistency of the described project activity in the PDD. During the site visit it was confirmed that the substation was under construction. Further, it was confirmed from the interview that the project will be implemented in phased manner. The Team visited the PP's office, project site, and local villages.				OK

	Validated situation		Conclusion
4. If the team did not undertake a physical site inspection, describe the justification as approved by the CDM Quality Manager. (VVS 02.0: 65-67)	NA		-
5. If the proposed CDM project activity involves the alteration of an existing installation or process, ensure that the project description clearly states the differences resulting from the project activity compared to the pre-project situation.	Pre-project	Project activity	OK
	NA The project is a Greenfield activity.	NA The project is a Greenfield activity.	
6. Potential public funding for the project from Parties in Annex I shall not be a diversion of official development assistance (ODA).	Validation team confirmed from the review of information submitted that the project does not involve diversion of ODA.		OK
7. If the project activity is a small scale one, confirm that it is not a debundled component of a large scale project, in line with the Guidelines for assessment of de-bundling for SSC project activities. Check if there is another registered small scale project activity or an application to register one. Take into account specific debundling requirements for Type I project activities. Describe how this has been validated.	NA		-

	Validated situation	Conclusion
SECTION 6. Application of the selected baseline and monitoring methodology applicability		
1. Have the baseline and monitoring methodologies selected by the project participants been previously approved by the CDM Executive Board, that is, does it appear on the methodologies page of the UNFCCC website?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/> Consolidated baseline methodology for grid connected electricity generation from renewable sources, ACM0002, Version 12.3.0 is applied. The methodology refers to Tool to calculate the emission factor for an electricity system, Version 02.2.1. Tool for the demonstration and assessment of additionality, Version 06.0.0	OK
2. If the project activity is a Small Scale one; does it qualify within the threshold of the three possible types of small scale projects? Confirm information provided in the PDD.	NA	-
3. If the project activity is a Small Scale one; which approved small scale methodology does the project apply? Confirm that the SSC methodology is applied with the general guidelines to SSC CDM methodologies.	NA	-
4. Determine whether the methodology selected is applicable to the project activity including that the used version is valid. Describe steps taken to assess the relevant information contained in the PDD in the table below.	The applied methodology, ACM0002, Version 12.3.0 is valid for seeking registration by 11/01/2013 23:59:59 GMT The latest version of the additionality tool is Version 07.0.0. The PP has applied additionality tool Version 06.0.0 is valid for seeking registration by 22/07/2013 23:59:59 GMT. The latest version of the grid emission factor tool is Version 03.0.0. The PP has applied grid emission factor tool Version 02.2.1 is valid for seeking registration by 22/07/2013 23:59:59 GMT CAR-03 was raised as applicability conditions of the tool were not described in the PDD. In response to the finding, the PP has included the applicability condition of the tool. Team confirmed the applicability conditions of the tool are correctly presented and justified. Therefore, finding was closed. For detailed resolution refer findings section of the Protocol.	CAR-03 OK

	Validated situation	Conclusion

No.	Applicability conditions in the ACM0002 Version 12.3.0	Information in the PDD	Steps taken to assess PDD information	Conclusion
1	This methodology is applicable to grid-connected renewable power generation project activities that (a) install a new power plant at a site where no renewable power plant was operated prior to the implementation of the project activity (greenfield plant); (b) involve a capacity addition; (c) involve a retrofit of (an) existing plant(s); or (d) involve a replacement of (an) existing plant(s).	The project activity consists of installation of new power plant at a site where no renewable power plant was operated prior to the implementation of the project activity. Thus, it meets the said applicability condition.	Validation team confirmed that the project activity is a new wind power project supplying electricity to NEWNE grid from the review of agreements, purchase orders, and field survey.	OK
2	<p>The methodology is applicable under the following conditions:</p> <ul style="list-style-type: none"> 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; In the case of capacity additions, retrofits or replacements (except for capacity addition projects for which the electricity generation of the existing power plant(s) or unit(s) is not affected): the existing plant started commercial operation prior to the start of a minimum historical reference 	<p>The project activity is the installation of 63 numbers of wind turbine generators (WTGs). Hence, meets this criterion.</p> <p>The project activity does not involve capacity additions. Hence this criterion is not applicable to the project activity.</p>	Validation team confirmed that the project activity is a new wind power plant from the review of agreements, purchase orders, and field survey.	OK

No.	Applicability conditions in the ACM0002 Version 12.3.0	Information in the PDD	Steps taken to assess PDD information	Conclusion
	period of five years, used for the calculation of baseline emissions and defined in the baseline emission section, and no capacity addition or retrofit of the plant has been undertaken between the start of this minimum historical reference period and the implementation of the project activity;			
3	<p>In case of hydro power plants: One of the following conditions must apply:</p> <ul style="list-style-type: none"> ○ The project activity is implemented in an existing single or multiple reservoirs, with no change in the volume of any of reservoirs; or ○ The project activity is implemented in an existing single or multiple reservoirs, where the volume of any of reservoirs is increased and the power density of each reservoir, as per the definitions given in the Project Emissions section, is greater than 4 W/m²; 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. 	The project activity is not a hydro power plant. Hence this applicability criterion is not relevant to the project activity.	Validation team confirmed that the project is a wind power project from the review of agreements, purchase orders, and field survey.	OK
4	In case of hydro power plants using multiple reservoirs where the power density of any of the reservoirs is lower than 4 W/m ² all the	The project activity is not a hydro power plant. Hence this applicability criterion is not relevant to the project activity.	Validation team confirmed that the project is a wind power project from the review of agreements, purchase orders,	OK

No.	Applicability conditions in the ACM0002 Version 12.3.0	Information in the PDD	Steps taken to assess PDD information	Conclusion
	<p>following conditions must apply:</p> <ul style="list-style-type: none"> • The power density calculated for the entire project activity using equation 5 is greater than 4 W/m²; • All reservoirs and hydro power plants located at the same river and were are designed together to function as an integrated project⁶ 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 15MW; • 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. 		and field survey.	
5	The methodology is not applicable to the	Project activity does not involve:		OK

⁶ This requirement can be demonstrated, for example, (i) by the fact that water flow from upstream power units spilling directly to the downstream reservoir, or (ii) through the analysis of the water balance. Water balance is the mass balance of water fed to power units, with all possible combinations of multiple reservoirs and without the construction of reservoirs. The purpose of such water balance is to demonstrate the requirement of specific combination of multiple reservoirs constructed under CDM project activity for the optimization of power output. This demonstration has to be carried out in the specific scenario of water availability in different seasons to optimize the water flow at the inlet of power units. Therefore this water balance will take into account seasonal flows from river, tributaries (if any), and rainfall for minimum three years prior to implementation of CDM project activity.

No.	Applicability conditions in the ACM0002 Version 12.3.0	Information in the PDD	Steps taken to assess PDD information	Conclusion
	following:			
5.1	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;	Switching from fossil fuels to renewable energy sources at the site of the project activity.	Validation team confirmed from the review of agreements, purchase orders, its sectoral expertise and field survey that the project does not involve switching from fossil fuel.	OK
5.2	Biomass fired power plants	Biomass fired plants.	Validation team confirmed that the project is a wind power project, does not involve biomass fired power plants from the review of agreements, purchase orders, and field survey.	OK
5.3	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 power plant is less than 4 W/m ²	Construction of new reservoir or increase in an existing reservoir	Validation team confirmed that the project is a wind power project from the review of agreements, purchase orders, and field survey.	OK
6	In the case of retrofits, replacements, or capacity additions, this methodology is only applicable if the most plausible baseline scenario, as a result of the identification of baseline scenario, is "the continuation of the current situation, i.e. to use the power generation equipment that was already in use prior to the implementation of the project activity and undertaking business as usual maintenance".	The project is not a retrofit, replacements, or capacity addition; hence this applicability criterion is not relevant.	Validation team confirmed from the review of agreements, purchase orders and field survey that the project activity does not involve any retrofit or replacement.	OK
7	In addition, the applicability conditions included in the tools referred to above apply.	Applicability conditions of the applied tool are justified	Team confirmed from the PDD that applicability conditions of the grid emission factor tool are justified. The steps taken for assessment are presented below.	OK

No.	Applicability conditions in the Grid emission factor tool Version 02.2.1	Information in the PDD	Steps taken to assess PDD information	Conclusion
1	This tool may be applied to estimate the OM, BM and/or CM when calculating baseline emissions for a project activity that substitutes grid electricity, 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 (e.g. demand-side energy efficiency projects).	The project activity substitutes grid electricity by supplying power to grid. Hence this criterion is applicable.	Validation team confirmed from the review of the applied methodology, PDD and site visit that the project activity substitutes grid electricity.	OK
2	In case of CDM projects the tool is not applicable if the project electricity system is located partially or totally in an Annex I country.	Since the project electricity system is not located partially or totally in Annex I country hence this criterion is applicable.	Validation team confirmed from the review of the PDD, Baseline CO2 database for Indian Power sector, Version 06 and site visit that no part of the grid system is located in Annex I country.	OK

	Validated situation	Conclusion
5. Confirm that any specific guidance provided by the CDM Executive Board in respect to an approved methodology has been correctly applied.	The methodology sets the clear criteria to check the applicability conditions and each condition is checked as detailed above.	OK
6. If a determination regarding the applicability of the selected methodology to the proposed CDM project activity cannot be made, request clarification of the methodology in line with the guidance provided by the CDM Executive Board. Describe the clarification request and response.	No such issues have been identified	OK

	Validated situation	Conclusion
<p>7. If the Validation Team determines that the proposed CDM project activity does not comply with the applicability conditions of the methodology, the Team may proceed by means of requesting revision to or deviation from the methodology in line with the guidance provided by the CDM Executive Board.</p> <p>Describe the request for revision or deviation and approval by the CDM Executive Board.</p>	No such issues have been identified	OK

	Validated situation	Conclusion
SECTION 6a. Project boundary		
1. Does the project boundary include physical, geographical site of the industrial facility, processes, or equipment that are affected by the project activity?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>	OK
2. If the proposed project activity has both Afforestation/Reforestation (A/R) and non-A/R components, to avoid double counting of emission sources, LRQA shall confirm that the emissions associated with the A/R activity will be accounted for and documented by the A/R project activity.	Validation team confirmed from the site visit and its sectoral expertise that the project activity does not have any A/R component.	OK
3. If there are any GHG emissions occurring within the proposed CDM project activity boundary, which are not addressed by the applied methodology and which are expected to contribute more than 1% of the overall expected average annual emissions reductions as a result of the implementation of the project, LRQA shall request clarification of, revision to, or deviation from the methodology as appropriate.	Not applicable	-
4. Confirm that all sources and GHGs required by the methodology have been included within the project boundary. Describe here if any emission source that will be affected by the project activity and is not addressed by the approved methodology, has been identified. In such case request clarification of, revision to or deviation from the methodology in accordance with EB guidance. Use the table below for this purpose:	All sources and GHGs as required by the methodology have now been included in the project boundary. There is no emission source that is affected and not considered by the project activity and not addressed by the methodology. CAR 04 was raised as grid connected power plants and location of meters was not described in the project boundary. For detailed resolution refer findings section of the Protocol.	CAR-04 OK

