Validation Report

Report for:

Renova Energia S/A

Validation of CDM project for

Renova Area 1 Wind Power Project

LRQA Reference	: TCAUG100071_RENO1_C Version 2
Date	: 1st December 2011
Work carried out by	: Cláudia Freitas Iuri de A. Barroso Márcio Pragana
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1 Executive Summary

Lloyd's Register Quality Assurance Limited has been contracted by Renova Energia S/A representing the project participants (PP), to undertake validation of the proposed project activity Renova Area 1 Wind Power Project.

The validation has been performed through a process of document review based on the project design document, Version 1 dated 24th February 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.

Renova Area 1 Wind Power Project is a greenfield project located in the municipalities of Caetité and Guanambi, state of Bahia, Brazil. The project will generate electricity by implementing and operating 103 horizontal-axis wind turbines, with a total nominal capacity of 164.4 MW. In the baseline, electricity delivered to the grid by the project activity would have been generated by the operation of grid-connected power plants and by the addition of new generation sources. Hence, the project activity will promote GHG emission reductions by displacing fossil fuel-based electricity generation that would otherwise occur.

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 2 CARs, 3 CLs and 1 FAR. The PP have taken actions and submitted to LRQA all necessary additional explanations and evidence of the corrections made. The validation team is of the opinion that the proposed project activity as described in the project design document Version 3 dated 28th November 2011 meets all the relevant UNFCCC requirements for the CDM, as well as the host country's national requirements except for the absence of LoA.

Prior to the submission of the Project Design Document and the Validation Report to the CDM Executive Board, the project shall receive the written approval of voluntary participation from the DNA of Brazil, including the confirmation that the Project assists the country in achieving sustainable development.

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Abbreviations

ANEEL	Host country´s electric energy national agency
BE	Baseline emissions
BNDES	National Bank of Economic and Social Development
CARs	Corrective action requests
CCEE	Brazilian Electric Energy Clearing Chamber
CDM	Clean development mechanism
CDM-EB	Executive board of clean development mechanism
CDM M&P	Modalities and procedures for a clean development mechanism
CDM VVM	CDM Validation and Verification Manual
CEPRAM	Environmental State Board, state of Bahia
CER	Certified emission reductions
CIMGC	Brazilian Interministerial Commission on Global Climate Change
CLs	Clarification requests
COP/MOP	Conference of the Parties serving as meeting of the Parties to the Kyoto Protocol
CSLL	Social contribution on net profit
DNA	Designated national authority
DOE	Designated operational entity
EF	Emission factor
EIA	Environmental impacts assessment
ERPA	Emissions reduction purchase agreement
FAR	Forward action requests
GHG	Greenhouse gas
GSP	Global stakeholders' consultation process
ICG	Shared transmission system that connects a plant with the National Interconnected Electric Energy Generation and Transmission System (SIN)
IPCC	Intergovernmental panel on climate change
IRR	Internal rate of return
KP	Kyoto Protocol of the United Nations Framework Convention on Climate Change
kW / kWh	Kilowatt / Kilowatt hour
LE	Leakage emissions
LoA	Letter of approval
LR	Lloyd's Register
LRQA	Lloyd's Register Quality Assurance Limited
MW / MWh	Mega watt / Mega watt hour
NCV	Net calorific value
NGO	Non governmental organisation
ODA	Official development aid
PDD	Project design document
PE	Project emissions
PIS/COFINS	Social contribution tax, payable by legal entities, in order to finance the payment of unemployment insurance and allowance for workers
PP	Project participant
PROINFA	Brazilian Incentive Program for Alternative Sources of Electric Energy
SIN	National Interconnected Electric Energy Generation and Transmission System
tCO_2e	Tonnes of carbon dioxide equivalent
TUST	Tariff paid for the use of the electric energy transmission system

2 Introduction

The project participant (PP) represented by Renova Energia S/A has contracted with Lloyd's Register Quality Assurance Limited (LRQA) to undertake validation of the proposed project activity Renova Area 1 Wind Power Project. 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:

Cláudia Freitas	LRQA Brazil	Team leader, CDM Lead validator
Iuri de A. Barroso	LRQA Brazil	Team member, CDM Lead Validator
Márcio Pragana	LRQA Brazil	External Sector Expert
Prabodha C Acharya	LRQA Ltd., India	Technical reviewer / Sector Expert
Andrew Ritchie	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 03). LRQA is designated as an operational entity and holds the full responsibility of decision-making regarding the validation, in accordance 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, the present annex, 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 manual (CDM VVM) 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 validation conclusion shall become final subject to the decision maker's review by LRQA Ltd.

2.3 GHG Project Description

The Renova Area 1 Wind Power Project is a Greenfield project which comprises eight facilities located in the municipalities of Caetité and Guanambi, state of Bahia, Brazil. The project