Gases And Sources Included In The Project Boundary						
	Source	Gas	Inc./Exc. Pdd	Justification PDD	Steps Taken To Assess PDD Justification	Conclusion
BASELINE	CO ₂ emission from electricity generation in fossil fuel fired power plants that is displaced due to the project activity	CO ₂	Included	Main emission source	As CO ₂ is the main emission source, hence inclusion of this gas in project boundary is appropriate.	OK
		CH ₄	Excluded	Minor emission source	CH ₄ emissions would be minor in nature. Hence it is appropriate to exclude this gas.	OK
		N ₂ O	Excluded	Minor emission source	N ₂ O emissions would be minor in nature. Hence it is appropriate to exclude this gas.	OK
PROJECT	For geothermal power plants, fugitive emissions of CH ₄ and CO ₂ from non-condensable gases contained in geothermal steam	CO ₂	Excluded	As per ACM 0002 project emissions are not considered for wind power project.	The project is not a geothermal power plant	OK
		CH ₄	Excluded	As per ACM 0002 project emissions are not considered for wind power project.	The project is not a geothermal power plant	OK
		N ₂ O	Excluded	As per ACM 0002 project emissions are not considered for wind power project.	The project is not a geothermal power plant	OK
	CO ₂ emissions from combustion of fossil fuels for electricity generation in solar thermal power plants and geothermal power plants	CO ₂	Excluded	As per ACM 0002 project emissions are not considered for wind power project.	Validation team confirmed from site visit and its sectoral expertise that there will not be any fossil fuel consumption by the project plant.	OK
		CH ₄	Excluded	As per ACM 0002 project emissions are not considered for wind power project.	The project is not a solar thermal or geothermal power plant	OK
		N ₂ O	Excluded	As per ACM 0002 project emissions are not considered for wind power project.	The project is not a solar thermal or geothermal power plant	OK
	For hydro power plants, emissions of CH ₄ from the reservoir	CO ₂	Excluded	As per ACM 0002 project emissions are not considered for wind	The project is not a hydro power plant	OK

Gases And Sources Included In The Project Boundary						
	Source	Gas	Inc./Exc. Pdd	Justification PDD	Steps Taken To Assess PDD Justification	Conclusion
				power project.		
		CH ₄	Excluded	As per ACM 0002 project emissions are not considered for wind power project.	The project is not a hydro power plant	OK
		N ₂ O	Excluded	As per ACM 0002 project emissions are not considered for wind power project.	The project is not a hydro power plant	OK

	Validated situation	Conclusion
SECTION 6b. Baseline scenario identification and description.		
1. Determine whether the PDD provides a verifiable description of the 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 CDM project activity.	<p>The project activity involves installation of new grid-connected wind power plant.</p> <p>Hence, in accordance with the applied methodology, i.e. ACM0002 Version 12.3.0, 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".</p>	OK
2. Confirm that any procedure contained in the methodology to identify the most reasonable baseline scenario, has been correctly applied.	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>	OK
3. Check each step in the procedure described in the PDD to identify the baseline scenario against the requirements of the methodology. (Note that if the methodology requires use of tools, that is, such as the tool for the demonstration and assessment of additionality and the combined tool to identify the baseline scenario and demonstrate additionality, the guidance in the methodology shall supersede it in the tool.)	The applied methodology ACM0002, Version 12.3.0 prescribes the baseline. Therefore, no further analysis was done in accordance with paragraph 115 of the VVS.	OK
4. Based on financial expertise and local and sectoral knowledge, determine whether all scenarios that are considered by the project participants and are supplementary to those required by the methodology, are reasonable in the context of the proposed CDM project activity and that no reasonable alternative scenario has been excluded. Use the table below for this purpose:	The applied methodology ACM0002, Version 12.3.0 prescribes the baseline. Therefore, no further analysis was done in accordance with paragraph 115 of the VVS.	OK

Alternative Scenario Ref.	Description in the PDD	Cross-checked with	Validation Opinion

5. Determine whether the baseline scenario identified is reasonable by validating the assumptions, calculations and rationales used, as described in the PDD. It shall be ensured that documents and sources referred to in the PDD are correctly quoted and interpreted. Cross check the information provided in the PDD with other verifiable and credible sources, such as local expert opinion. The table above may be used for this purpose.	Baseline used in the PDD is as prescribed by the methodology for grid connected new renewable energy project. This baseline scenario has been prescribed by the applied methodology; therefore, no further analysis was done.	OK
6. Is the identified baseline scenario in line with regulatory or legal requirements and does it take into account relevant national and/or sectoral policies?	The baseline identified is electricity generated from grid connected power plants which is in accordance with the regulatory and legal requirements.	OK
7. If applicable, identify the type of national and/or sectoral policies: <ul style="list-style-type: none"> - E+: Those adopted after the adoption of the Kyoto Protocol (11 December 1997) shall not be taken into account in identifying the baseline scenario. Please describe how the baseline scenario refers to the hypothetical situation without these national and or sectoral policies. - E-: Those adopted after the adoption of the M&P for a CDM (11 November 2001) shall not be taken into account in identifying the baseline scenario. Please describe the hypothetical situation without these national and/or sectoral regulations being taken into account for the baseline identification. 	No E+/E- national and/or sectoral policies are identified	OK
8. Is this identification supported by official and/or verifiable documents (for example, studies, web pages, certificates, etc)?	NA	-

	Validated situation	Conclusion
SECTION 6c. Algorithms and/or formulae used to determine emission reductions		
<p>1. Compare the equations and parameters in the PDD to those in the selected approved methodology and determine if they have been correctly applied to calculate project emissions, baseline emissions, leakage, and emission reductions.</p> <p>Confirm that adequate justification has been provided for selection between different options.</p>	<p>Emission reductions</p> <p>As provided in the methodology, emission reduction is calculated from the equation: $ER_y = BE_y - PE_y$</p> <p> BE_y: Baseline emissions in the year y (tCO₂e/y) PE_y: Project emissions in the year y (tCO₂e/y) ER_y: Emission Reductions in the year y (tCO₂e/y) </p> <p>Project emissions (PE_y)</p> <p>As per the applicable methodology, the project emissions are applicable only for geothermal power plants or hydro power plant hence, the PP has not considered the project emissions and is considered zero, $PE_y = 0$.</p> <p>As no project emission (PE_y) is considered for the project activity, the estimated baseline emission (BE_y) becomes the emission reduction (ER_y), i.e; $PE_y = 0$ Thus, $ER_y = BE_y$</p> <p>Baseline emissions</p> <p>According to the applied methodology, for new grid connected renewable power plant, the baseline emissions are the product of electricity produced by renewable energy generating unit multiplied by the emission factor of the grid.</p> <p> $BE_y = EG_{PJ,y} \times EF_{grid,CM,y}$ $EG_{PJ,y}$ = Quantity of net electricity supplied to the grid by the project activity in year y (MWh). $EF_{grid,CM,y}$ = Combined margin CO₂ emission factor in year y (tCO₂/MWh). </p> <p>Further, since the project is a new grid-connected renewable power plant, the</p> <p>$EG_{PJ,y} = EG_{facility,y}$</p>	<p>CAR-09 OK</p>

	Validated situation	Conclusion
	<p>Where:</p> <p>$EG_{PJ,y}$ Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the CDM project activity in year y (MWh/yr)</p> <p>$EG_{facility,y}$ Quantity of net electricity generation supplied by the project plant/unit to the grid in year y (MWh/yr)</p> <p><u>Calculation of the emission factor</u></p> <p>The baseline emission factor is calculated as a Combined Margin (CM) consisting of Operating Margin (OM) and Build Margin (BM) factors based on data from an official source publicly available. The CM emission factor (EF) for the displaced electricity was calculated based on the 'Tool to calculate the emission factor for an electricity system' Version 02.2.1 (hereinafter referred to as "the tool"), in accordance with the applied methodology. This is the currently active version of the tool available in EB 63.</p> <p>The PP uses the EF for the grid electricity as calculated in CO₂ Baseline Database for the Indian Power Sector published by the Central Electricity Authority (CEA), Ministry of Power, Government of India. The CEA publishes on an annual basis the General Review and the Performance Review of Thermal Power Stations which is used by the majority of CDM project promoters. The database for baseline estimation issued by the CEA has been developed consistently with the availability of data in India. The database is an official publication of the Government of India for the purpose of CDM baselines. The CEA Database Version 6.0 has been applied as it was current at the time of submission of the CDM-SSC PDD for validation. The step wise estimation of CM EF is provided as below:</p> <p>Step 1 of the <i>tool</i> requires identification of the relevant electric power system. In line with the requirements specified in the tool, the PP has selected the regional grid based on the spatial extent of the power plants that are physically connected through transmission and distribution lines to the project activity. The Indian electricity system is divided into two grids, the Integrated Northern, Eastern, Western, and North-Eastern regional grids (NEWNE) and the Southern Grid. Each grid covers several states. Since the project activity is located in the Western region, the selection of the NEWNE Grid for the purpose of estimation</p>	

	Validated situation	Conclusion												
	<p>of baseline emission factor is considered appropriate. Therefore, the validation team confirmed the applicability of Step 1 of the <i>tool</i>.</p> <p>Step 2 of the <i>tool</i> gives the PP an option to include off-grid power plants in the project electricity system. The PP has chosen only grid power plants for analysis.</p> <p>Step 3 of the <i>tool</i> requires selection of a method for estimation of operating margin. Of the four methods provided in the <i>tool</i> for calculating the operating margin ($EF_{grid,OM,y}$), the PP has selected simple OM method since the low-cost/must-run resources constitute less than 50% of total grid generation on average of the five most recent years, i.e. from 2005-06 to 2009-10.</p> <table><tr><th>Year</th><th>Low-cost/must-run resources of net generation</th></tr><tr><td>2005-06</td><td>17.95%</td></tr><tr><td>2006-07</td><td>18.46%</td></tr><tr><td>2007-08</td><td>19.04%</td></tr><tr><td>2008-09</td><td>17.41%</td></tr><tr><td>2009-10</td><td>15.94%</td></tr></table> <p>Low operating cost/must run resources include hydro and nuclear.</p> <p>The tool provides two options – (i) ex-ante option and (ii) ex-post option in calculating the simple OM. The PP has chosen the ex-ante option for determining the OM. This choice of ex-ante option which is based on a 3-year generation-weighted average, based on the most recent data available at the time of submission of the CDM-PDD to the DOE for validation, was found acceptable in view of the availability of the requisite data vintages.</p> <p>Step 4 of the <i>tool</i> requires the calculation of the operating margin emission factor according to the Simple OM method chosen as per Step 3 above. In validating Step 3, LRQA confirmed the calculations with respect to the OM emission factor for the last three years for the NEWNE Grid and arrived at the following summary:</p>	Year	Low-cost/must-run resources of net generation	2005-06	17.95%	2006-07	18.46%	2007-08	19.04%	2008-09	17.41%	2009-10	15.94%	
Year	Low-cost/must-run resources of net generation													
2005-06	17.95%													
2006-07	18.46%													
2007-08	19.04%													
2008-09	17.41%													
2009-10	15.94%													

Validated situation					Conclusion								
	Year	Absolute emissions (including imports) (tCO ₂)	Net generation (including imports) (GWh)	Specific emissions (tCO ₂ /MWh)									
	2007-08	410,084,551	410,124	0.99990									
	2008-09	430,502,442	427,700	1.00655									
	2009-10	453,067,520	463,384	0.97774									
<p>EF_{gridOM}= (410,084,551 + 430,502,442 + 453,067,520)/ (410,124 + 427,700 + 463,384) x1000</p> <p>= 0.9941 tCO₂/MWh</p> <p>Step 5 of the <i>tool</i> requires calculation of the build margin emission factor. The CEA database provides a BM value for the NEWNE grid as 0.8123. As part of validation of Step 5 of the tool, LRQA confirmed the BM for the year 2009-10 as per the following summary:</p> <table> <tr> <td>Year</td> <td>Absolute emissions (tCO₂)</td> <td>Net Generation (GWh)</td> <td>Specific emissions (tCO₂/MWh) BM</td> </tr> <tr> <td>2009-10</td> <td>88,593,337</td> <td>109,063.91</td> <td>0.8123</td> </tr> </table> <p>Step 6 of the <i>tool</i> requires calculation of the combined margin emission factor as per the following equation:</p> <p>EF_{grid,CM,y} = EF_{grid,OM,y} X W_{OM} + EF_{grid,BM,y} X W_{BM}</p> <p>According to the guidance on selecting alternative weights in the tool, the default</p>						Year	Absolute emissions (tCO ₂)	Net Generation (GWh)	Specific emissions (tCO ₂ /MWh) BM	2009-10	88,593,337	109,063.91	0.8123
Year	Absolute emissions (tCO ₂)	Net Generation (GWh)	Specific emissions (tCO ₂ /MWh) BM										
2009-10	88,593,337	109,063.91	0.8123										

	Validated situation	Conclusion														
	<p>weights applicable for wind projects are $w_{OM} = 0.75$ and $w_{BM} = 0.25$ for the first and subsequent crediting period have been applied.</p> <p>The baseline grid emission factor has been calculated as; $EF_{grid,CM,y} = 0.9486 \text{ tCO}_2\text{e/MWh}$</p> <p>The baseline emissions thus can be estimated as: $BE_y = EG_{facility,y} \times EF_{grid,CM,y}$ $= 196,363 \text{ MWh} \times 0.9486 \text{ tCO}_2\text{e/MWh}$ $= 186,270 \text{ tCO}_2\text{e/annum}$</p> <p>Emission reductions The annual emission reductions from the project activity can be estimated as the difference between the baseline emissions and the project emissions as follows: $ER_y = BE_y - PE_y$</p> <p>$ER_y = 186,270 - 0 = 186,270 \text{ tCO}_2\text{e/annum}$</p> <p>The average annual emission reduction is 186,270 tCO₂e over 10 year fixed crediting period.</p> <p>CAR 09 was raised as stepwise approach for calculation of grid emission factor was not presented in section B.6.1, incorrect reference of the tool and emission reduction value inconsistent between the PDD and spreadsheet. For detailed resolution refer findings section of the Protocol.</p>															
<p>2. Verify the justification given in the PDD for the choice of data and parameters used in the equations to determine estimated emission reductions.</p> <p>If data and parameters will not be monitored throughout the crediting period and will remain fixed, assess that all data sources and assumptions are appropriate and calculations are correct, applicable to the proposed CDM project activity and will result in a conservative estimate of the emission reductions.</p>	<table><tr><th>Data/Parameter title: $EF_{grid,OM,y}$</th><th>Comments</th></tr><tr><td>Title in line with methodology?</td><td>Yes</td></tr><tr><td>Fixed throughout the crediting period?</td><td>Yes, determined ex-ante</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes, tCO₂/MWh</td></tr><tr><td>Appropriate description of parameter?</td><td>Yes</td></tr><tr><td>Source clearly referenced?</td><td>Yes</td></tr><tr><td>Value provided is considered reasonable?</td><td>Yes, 0.9941</td></tr></table>	Data/Parameter title: $EF_{grid,OM,y}$	Comments	Title in line with methodology?	Yes	Fixed throughout the crediting period?	Yes, determined ex-ante	Data unit correctly expressed?	Yes, tCO ₂ /MWh	Appropriate description of parameter?	Yes	Source clearly referenced?	Yes	Value provided is considered reasonable?	Yes, 0.9941	OK
Data/Parameter title: $EF_{grid,OM,y}$	Comments															
Title in line with methodology?	Yes															
Fixed throughout the crediting period?	Yes, determined ex-ante															
Data unit correctly expressed?	Yes, tCO ₂ /MWh															
Appropriate description of parameter?	Yes															
Source clearly referenced?	Yes															
Value provided is considered reasonable?	Yes, 0.9941															

	Validated situation		Conclusion
<p>If data and parameters will be monitored on implementation and hence become available only after validation of the project activity, confirm that the estimates provided in the PDD for these data and parameters are reasonable.</p> <p>List all data and parameters provided in the PDD in the tables in next column.</p>	Has this value been verified?	Yes, from the CO ₂ baseline database for Indian Power sector, version 06	
	Choice of data correctly justified?	Yes	
	Measurement method correctly described?	N.A.	
	Data/Parameter title: EF_{grid,BM,y}	Comments	
	Title in line with methodology?	Yes	
	Fixed throughout the crediting period?	Yes, determined ex-ante	
	Data unit correctly expressed?	Yes, tCO ₂ /MWh	
	Appropriate description of parameter?	Yes	
	Source clearly referenced?	Yes	
	Value provided is considered reasonable?	Yes, 0.8123	
	Has this value been verified?	Yes, from the CO ₂ baseline database for Indian Power sector, version 06	
	Choice of data correctly justified?	Yes	
	Measurement method correctly described?	N.A.	
	Data/Parameter title: EF_{grid,CM,y}	Comments	
	Title in line with methodology?	Yes	
	Fixed throughout the crediting period?	Yes, determined ex-ante	
	Data unit correctly expressed?	Yes, tCO ₂ /MWh	
	Appropriate description of parameter?	Yes	
	Source clearly referenced?	Yes	
	Value provided is considered reasonable?	Yes, 0.9486	
	Has this value been verified?	Yes, from the CO ₂ baseline database for Indian Power sector, version 06	
	Choice of data correctly justified?	Yes	
	Measurement method correctly described?	N.A.	
	Data/Parameter title: EG_{facility,y}	Comments	
	Title in line with methodology?	Yes	

	Validated situation		Conclusion
	Fixed throughout the crediting period?	No, monitored ex-post	
	Data unit correctly expressed?	Yes, MWh/year	
	Appropriate description of parameter?	Yes	
	Source clearly referenced?	Yes	
	Value provided is considered reasonable?	Yes, 196,363	
	Has this value been verified?	Yes	
	Choice of data correctly justified?	N.A.	
	Measurement method correctly described?	Yes	
3. Confirm that all assumptions and data used by PPs are listed in the PDD including their references and sources, and that the documentation used as the basis for these assumptions and source of data is correctly quoted and interpreted in the PDD. If the project activity has both A/R and non A/R components, ensure that no emissions associated with the A/R activity are accounted for.	The PP has correctly sourced the grid emission factor data from the CO ₂ baseline database for Indian power sector, Version 06. Validation team confirms that all assumptions and data used by the PP is listed in the PDD including their references and sources, and that the documentation used as the basis of these assumptions and sources of data is correctly quoted and interpreted in the PDD. Validation team confirmed from the site visit and its sectoral expertise that the project activity does not have any A/R component.		OK
4. Confirm that all estimates of the baseline emissions can be replicated using the data and parameter values provided in the PDD.	The baseline emissions can be replicated using the data and parameter and could be confirmed from the emission reduction spreadsheet submitted by the PP.		OK
5. If any of the parameters used to calculate ERs have been obtained using sampling methods, please use the "Standard for sampling and surveys for CDM project activities and PoA" paragraphs 20 to 26 to determine whether the sampling plan proposed by the PPs will provide parameter value estimates in an unbiased and reliable manner. Provide the following data for each parameter in the sampling plan: - The size of the sample: n - The acceptance number: c	There are no parameters obtained from sampling methods.		OK

	Validated situation	Conclusion
SECTION 7. Additionality of a project activity		
1. Does the PDD clearly describe how the proposed CDM project activity is additional?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	OK
2. List the documents and tools provided by the CDM Executive Board used to demonstrate the additionality	Following documents were referred to determine additionality: <ul style="list-style-type: none">▪ Tool for demonstration and assessment of additionality, Version 06.0.0▪ Guidelines on the assessment of investment analysis, Version 05▪ Guidelines on the demonstration and assessment of prior consideration of the CDM, Version 04	OK
<u>Additionality for small-scale project activities</u>		
Determine whether the proposed project activity is additional in accordance with CDM requirements applicable for small-scale project activities: Attachment A to Appendix B of 4/CMP 1 annex II and “non binding best practice examples to demonstrate additionality for SSC project activities”		
3. Describe and assess the relevant criteria for the automatic additionality of the following cases: <ul style="list-style-type: none">a) Type I project activities up to 5 MW that employ renewable energy as their primary technology,b) Type II energy efficiency project activities that aim to achieve energy savings at a scale of no more than 20 GWh per year,c) Type III project activities that aim to achieve emissions reductions at a scale of no more than 20 ktCO₂e per year.	NA	-

Validated situation		Conclusion
SECTION 7a. Prior consideration of the clean development mechanism		
1. Does the PDD clearly indicate the start date of the project activity in format: dd/mm/yyyy, and is it in line with the Glossary of CDM Terms?	<p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>Start date of the project activity is 01/03/2011, the earliest date on which the Purchase orders for the supply of power transformers were placed by the PP and thereby the PP has committed to expenditures related to implementation of the project. LRQA has validated the start date in accordance with Glossary of CDM terms version 07, through the review of following documents:</p> <ul style="list-style-type: none"> ▪ Purchase order for supply of 2 220/33KV 100MVA transformer, Ref: 66000036 dated: 01/03/2011 ▪ Purchase order for supply of 220KV circuit breakers, 220KV and 33KV isolators, Ref: 66000037 dated: 01/03/2011 ▪ Work order for erection, testing and commissioning of electrical equipment and systems, Ref: 55000028 dated: 14/03/2011 ▪ Purchase order for supply of material for transmission lines etc. Ref: 66000042 dated: 14/03/2011 ▪ Purchase order for supply of Electrical equipment and system, Ref: 66000040 dated: 15/03/2011 ▪ Contract for supply of WTG dated: 04/05/2011 ▪ Contract for power generation services dated: 04/05/2011 ▪ Purchase order for supply of 33 33KV/690V 1800KVA transformer, Ref: 66000043, dated: 13/05/2011 ▪ Purchase order for supply of 32 33KV/690V 1800KVA transformer, Ref: 66000044 dated: 25/05/2011 ▪ Work order for erection testing and commissioning of 220KV transmission lines, Ref: 55000032 dated: 18/06/2011 ▪ Purchase order for supply of material for 220KV, Extra high voltage (EHV) transmission lines, Ref: 66000041 dated: 18/06/2011 ▪ Amended purchase order for 33KV circuit breakers, Ref: 66000038-RO1 dated: 25/06/2011 ▪ Work order for erection, testing and commissioning of fibre optic cable, 	CAR-05 OK

	Validated situation	Conclusion
	<p>Ref: 55000036 dated: 15/07/2011</p> <ul style="list-style-type: none"> ▪ Purchase order for supply of 15 km Low Tension (LT) cable, Ref: 66000047 dated: 22/07/2011 ▪ Purchase order for supply of 5km LT cable, Ref: 66000048 dated: 23/08/2011 ▪ Amended work order for erection, testing and commissioning of 33KV equipment, transmission lines etc. Ref: 55000031(R-1) dated: 05/10/2011 ▪ Amended work order for general civil works for substation, Ref: 55000030-A dated: 22/10/2011 ▪ Amended purchase order for 33KV circuit breakers, Ref: 66000038-RO2 dated: 21/11/2011 ▪ Amended purchase order for supply of 33KV circuit breakers, Ref: 66000039(R-3) dated: 21/11/2011 ▪ Amended purchase order for 220KV circuit breaker, Ref: 66000037(R-3), dated: 20/12/2011 ▪ Operation and maintenance agreement dated: 14/07/2011 <p>CAR-05 was raised as date of earliest action was confirmed to be on 01/03/2011 based on purchase order for transformer. For detailed resolution refer findings section of the Protocol.</p>	
<p>If the PDD was published for Global Stakeholder Consultation process after the start date, check that the CDM benefits were considered necessary in the decision to undertake the project activity as a CDM project, following the below queries.</p>		
<p>2. For a project activity with a start date on or after the 02 August 2008, confirm that the PPs have informed the host party DNA and the UNFCCC secretariat in writing of their intention to seek CDM Status.</p> <p>If such a notification has not been provided by the PPs within 180 days of the project activity start date, determine that the CDM was not seriously considered in the decision to implement the project activity.</p>	<p>The PP has intimated the DNA of India and UNFCCC secretariat on 27/04/2011. Validation team confirmed the notification from the email sent by the PP to the DNA of India dated: 27/04/2011, and list of notifications at UNFCCC website. Validation team also confirmed the project description and location details from the F-CDM-Prior Consideration form dated 27/04/2011 submitted by the PP.</p>	OK
<p>For a project activity with a start date before 02 August 2008</p>		

	Validated situation	Conclusion
<p>3. Check the following requirements through document reviews to assess the PPs prior consideration of the CDM:</p> <ul style="list-style-type: none"> (a) Evidence that must indicate that awareness of the CDM before the project activity start date, and that the benefits of the CDM were a decisive factor in the decision to proceed with the project. (b) Reliable evidence from project participants that must indicate that continuing and real actions were taken to secure CDM status for the project in parallel with its implementation. 	NA	-
<p>4. Describe the process for cross-checking the evidence. The assessment of real and continuing actions should focus on real documented evidence, including an assessment of the authenticity of the evidence, that is, letters, email exchanges and other documented communications. These shall be considered as evidence only after assessing the reliability and authenticity of them, inter alia through cross-checking (for example, interviews)</p>	NA	-
<p>5. The time gap between the documented evidence of prior CDM consideration and continuing and real actions shall be within the following period:</p> <ul style="list-style-type: none"> a) Less than two years: continuing and real actions were taken to secure CDM status for the project activity; b) Greater than two years and less than three years: justify any positive or negative validation opinion based on the context of the evidence and information assessed; c) Greater than three years: continuing and real actions were not taken. 	NA	-

	Validated situation	Conclusion
6. If authentic evidence to support the serious prior consideration of the CDM as indicated above is not available, determine that the CDM was not considered in the decision to implement the project activity	NA	-

	Validated situation		Conclusion	
SECTION 7b. Identification of alternatives				
<p>1. Does the PDD identify credible alternatives to the project activity, to determine the most realistic baseline scenario?</p> <p>Assess this list of alternatives and ensure that:</p> <p>(a) The list of alternatives includes as one of the options that the project activity is undertaken without being registered as a proposed CDM project activity.</p> <p>(b) The list contains all plausible alternatives considered to be viable means of supplying the outputs or services that are to be supplied by the proposed CDM project activity.</p> <p>(c) The alternatives comply with all applicable and enforced legislation.</p> <p>If the Baseline scenario is prescribed in the approved methodology, no further analysis is required and this section is not applicable.</p>	LIST OF ALTERNATIVES		OK	
	No	Description in the PDD		Describe why it is credible and complete
	1	Implementation of the project activity not undertaken as a CDM project activity		This alternative is considered as credible and complete, as per the additionality tool
	2	No project activity; Continuation of current situation		This alternative is considered as credible and complete, as per the additionality tool
		The baseline determined by the applied methodology is no investment in the project activity and electricity sourced from grid connected power plants.		

	Validated situation	Conclusion								
SECTION 7c. Investment analysis										
1. Verify the accuracy of financial calculations carried out for the investment analysis: (a) Conduct a thorough assessment of all parameters and assumptions used in calculating the relevant financial indicator, and determine the accuracy and suitability of these parameters. (b) Cross-check the parameters against third-party or publicly available sources, such as invoices or price indices. (c) Review feasibility reports, public announcements and annual financial reports related to the proposed CDM project activity and the project participants.	<p>All the relevant parameters are sourced from project feasibility study report, tariff order, and local taxation laws. Validation team confirmed these parameters from the review project feasibility study report, tariff order and host country expertise on taxation laws.</p> <p>Team confirmed the investment decision date from the review of Board minutes dated: 23/02/2011. To confirm the board minutes, team visited the PP's office and confirmed that board minutes were kept in a bound manuscript, detailing the investment decision.</p> <p>The investment analysis has been applied for the technical lifetime of the project. Depreciation has correctly not been accounted in cash-flow calculations. Project feasibility report dated: 22/02/2011 was the source of input values to investment analysis and was available at the time of investment decision.</p> <p>All the investment analysis spreadsheets are in readable formats and all relevant cells are viewable and unprotected.</p> <p>Validation of input values has been presented below.</p> <p>CAR-06 was raised on the suitability of input values. For detailed resolution refer findings section of the Protocol.</p>	CAR-06 OK								
2. Assess the correctness of computations carried out and documented by the project participants	Post tax project IRR for the project activity is 9.40%. Based on the host country expertise and from the review of investment analysis spreadsheet, validation team confirms that it has been computation has been correctly carried out and documented.	OK								
3. Assess the sensitivity analysis by the project participants to determine under what conditions variations in the result would occur, and the likelihood of these conditions.	<p>Summary of the sensitivity analysis is below.</p> <table><tr><td></td><td>-10%</td><td>+10%</td><td>Cross over point</td></tr><tr><td>Project Cost</td><td>11.15%</td><td>7.90%</td><td>-15.13%</td></tr></table>		-10%	+10%	Cross over point	Project Cost	11.15%	7.90%	-15.13%	OK
	-10%	+10%	Cross over point							
Project Cost	11.15%	7.90%	-15.13%							

Validated situation				Conclusion
Capacity Utilisation Factor (CUF) ⁷	7.48%	11.17%	15.87%	
Tariff rate	7.50%	11.15%	16.12%	
O&M cost	9.76%	9.02%	-81.72%	
<p>Project cost: The project is currently under construction. The actual contracted cost of the project activity at the time of validation is 6678.29 Million INR based on the purchase orders and agreements. The contracted cost during validation is about 7% lower than the estimated project cost considered during investment decision. Therefore, reduction in project cost by 15.13% is not likely to happen.</p> <p>CUF: The CUF has been sourced from wind study report prepared by third party based on the wind availability data sourced from the actual wind mast installed at the project site. The project site falls under Wind Zone-1 where PLF of 20% is described by the regulatory agency, whereas project activity considers PLF of 22.83%. Therefore, an increase of 15.87% over the estimated generation is unlikely to happen.</p> <p>Tariff rate: The project is still under construction and PPA has not yet been signed. Based on the latest MERC tariff order dated: 30/03/2012, the tariff rate applicable for the project activity will be 5.67 INR/kWh. This tariff rate is about 6.38% higher than that considered during the investment decision. Therefore, an increase in tariff rate by 16.12% is not likely to happen.</p> <p>O&M cost: The offer by GE dated: 10/02/2011 mentions O&M cost of 2.37Million INR/WTG/year. Validation team confirmed from its host country and sectoral expertise that O&M cost of INR 2.37 Million/WTG/year is reasonable. Further, a decrease in O&M cost by 81.72% is not likely to happen considering high inflation in the host country.</p>				

⁷ Capacity Utilisation Factor (CUF) and Plant Load Factor (PLF) has been interchangeably used by the PP.

Use the table below to list all the inputs to the investment analysis and to describe how each parameter has been validated:

Parameter/input	Symbol/Unit	Value	Source	Means of validation	Conclusion
Total WTG capacity	MW	100.80	Project Feasibility report	Validation team confirmed the total project capacity from the review of project feasibility report, contract for supply of WTG dated: 04/05/2011, contract for generation services, dated: 04/05/2011	OK
Project cost	Million INR	7010.8	Project Feasibility report	Validation team confirmed the project cost from the review of project feasibility study report. Team further confirmed the suitability of input values from the host country and sectoral expertise of the team. Team confirmed the firm cost based on firm purchase orders/agreements is INR 6678.29 Millions. The project is not yet commissioned and the actual cost is likely to increase. However, even if a cost of INR 6678.29 millions is considered, the IRR is still well below the benchmark.	OK
Land and site development	Million INR	332	Project Feasibility report	Validation team confirmed the land and site development cost from the review of project feasibility study report. Team confirmed the suitability of land and site development cost from the review of land sale deeds, and work orders for infrastructure. The project is still under progress and the actual cost towards land at the time of validation is INR 283.3 Millions. Team confirms the suitability of land and site development from its host country and sectoral expertise.	OK
Substation and other infrastructure	Million INR	737.49	Project Feasibility report	Validation team confirmed the substation and other infrastructure cost from the review of project feasibility study report. Team confirmed the suitability of substation and other infrastructure cost from the purchase orders and work orders towards equipment of substation and construction. The project is still under progress and the actual cost towards substation and other infrastructure at the time of validation is INR 768.1 Millions. Team confirms the suitability of substation and other	OK

Parameter/input	Symbol/Unit	Value	Source	Means of validation	Conclusion
				infrastructure from its host country and sectoral expertise.	
WTG with foundation	Million INR	537.201	Project Feasibility report	<p>Validation team confirmed the WTG cost from the review of project feasibility study report.</p> <p>Team confirmed the suitability of WTG cost from the review of agreement with General Electrical. The project is still under progress and the actual cost towards WTG with foundation at the time of validation is INR 5168.6 Millions.</p> <p>Team confirms the suitability of WTG with foundation from its host country and sectoral expertise.</p>	OK
Statutory payments	Million INR	101.1	Project Feasibility report	<p>Validation team confirmed the statutory payments from the review of project feasibility study report.</p> <p>Team confirmed the suitability of statutory payments from the review of letter to statutory body and payment receipts. The actual cost for clearance of 25MW wind project INR 24.1 Millions, equivalent to INR 97.171 Millions for the project activity.</p> <p>Team confirms the suitability of statutory payments from its host country and sectoral expertise.</p>	OK
Other costs	Million INR	147.12	Project Feasibility report	<p>Validation team confirmed the other costs from the review of project feasibility study report.</p> <p>Team confirmed that other costs include contract negotiations, private equity charges, project management cost, cost of team members, and insurance.</p> <p>Team confirmed the suitability of other costs from the insurance policies, invoices raised by Lawyer and Berkley Energy. The project is under construction and actual cost covered under this head is INR 78.759 Millions.</p> <p>Team confirms the suitability of other costs from its host country and sectoral expertise.</p>	OK
Financing cost	Million INR	321.076	Project Feasibility	Validation team confirmed the financing cost from the review	OK

Parameter/input	Symbol/Unit	Value	Source	Means of validation	Conclusion
including IDC			report	<p>of project feasibility study report.</p> <p>Team confirmed the suitability of financing cost from the review of letter and invoices raised by Standard Chartered Bank and Rabo bank. The project is under construction and actual cost covered under this head is INR 143.627 Millions.</p> <p>Team confirms the suitability of financing including IDC from its host country and sectoral expertise.</p>	
Plant Load Factor	%	22.238	Project Feasibility report	<p>Validation team confirmed the PLF from the review of project feasibility report.</p> <p>Team confirmed the suitability of the PLF from the review of study report prepared by GL Garrad Hassan, a third party. This evidence was in accordance with paragraph 3(b) of "Guidelines for the reporting and validation of plant load factors" (Version 01). The PLF study report mentions the same PLF as mentioned in the project feasibility report.</p>	OK
Derating	%	5	Project Feasibility report	<p>Validation team confirmed the derating from the review of project feasibility report.</p> <p>Team confirmed the suitability of derating in wind turbine efficiency from the review of MERC tariff order dated: 14/07/2010. The tariff order describes derating of 5% after 10 year.</p> <p>Validation team confirms the suitability of derating from its host country and sectoral expertise.</p>	OK
Insurance premium	INR million/annum	10.0	Project Feasibility report	<p>Validation team confirmed the insurance premium from the review of project feasibility report.</p> <p>Team confirmed the suitability of insurance premium as follows: MERC tariff order dated: 24/11/2003 prescribes the insurance cost as 0.5% of the project cost. The PP has considered 10 Million INR towards annual insurance cost, which is about 0.14% of the project cost. Therefore, team</p>	OK

Parameter/input	Symbol/Unit	Value	Source	Means of validation	Conclusion						
				confirms that insurance premium is appropriate and conservative. Further, suitability of insurance premium is also confirmed from the sector expertise of the validation team.							
O & M cost	INR million/WTG/year	2.37	Project Feasibility report	Validation team confirmed the O&M cost from the review of project feasibility report. Suitability of the O&M Cost was confirmed from the offer submitted by GE dated: 10/02/2011which mentions the cost as 2.37 Million INR/WTG. Since the project is not yet operational and O&M agreement is not signed. Validation team confirms the suitability of O&M cost from its host country and sectoral expertise.	OK						
Escalation in O & M	%	5.00	Project Feasibility report	Validation team confirmed the escalation in O&M cost from the review of project feasibility report. Team confirmed the suitability of escalation in O&M cost from the review of MERC tariff order dated: 14/07/2010. The MERC tariff order mentions escalation of 5.72%. Lower value of O&M cost escalation (5% considered by the PP when compared to 5.72% based on publicly available evidence) is conservative for additionality demonstration.	OK						
Admin cost	INR million/year	20.00	Project Feasibility report	Validation team confirmed the admin cost from the review of project feasibility report. Team confirmed the O&M from the review of following documents: <table><tr><th>Parameters</th><th>Value (Million INR/yr)</th><th>Remarks</th></tr><tr><td>O & M Charges for Balance of Plant consisting of 33</td><td>12.6</td><td>Refer Quote from Spark Electro Consultants India) Private Limited.</td></tr></table>	Parameters	Value (Million INR/yr)	Remarks	O & M Charges for Balance of Plant consisting of 33	12.6	Refer Quote from Spark Electro Consultants India) Private Limited.	OK
Parameters	Value (Million INR/yr)	Remarks									
O & M Charges for Balance of Plant consisting of 33	12.6	Refer Quote from Spark Electro Consultants India) Private Limited.									

Parameter/input	Symbol/Unit	Value	Source	Means of validation	Conclusion		
				Line & 33 KV Unit Substation.			
				Operating Team Cost at Site		2.27	Refer Note from HR department
				Operating Charges for the Wind Farm		5.13	Refer Quote from NP Associates
				Grand Total		20.0	
				Team confirmed from the interview of the PP that it covers O&M of balance of plant, team for management of operations and other operating changes. Validation team confirmed the suitability of admin cost from its sectoral and host country expertise.			
Escalation in admin cost	%	5.00	Project Feasibility report	Validation team confirmed the suitability of escalation in admin cost from its sectoral and host country expertise. Team also confirmed the suitability of escalation from general forecasted inflation in the host country. The team confirmed that the forecasted inflation is review of Survey of professional forecasters published on 02/02/2011 that general long term projected inflation rate is 6.6%. Therefore, considering 5% escalation is conservative for additionality.	OK		
Tariff rate	Rs./kWh	5.33	Project Feasibility report	Validation team confirmed the tariff rate from the review of Project feasibility study report. Validation team confirmed the suitability of the tariff rate from the review of MERC tariff order dated: 14/07/2010 available at the time of investment decision. The electricity tariff rate in the Tariff orders dated: 14/07/2010 is INR 5.07/kWh. Further, based on the latest MERC tariff order dated: 30/03/2012, the electricity tariff rate is INR 5.67/kWh. This tariff rate is about 5.67/kWh or about 6.38% higher than that considered during investment decision.	OK		

Parameter/input	Symbol/Unit	Value	Source	Means of validation	Conclusion
				It may be noted that tariff rate referred in the tariff orders are levelised tariff which is fixed for the PPA period. Therefore, no further (annual) escalation has been applied over this tariff rate.	
Generation Based Incentive (GBI)	INR/KWh	0.50	As per guidelines IREDA	Validation team confirms the suitability of the GBI incentives based on the rules of the host country and its host country expertise. Details of host country rules related to GBI scheme are available at http://www.ireda.gov.in/Wind.asp .	OK
GBI incentives	INR million/MW	1.55	As per guidelines IREDA		
GBI cap	INR million/annum	6.20	As per guidelines IREDA		
Debt		5027.68	Project Feasibility report	Validation team confirmed the debt from the review of project feasibility report. Team confirmed the suitability of debt component from the MERC tariff order dated: 14/07/2010. The tariff order describes debt: equity ratio of 70:30	OK
Equity	Million INR	2154.7	Project Feasibility report	Validation team confirmed the equity from the review of project feasibility report. Validation team confirmed suitability of equity component from the MERC tariff order dated: 14/07/2010. The tariff order describes debt:equity ratio of 70:30	OK
Repayment schedule	Years	10.00	Project report Feasibility	Validation team confirmed the loan repayment period from the review of project feasibility report. Team confirmed the suitability of loan repayment period from the MERC tariff order dated: 14/03/2012, which prescribes 10 year repayment period (section 2.4). Suitability of the loan repayment period was further confirmed from the sectoral and host country expertise of the team.	OK
Interest Rate	%	13.37%	Project report Feasibility	Validation team confirmed the interest rate from the review project feasibility report. Team confirmed from the MERC tariff order dated: 14/07/2010 which mentions that interest rate applicable for	OK

Parameter/input	Symbol/Unit	Value	Source	Means of validation	Conclusion
				<p>wind power project is 150 basis points above state bank advance rate (in section 3.6 on page no.28). Team confirmed the state bank advance rate at the time of investment decision was 12.75%⁸. Therefore, applicable interest rate for wind power project based on publicly available sources is 14.25%.</p> <p>The PP has used 13.37% as interest rate which is conservative. Team further confirms suitability of interest rate from its host country and sectoral expertise.</p>	
Depreciation rate	%	5.28	As adopted by the company in its books, SLM	Validation team confirmed the depreciation rate from web-search ⁹ and its host country expertise. The project has applied the depreciation rate from company's act mentioned in schedule XIV for continuous process plant under straight line method.	OK
Corporate Tax rate	%	33.218	Income Tax Act 2010-11	Validation team confirmed the corporate tax rate from web-search ¹⁰ and its host country expertise. The corporate tax is 30% base rate with 7.5% surcharge and 3% educational cess.	OK
MAT rate	%	19.93	IT act 2010-11	Validation team confirmed the MAT rate from web-search ¹⁰ and its host country expertise. The corporate tax is 18% base rate with 7.5% surcharge and 3% educational cess.	OK
Service tax	%	10.30	IT act2010-11	Validation team confirmed the service tax rate from web-search ¹¹ and its host country expertise. The corporate tax is 10% base rate with 7.5% surcharge and 3% educational cess.	OK

⁸ <http://in.reuters.com/article/2012/07/23/india-plr-idINL4E8IN3D320120723?type=companyNews>

⁹ <http://taxguru.in/company-law/rates-of-depreciation-under-the-companies-act-as-mentioned-in-schedule-xiv.html>

¹⁰ <http://taxguru.in/income-tax/tax-rate-applicable-for-a-y-2011-12-on-income-dividend-wealth-mat-stt-capital-gain-and-presumptive-income.html>

¹¹ <http://www.pgpatel.com/budget/BUDGE2010-11.pdf> (Refer page 13 for service tax)

	Validated situation	Conclusion
<p>4. Confirm the suitability of any benchmark applied in the investment analysis:</p> <p>(a) Determine whether the type of benchmark applied is suitable for the type of financial indicator presented.</p> <p>(b) Ensure that any risk premiums applied in determining the benchmark reflect the risks associated with the project type or activity.</p> <p>(c) Determine whether it is reasonable to assume that no investment would be made at a rate of return lower than the benchmark by, for example, assessing previous investment decisions by the project participants involved and determining whether the same benchmark has been applied or if there are verifiable circumstances that have led to a change in the benchmark.</p>	<p>The PP has correctly compared post-tax project IRR with Weighted Average Cost of Capital (WACC).</p> <p>WACC has been correctly calculated as weighted average of cost of equity and cost of debt. The calculation of WACC is as below:</p> $WACC = \frac{E}{V} * Re + \frac{D}{V} * Rd * (1 - Tc)$ <p>Where,</p> <p>E – Equity component of the project cost</p> <p>D – Debt component of the project cost</p> <p>V – Total investment in the project, i.e. E+D.</p> <p>Re- Return on equity</p> <p>Rd- Cost of debt</p> <p>Tc-Corporate tax rate</p> <p>PP has considered 70% debt and 30% equity. Validation team confirmed the debt equity ratio from the review of project feasibility report. Team confirmed the suitability of debt to equity ratio from the review of MERC tariff order dated: 14/07/2010.</p> <p>Tax rate is considered based on the host country rules. Validation team confirmed the corporate tax rate from web-search¹⁰ and its host country expertise. The corporate tax is 30% base rate with 7.5% surcharge and 3% educational cess. The corporate tax rate is 33.218%.</p> <p>Cost of debt used for calculation of WACC has been sourced from the MERC tariff order dated: 14/07/2010. Team confirmed from the MERC tariff order dated: 14/07/2010 which mentions that interest rate applicable for wind power project is 150 basis points above state bank advance rate (in section 3.6 on page no.28). Team confirmed the state bank advance rate at the time of investment decision was 12.75%. Therefore, applicable interest rate for wind power project based on</p>	<p>CAR-07 OK</p>

	Validated situation	Conclusion
	<p>publicly available sources is 14.25%⁸. The PP has used 13.37% as interest rate which is conservative.</p> <p>Cost of equity used for calculation of WACC has been calculated from Capital Asset Pricing Model (CAPM). The individual components for the CAPM are validated as follows.</p> <p>Risk free rate has been sourced from the yield on government bond in the monthly bulletin published on 12/01/2011 by Reserve Bank of India (RBI). The risk free rate presented is 8.392%</p> <p>PP has considered BSE-500 index as appropriate indicator of the market owing to its broad base covering all major sectors. For calculation of market return maximum period was considered from the date of inception of index, i.e. February 1999, to January 2011, available at decision making. Validation team confirms that this is the longest possible data available for the benchmark calculation. The market rate of return estimated for the project activity is 17.63%</p> <p>Risk profile or Beta of the power sector has been calculated by averaging the beta of all the companies listed on stock exchange and in the business of power generation. PP has correctly identified all companies in power sector to estimate beta. There are a total of 12 companies identified. The companies are:</p> <ol style="list-style-type: none"> 1. BF Utilities Limited 2. CESC Limited 3. Gujarat Industries Power company Limited 4. Jaiprakash hydro power Limited 5. NLC Limited 6. NTPC Limited 7. Reliance infrastructure Limited 8. Tata Power company Limited 9. Torrent Power Limited 10. GMR infrastructure Limited 11. GVK Power & infrastructure Limited 	

	Validated situation	Conclusion
	<p>12. Lanco infratech Limited</p> <p>The Beta value itself was computed for each of the 12 companies referred to above as the following ratio:</p> <p>Beta = COVAR (Stock Return, Market Return) /VAR(Market Return)</p> <p>COVAR (Stock return, market return) is the covariance of the individual stock of each of the 12 companies with respect to the market return.</p> <p>VAR (Market return) is the variance of the market return values</p> <p>There are no industry standards which prescribe the period / interval to be selected for computing the Beta. However, it is generally accepted from expert information (Ref: Mr. Aswath Damodaran Publication available on http://pages.stern.nyu.edu/~adamodar/pdfiles/acf3E/presentations/hurdlerate.pdf) available that data for a period of 2 to 5 years can be used for the computation of beta. The validation team refers to the publication (Ref: http://www.ba.metu.edu.tr/~adil/ba4829/Damodaran-beta.pdf) by Mr. Aswath Damodaran, a world wide acclaimed academician and expert on corporate finance, for guidance on the period that should be adopted as vintage for the calculation of the beta value.</p> <p>The extract from Aswath Damodaran's publication advises as follows :</p> <ul style="list-style-type: none"> • <i>Longer estimation period provides more data, but firms change.</i> • <i>Shorter periods can be affected more easily by significant firm-specific event that occurred during the period.</i> <p>Further, the extract of next publication advises:</p> <p><i>In choosing a time period for beta estimation, it is worth noting the trade off involved. By going back further in time, we get the advantage of having more observations in the regression, but this could be offset by the fact that the firm itself might have changed its characteristics, in terms of business mix and leverage, over that period. Our objective is not to estimate the best beta we can over the last period but to obtain the best beta we can for the future.</i></p> <p>Therefore, a period of 2 to 5 year is considered as reasonable. The PP has calculated beta for the period of 2, 3, 4 and 5 years; and considered minimum</p>	

	Validated situation	Conclusion																				
	<p>figure for computation of return on equity. This approach results in conservative benchmark therefore, considered appropriate by the team.</p> <p>Further, companies with very high beta, i.e. more than 2, have been excluded from analysis. From the above list Reliance infrastructure Limited and Lanco infratech Limited has not been considered due to high beta. This approach results in conservative return on equity estimate.</p> <p>The resultant beta is 1.23.</p> <p>The rate of return calculated for the project activity is 19.75%.</p> <p>The period of market return was inconsistent with the investment horizon. In order to confirm the suitability of return on equity, team reviewed the return on equity from other available indices. The summary of required rate of return with other indices are as below:</p> <table><tr><th>Index</th><th>Duration (in years)</th><th>Market return</th><th>Beta</th><th>Rate of return</th></tr><tr><td>BSE-SENSEX</td><td>31.88</td><td>17.59%</td><td>1.27</td><td>20.08%</td></tr><tr><td>BSE-100</td><td>26.87</td><td>15.88%</td><td>1.25</td><td>17.75%</td></tr><tr><td>BSE-200</td><td>20.87</td><td>15.80%</td><td>1.245</td><td>17.62%</td></tr></table> <p>From the above analysis, it can be concluded that choosing a larger period of market data, the rate of return varies from 20.08% to 17.62%. The rate of return considered by the PP for the project activity is 19.75% within the above range. Therefore, it can be considered that the rate of return considered by the project activity is considered reasonable.</p> <p>The WACC is calculated for the project activity is:</p>	Index	Duration (in years)	Market return	Beta	Rate of return	BSE-SENSEX	31.88	17.59%	1.27	20.08%	BSE-100	26.87	15.88%	1.25	17.75%	BSE-200	20.87	15.80%	1.245	17.62%	
Index	Duration (in years)	Market return	Beta	Rate of return																		
BSE-SENSEX	31.88	17.59%	1.27	20.08%																		
BSE-100	26.87	15.88%	1.25	17.75%																		
BSE-200	20.87	15.80%	1.245	17.62%																		

	Validated situation	Conclusion
	<p>WACC = 30% × 19.75% + 70% × 13.37% × (1 – 33.218%) = 12.18%</p> <p>Validation team confirms from the benchmark spreadsheet that calculations for CAPM and WACC have been correctly done.</p> <p>CAR 07 was raised on the corporate tax rate and source of risk free rate used for benchmark calculations. For detailed resolution refer findings section of the Protocol.</p>	
<p>5. If the project participants rely on values from a Feasibility Study Report (FSR) approved by any national authority, the team is required to ensure that:</p> <p>(a) The FSR has been the basis of the decision to proceed with the investment in the project, that is, that the period of time between the finalization of the FSR and the investment decision is sufficiently short for the DOE to confirm that it is unlikely in the context of the underlying project activity that the input values would have materially changed.</p> <p>(b) The values used in the PDD and associated annexes are fully consistent with the FSR and, where inconsistencies occur, the DOE should validate the appropriateness of the values.</p> <p>(c) On the basis of its specific local and sectoral expertise, confirmation is 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 decision.</p> <p>Use the table below to cross-check input values and describe here the results of the comparison.</p>	<p>Not applicable. The project participants do not rely on values from a Feasibility Study Report (FSR) approved by any national authority. The input values used in the investment analysis were independently validated above.</p>	-

Comparison to similar registered project in the region: Below table is not used as input values are not sourced from FSR that is approved by national authority.

CDM Ref	Investment cost	Tariff	O&M cost	Capacity	Output	Investment cost per	Load factor	O&M relative to	O&M per output
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						output		investment	

	Validated situation	Conclusion			
SECTION 7d. Barrier analysis					
1. Does the PDD demonstrate that the proposed project activity faces barriers that prevent its implementation and do not prevent at least the implementation of one of the alternatives? Provide here an overall determination of the credibility of the barrier analysis. Use the below table to list each barrier considered in the PDD and to describe how the team undertake their validation.	NA	-			
Barriers are issues in project implementation that could prevent a potential investor from pursuing the implementation of the proposed project activity. The identified barriers are only sufficient grounds for demonstration of additionality if they would prevent potential project proponents from carrying out the proposed project activity undertaken without being registered as a CDM project activity.					
Type of Barrier	Description in the PDD	Determination			Conclusion
		Barriers are real	Prevent implementation of PA	Do not prevent implementation of BL	
Access to finance	NA	NA	NA	NA	-
Risks related barriers	NA	NA	NA	NA	-
Technological	NA	NA	NA	NA	-
Due to prevailing practice	NA	NA	NA	NA	-
Other	NA	NA	NA	NA	-
First of its kind	NA	NA	NA	NA	-

	Validated situation	Conclusion
SECTION 7e. Common practice analysis		
1. Describe how the geographical scope of the common practice analysis has been validated. Assess whether the geographical scope (for example, the defined region) of the common practice analysis is appropriate for the assessment of common practice related to the project activity's technology or industry type.	<p>The PP has applied stepwise approach prescribed by the 'Tool for demonstration and assessment of additionality' (Version 06.0.0).</p> <p>In step 1 the applicable output range has been correctly identified from 50.4MW to 151.2MW.</p> <p>In step 2 the geographical scope has been identified as host country India. This is the default option and in accordance with paragraph 5 of additionality tool, Version 06.0.0. A total of 428 power projects of comparable output were identified by the PP. The similar power projects were identified from the Wind Power directory 2011, list of thermal and hydropower projects from CO₂ baseline database for Indian Power sector (Version 06), and list of biomass power projects from the Ministry of New and Renewable Energy (MNRE) website. Validation team confirms from its host country expertise that comprehensive list of all power plants used for N_{all} are correct and valid. Therefore, validation team confirms that this source as appropriate.</p>	OK
2. Determine to what extent similar and operational projects (for example, using similar technology or practice), other than CDM project activities ¹² , have been undertaken in the defined region.	<p>In step 3 the different projects were identified as 425. Out of 428 similar capacity projects, 220 are thermal power plants, 204 are hydropower projects, and 1 nuclear power project.</p> <p>In step 4 the PP has calculated F factor as 0.007 and N_{all} – N_{diff} is 3</p> <p>The F factor is less than 0.2, therefore, the project is not considered as common practice in India.</p> <p>CAR 08 was raised as stepwise approach for common practice analysis was not presented. In response to finding, the PP has presented common practice analysis in the PDD. Team confirmed the common practice analysis from the review of spreadsheet and the PDD. For detailed resolution refer findings section of the Protocol.</p>	CAR-08 OK

¹² Registered CDM project activities and CDM project activities that have been published on the UNFCCC website for global stakeholder consultation as part of the validation processes

	Validated situation	Conclusion
3. If similar and operational projects, other than CDM project activities, are already widely observed and commonly carried out in the defined region, assess whether there are essential distinctions between the proposed CDM project activity and the other similar activities.	NA	-

			Validated situation	Conclusion
SECTION 8. Monitoring plan				
1. <i>Compliance of the monitoring plan with the approved methodology and the applicable tools.</i> Confirm that the MP contains all the necessary parameters and that they are monitored in accordance to the approve Methodology and the applicable tools using the following table:				
Parameter	Monitoring Methodology / Tools description	PDD description	Validated situation	Conclusion
EG _{facility, y}	<p>Data unit: MWh/yr</p> <p>Description: Quantity of net electricity generation supplied by the project plant/unit to the grid in year y</p> <p>Source of data: Project activity site</p> <p>Measurement procedures (if any): Electricity meters</p> <p>Monitoring frequency: Continuous measurement and at least monthly recording</p> <p>QA/QC procedures: Cross check measurement results with records for sold electricity</p>	<p>Unit: MWh/yr</p> <p>Description: Quantity of net electricity generation supplied by the project plant/unit to the grid in year y</p> <p>Source of data: Credit note/ reports generated by MSEDCL¹³</p> <p>Value(s) applied: 196,363</p> <p>Measurement methods and procedures: Monitoring equipment: Electronic tri-vector energy Meters are used for monitoring. Accuracy Class: 0.2S Recording Frequency: Monthly from Energy Meter, Summarized Annually</p>	<p>Data unit and description are described correctly.</p> <p>As the net electricity generation will be directly measured through tri-vector bi-directional electricity meters. Hence the requirements to the data source, measurement procedures, monitoring frequency and Quality Assurance/Quality Control (QA/QC) procedures are met by the respective separate parameters.</p> <p>The meter specification and the calibration frequency meet the host country requirements and good industrial practice.</p> <p>Procedures applicable for the monitoring are described for this parameter as appropriate. The ex-ante value is indicated based on the estimated generation in the Study report.</p> <p>CAR-10 was raised as the source of data and measurement method was incorrect. Further, monitoring equipment type and accuracy, means of cross-check was not presented and calibration frequency was inconsistent in the monitoring plan. For detailed resolution refer findings section of the Protocol.</p>	CAR-10 OK

¹³ Maharashtra State Electricity Distribution Company Limited (MSEDCL)

			Validated situation	Conclusion
		<p>Archiving Policy: Paper & Electronic</p> <p>For measuring the energy delivered by the project activity, one set of main meters (part of interconnection facilities) and check meters will be provided at each of the 4 feeders by the project proponent and respective electricity distribution company (MSEDCL).</p> <p>Monthly joint meter readings of the main meters and check meters located at 4 feeders (sub-station) will be taken by the designated officials of the company and MSEDCL. The summation of all 4 feeder meters reading will be used for billing and emission reduction calculation purpose. Monthly joint meter readings will be taken by the designated officials of the two parties on the synchronisation date of each unit as well as once during the monthly cycle.</p> <p>Monitoring frequency:</p>		

			Validated situation	Conclusion
		<p>Continuously QA/QC procedures: The main and check meters will be of accuracy class 0.2S and shall be calibrated at least once in three years. The records will be cross-checked with the records of sold electricity to MSEDCL.</p> <p>Purpose of data: Calculation of baseline emission.</p>		
<p>2. <i>Implementation of the plan:</i> confirm that the monitoring arrangements described in the monitoring plan are feasible within the project design.</p> <p>Described the steps undertaken to assess this.</p>			<p>The monitoring plan describes the objective, organisational structure, roles and responsibility, the monitoring instruments, data monitoring procedures and the management system.</p> <p>On site review and field interview were conducted and it confirmed that the monitoring is planned in a reasonable manner and considered feasible to be implemented by the PP.</p>	OK
<p>3. <i>Implementation of the Plan:</i> confirm that the means of implementation of the MP, 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 CDM project activity can be reported ex post and verified</p>			<p>The monitoring plan includes the internal quality control and assurance process, data control system and regular calibration of the monitoring instruments as appropriate that will ensure reliable monitoring and reporting of the ERs.</p>	OK

	Validated situation	Conclusion
SECTION 9. Local stakeholder consultation		
1. Determine whether comments by local stakeholders that can reasonably be considered relevant for the proposed CDM project activity, have been invited.	<p>Validation team confirmed from the review of minutes of meeting and interview of local villagers that relevant stakeholders' were invited for the meeting through newspaper advertisement in local newspaper 'Sakal' dated: 04/05/2011. The meeting was held on 07/05/2011 at Karad.</p> <p>Validation team confirmed through the interview of the local villagers that they were informed about the meeting and sufficient timeframe was provided. Therefore, the validation team confirmed that the invitation of comments was made in open and transparent manner, in a way that facilitates comments to be received from local stakeholders and allows for a reasonable time for comments to be submitted.</p>	OK
2. Confirm that the summary of the comments received as provided in the PDD is complete.	No negative comment was raised and was confirmed from the interview of the local stakeholders during site visit.	OK
3. Confirm that the project participants have taken due account of any comments received and have described this process in the PDD.	Confirmed from the interview of local stakeholders that no negative comments were received.	OK

	Validated situation	Conclusion
SECTION 10. Environmental Impacts		
1. Is an EIA required by the environmental legislation of the host country? Describe the legislation applicable.	As per the Ministry of Environment & Forest (MoEF), Government of India, Environmental Impact Assessment (EIA) studies of the wind power generation plant is not an essential requirement as it is not covered under the eleven categories (Ref: http://envfor.nic.in/legis/eia/so1533.pdf and http://moef.nic.in/downloads/rules-and-regulations/3067.pdf) as described in EIA Notification of 1994, or the Amended Notification of 2006.	OK
2. Confirm whether the project participants have undertaken an analysis of environmental impacts and, if required by the host Party, an environmental impact assessment.	Not applicable	-
3. Confirm that environmental impacts considered significant by the PPs or the Host country are described in the PDD, including mitigation measures.	Not applicable	-

Findings¹⁴

1. Grade / Ref:	CAR 01	2. Date:	15/09/2011	3. Status:	Closed
4. Requirement:	Paragraph 38, 45 and 50 of CDM VVS, Version 03.0				
5. Nature of the Issue Raised:	LoA from the host party DNA has not been submitted for validation.				
6. Nature of responses provided by the project participants:	LoA from the host Party DNA dated: 06/11/2012 has been submitted.				
7. Assessment of such responses:	In response to the finding, the PP has presented LoA of the host Party DNA to the validation team. The title of the project, name of the PP and name of the Party mentioned in the LoA match exactly with that in the PDD. LoA meets the requirement of written approval, stating that the Party is the Party to the Kyoto Protocol, voluntary participation, and confirmation on contribution of the project towards sustainable development. Therefore, finding has been closed.				
8. References to resulting changes in the PDD or supporting annexes:	NA				

¹⁴ Explanation of the Findings Log structure:

1. Grading and Sequential Number of the finding	2. Date of Original Finding	3. New, Open, Closed	4. Requirement (VVS, PDD-CDM, etc)	5. Reference to Protocol
6. Details of PP's response	7. Evaluation from the Validation team		8. List of changes made as a result of the finding	

1. Grade / Ref:	CAR 02	2. Date:	15/09/2011	3. Status:	Closed
4. Requirement:		Paragraph 64 of CDM VVS, Version 03.0			
5. Nature of the Issue Raised:					
Related to description of project activity & technology employed					
1. Whilst the agreement with GE dated 04/05/2011 mentions implementation of the project activity in four phases, section A.2 of the PDD does not include the details of phased implementation.					
2. Technical specification, lifetime, plant load factor, specification of monitoring equipment and their location is not described in the PDD.					
3. Roles and responsibilities are not included in the PDD.					
4. Name of the connected grid system was inconsistent in the PDD in sections A.2, B.4 and B.5.					
6. Nature of responses provided by the project participants:					
PDD now includes the phased implementation schedule. However, the project is delayed and WTGs are not yet commissioned. Further, technical specification, lifetime, plant load factor and monitoring equipment and their location is now included in the PDD. Roles and responsibilities are included in the PDD. Connected grid system was corrected to NEWNE grid.					
7. Assessment of such responses:					
Validation team confirmed the phases of implementation from the review of the agreements, and interview of the PP. Validation confirmed from the review of the PDD that technical specification, lifetime, PLF, monitoring equipment including their location have been correctly presented. Validation team confirmed the technical specification, and lifetime from the agreements of the PP; PLF from the study report prepared by third party, and monitoring equipment and their location from the interview of the PP. Further, the revised PDD includes the roles and responsibilities which are confirmed from the interview of the PP, agreements and Purchase orders. Validation team confirmed from the review of the PDD that connected grid system has been made consistent to NEWNE grid system. Validation team confirmed the connected grid system from the review of "Baseline CO ₂ database for Indian Power Sector", Version 06. Therefore, finding was closed.					
8. References to resulting changes in the PDD or supporting annexes:					
Section A.2, A.3 and B.5					

1. Grade / Ref:	CAR 03	2. Date:	15/09/2011	3. Status:	Closed
4. Requirement:	Paragraph 73 and 76 of CDM VVS, Version 03.0				
5. Nature of the Issue Raised:	Applicability conditions of the applied tool are not described in the PDD.				
6. Nature of responses provided by the project participants:	Revised PDD now presents the applicability conditions.				
7. Assessment of such responses:	Validation team confirmed from the review of the PDD, site visit, CO ₂ baseline database for Indian Power sector, Version 06 and its user guide, that applicability conditions have been adequately justified.				
8. References to resulting changes in the PDD or supporting annexes:	Section B.2				

1. Grade / Ref:	CAR 04	2. Date:	15/09/2011	3. Status:	Closed
4. Requirement:	Paragraph 82 of CDM VVS, Version 03.0				
5. Nature of the Issue Raised:	Project boundary diagram does not include: <ul style="list-style-type: none"> Location of the meters that will be used for monitoring Grid connected power plants 				
6. Nature of responses provided by the project participants:	Revised PDD now includes the location of meters at the substation and feeder line, and grid connected power plants in the project boundary.				
7. Assessment of such responses:	Validation team confirms that the revised PDD correctly presents the project boundary in accordance with the applied methodology. Location of meters presented in the project boundary was confirmed from during the site visit.				
8. References to resulting changes in the PDD or supporting annexes:	Section B.3				

1. Grade / Ref:	CAR 05	2. Date:	15/09/2011	3. Status:	Closed
4. Requirement:	Paragraph 106 of CDM VVS, Version 03.0 and Glossary of CDM Terms, Version 07				
5. Nature of the Issue Raised:	Purchase order for purchase of transformer was placed on 01/03/2011 which is earlier to the 04/05/2011, PP to clarify how the start date for the project activity as considered is appropriate.				
6. Nature of responses provided by the project participants:	The start date is now revised to 01/03/2011 as the earliest action taken by the PP.				
7. Assessment of such responses:	Validation team confirms that the revised PDD that start date has been correctly revised to 01/03/2011.				
8. References to resulting changes in the PDD or supporting annexes:	Section B.5 and C.1.1				

1. Grade / Ref:	CAR 06	2. Date:	15/09/2011	3. Status:	Closed
4. Requirement:	Paragraph 117 and 120 (a) of CDM VVS, Version 03.0				
5. Nature of the Issue Raised:	<p>Related to investment analysis:</p> <ol style="list-style-type: none"> The investment analysis is not presented in a transparent manner in the PDD, all the relevant assumptions used for investment analysis are not included in the PDD so as to allow the reproducibility of the analysis and obtain the same results. The input value table in the PDD and the key assumption worksheet in the IRR sheet does not match. For the input value table and the key assumption table the reference/source not stated for all values. No basis/reference stated for insurance, loan upfront fee, service tax rate in the key assumption sheet. For the tariff rate the draft MERC tariff order of March 2011 is referred however this would not be available to PP during the decision making on 23/02/2011. For the interest rate, repayment schedule and the moratorium the reference is provided to loan application document, however this would not be available to PP during the decision making on 23/02/2011. Related to project cost <ul style="list-style-type: none"> Preliminary expenses, studies & permits and contingency added In the break up provided for project cost, the CDM registration charges are also considered –PP to justify the inclusion of the same Supporting evidence for the all the heads assumed in computation of project cost are not available Wind resource assessment study available at the time of investment decision is not available for validation. As per the Assessment of the energy production of the proposed wind farm by GL Garrad Hassan India Private Limited (Doc No 109042/INDR/02) dated 06/05/2011, the net energy output of the wind farm is 245 GWh/annum which corresponds to the PLF of 27.75% and the PLF considered in the IRR sheet is 22.24% which is based on P90 scenario please justify. The loan and equity component given in the PDD section B.5 and the project cost worksheet do not match. PDD states D/E ratio of 70:30 is considered however the project cost worksheet indicates the same as 66:34. 				

8. The O&M cost assumed in the PDD and the IRR sheet do not match.
9. In the IRR sheet it is stated that GBI will be applicable for first 10 years and up to maximum of 6200 lacs, however in the cash flow sheet GBI is not considered in the 9th and 10th year.
10. The insurance value in the key assumption worksheet and project cost worksheet does not match.
11. It is stated in the PDD (refer page 21) that the project IRR comes out to be 7.16% however in the IRR sheet the same is calculated to be 9.88%
12. The formula used for to calculate weighted average cost of capital (WACC) as used in the benchmark computation sheet is not stated in the PDD.
13. The benchmark stated in the IRR sheet is stated as 12.48% however the PDD and benchmark computation sheet indicates a value of 13.50%.

6. Nature of responses provided by the project participants:

Following is the response to the queries:

1. All relevant assumptions are provided in the PDD.
2. The input values, related to project cost has been corrected in the PDD. The project cost has been sourced from the Project feasibility report.
3. Tariff rate has now been sourced from MERC tariff order dated: 14/07/2010, which is available at the time of investment decision.
4. Loan repayment period, interest rate has been sourced from Project feasibility report.
5. The project cost has been revised to remove preliminary expenses, cost related to studies and permits, contingency cost and CDM registration cost. Further, the project cost available at the time of decision making sourced from project feasibility report was considered.
6. The study report prepared by GL Garrad Hassan has been submitted for validation. Further, the ex-ante PLF based on P90 scenario has been generally considered for wind power projects.
7. The Debt/equity ratio of 70:30 was based on the Project feasibility study report of the project. The debt/equity ratio changed after the investment decision due to lesser amount of loan sanctioned by bank.
8. O&M cost revised in the PDD.
9. The GBI calculation has been corrected in accordance with the IREDA guidelines.
10. Insurance cost in the assumption spreadsheet refers to insurance of WTGs during operation, whereas insurance cost in the project refers to insurance during transportation, erection and commissioning. The insurance cost has been sourced from the Project feasibility study report.
11. The IRR value has been corrected in the PDD.
12. Formula used for calculation of WACC has now been included in the PDD.
13. Benchmark value has been corrected and made consistent in the investment analysis spreadsheet.

7. Assessment of such responses:

Validation team confirmed the response submitted by the PP as below:

1. Confirmed that all the assumptions used in the investment analysis are presented in the PDD from the review of investment analysis spreadsheet.
2. Source and values of input presented in the PDD are corrected. The input values in the revised PDD are now consistent with the Project feasibility study report which was available at the time of investment decision. The PDD was corrected to mention Total project cost of INR 7010.80 Millions in place of INR 6957.519 Millions.
3. Tariff rate has been correctly sourced from the MERC tariff order dated: 14/07/2010 for Zone – 1 site, which is available at the time of investment decision.
4. Loan repayment period and interest rate has been correctly sourced from the Project feasibility study report. Validation team confirms from its host country expertise that loan repayment period and interest rate has been correctly applied.
5. The project cost has been revised to remove preliminary expenses, cost related to studies and permits, CDM registration cost of INR 34.27 Millions and

contingency of INR 100 Millions.

6. Study report prepared by GL Garrad Hassan for the project activity has been submitted for validation. Validation team confirmed from its sectoral expertise that P90 is usually considered for wind power projects (Ref: <http://www.enverian.com/why-investors-renewables-prefer-p90-numbers/>). Validation team further confirmed the suitability of the PLF from the review of MERC tariff order dated: 14/07/2010 which describes it 20% for 'Zone – 1' sites.
7. Validation team confirmed the debt-equity ratio from the review of Project feasibility study report. Validation team further confirmed the suitability of debt-equity ratio from the review of MERC tariff order dated: 14/07/2010 and its host country expertise.
8. Validation team confirmed from the review of PDD and investment analysis spreadsheet that O&M cost has been made consistent. Further, suitability of O&M cost has been confirmed from the sectoral expertise of the team.
9. Validation team confirmed from its host country expertise that GBI calculations have been correctly presented in the revised investment analysis spreadsheet.
10. Justification provided by the PP is appropriate.
11. Validation team confirmed from the PDD and investment analysis spreadsheet that IRR value of 9.25% has been correctly presented.
12. Validation team confirmed from the review of PDD and benchmark spreadsheet that formula used for WACC has been correctly presented.
13. Validation team confirmed from the review of investment analysis spreadsheet and benchmark spreadsheet that benchmark value has been consistently presented.

8. References to resulting changes in the PDD or supporting annexes:

Section B.5, investment analysis spreadsheet, benchmark spreadsheet

1. Grade / Ref:	CAR 07	2. Date:	15/09/2011	3. Status:	Closed
4. Requirement:	Paragraph 121 of CDM VVS, Version 03.0				
5. Nature of the Issue Raised:	<ol style="list-style-type: none"> 1. Why different corporate tax rate was considered for benchmark calculation 2. PP to clarify how the risk free rate sourced from the Reserve Bank of India (RBI) publication 3. PP to clarify how similar companies were identified and how it relates to the risk profile of the project activity. 				
6. Nature of responses provided by the project participants:	<p>Corporate tax rate used for WACC has been corrected.</p> <p>Risk free rate has been sourced from RBI monthly bulletin published on dated: 12/01/2011 which was available at the time of investment decision.</p> <p>Similar companies were identified based on its business in power sector. Also, it was identified that for two companies, i.e. Reliance infrastructure and Lanco, beta (measure of risk profile) is exceptionally high. Therefore, these two companies were removed from beta estimation leading to conservative beta.</p>				
7. Assessment of such responses:	<p>Validation team confirmed from the review of benchmark spreadsheet that corporate tax rate for WACC has been correctly used. Further, the risk free rate has been correctly sourced from the monthly bulletin of RBI. Beta has been correctly revised to remove the companies with beta higher than 2. Therefore, the finding was closed.</p>				

8. References to resulting changes in the PDD or supporting annexes:	
Section B.5, Benchmark spreadsheet	

1. Grade / Ref:	CAR 08	2. Date:	15/09/2011	3. Status:	Closed
4. Requirement:	Paragraph 128 of CDM VVS, Version 03.0				
5. Nature of the Issue Raised:	Common practice was not presented in accordance with the Tool for demonstration and assessment of additionality, Version 06.0.0				
6. Nature of responses provided by the project participants:	Revised PDD now include the stepwise approach of common practice. Further, detailed spreadsheet on common practice analysis has now been submitted.				
7. Assessment of such responses:	In response to the finding, the PP has included the stepwise approach used for common practice in accordance with the tool. Validation team confirmed from its host country expertise that all the relevant power plants are considered in Nall, justification provided for selection of different power plants has been appropriately done; and F factor and difference of Nall & Ndiff has been correctly calculated. Therefore, validation team confirms that stepwise approach for common practice has been correctly presented and justified in the PDD.				
8. References to resulting changes in the PDD or supporting annexes:	Section B.5, common practice spreadsheet				

1. Grade / Ref:	CAR 09	2. Date:	15/09/2011	3. Status:	Closed
4. Requirement:	Paragraph 96 of CDM VVS, Version 03.0				
5. Nature of the Issue Raised:	<p>PP to clarify how stepwise calculation of emission factor is appropriate in section B.4 of the PDD.</p> <p>In section B.6.2 of the PDD under tables for $EF_{grid,OM,y}$ and $EF_{grid,BM,y}$ it is stated that “CO₂ Baseline Database for Indian Power Sector” is based on version 2.2.0 of the Tool to calculate emission factor for an electricity system however the database refers to Version 2.0 of the Tool.</p> <p>PP to clarify why operating margin, build margin and combined margin emission factors will not be rounded down.</p> <p>The emission reduction estimate given in the PDD section B.6.4 and the ER sheet does not match. The net power generation figures given in the IRR sheet and the PDD do not match.</p>				
6. Nature of responses provided by the project participants:	<p>Revised PDD now includes the stepwise calculation of emission factor in section B.6.1.</p> <p>The PDD has been now been corrected and inconsistency on the version number of tool has been removed. The PDD now describes the stepwise approach used for estimation of $EF_{grid,OM,y}$ and $EF_{grid,BM,y}$ using the Tool to calculate emission factor for an electricity system, Version 02.2.1. Further, the $EF_{grid,OM,y}$, $EF_{grid,BM,y}$,</p>				

$EF_{grid,CM,y}$ is rounded down for conservativeness.

Net electricity estimate is now based on the PLF study report prepared by GL Garrad Hassan, third party. The emission reduction estimate and net generation in the PDD has now been corrected.

7. Assessment of such responses:

Validation team confirms that stepwise approach for calculation of emission factor has been presented in section B.6.1 of the PDD. The PDD now justifies the option used by the PP where applicable. The calculations are in accordance with the applied tool. The operating margin, build margin and combined margin emission factor was correctly rounded down. Further, incorrect statement on the reference number of the tool has been removed.

This has resulted in change in OM and CM emission factors.

Validation team further confirmed from the review of the PDD and emission reduction spreadsheet that ex-ante emission reduction values are now consistent. Further, the ex-ante PLF is now sourced from the study report prepared by GL Garrad Hassan, a third party. Therefore, finding was closed.

8. References to resulting changes in the PDD or supporting annexes:

Section B.4, B.6

1. Grade / Ref:	CAR 10	2. Date:	15/09/2011	3. Status:	Closed
4. Requirement:		Paragraph 131 and 132 of CDM VVS, Version 03.0			
5. Nature of the Issue Raised:					
<p>The followings were noted in the monitoring plan:</p> <ol style="list-style-type: none">1. The source of data to be used for “quantity of net electricity generated by the project activity” is stated as Joint Meter Reading Sheets, however as confirmed from site visit, the format used by state utility is said as credit notes.2. The calibration frequency of the main and check meters is stated as at-least once in three years in section B.7.1 and at-least once in two years in section B.7.2 of the PDD (refer page 34)3. The QA/QC measures “Cross check measurement results with records for sold electricity” are not stated for $EG_{facility,y}$ in line with the methodology requirements.4. Section B.7.1 of the PDD, does not specify the type of measurement equipment is used (type of energy meter used) and accuracy class of the measurement equipment5. It was noted that the substation used for power evacuation was dedicated for the PP and no other project developer. PP to clarify how apportioning mechanism was appropriate.6. PP to clarify how General guideline to small-scale methodologies, Version 11 (Annex 35 to EB 35) referred to justify calibration frequency is applicable to the project activity. PP to further clarify how reference to Annex 12 of EB 40 is valid to justify calibration frequency.					
6. Nature of responses provided by the project participants:					
The monitoring plan was revised to include the source of data for net electricity supplied to the grid from credit note issued by state utility; calibration frequency has					

been corrected and made consistent to at-least once in three years; cross-check of net electricity from the records of sold electricity; specification of the measurement equipment and its accuracy class. Apportioning mechanism was removed from the PDD. Incorrect reference of General guideline to small-scale methodologies and Annex 12 of EB 40 has been removed. The calibration frequency of the meters will be once in three years.

7. Assessment of such responses:

Validation team confirmed the correction of source of data for net electricity supplied to grid, calibration frequency and type & accuracy class of the meters from the site visit. The revised PDD includes the cross-check mechanism in accordance with the applied methodology. Validation team further confirmed the measurement method from the interview of the PP.

PP has correctly revised the PDD after removing the reference to General guideline to small-scale methodologies and Annex 12 of EB 40. Further, the calibration frequency stated by the PP is once in three years. The local and national standard of the host country prescribes calibration of once in five years. Therefore, considering calibration frequency of once in three is conservative. Team also confirms from its sectoral expertise that calibration of once in three years is a good industrial practice.

In the revised PDD, the monitoring plan is in accordance with the applied methodology and is feasible. Therefore, finding was closed.

8. References to resulting changes in the PDD or supporting annexes:

Section B.7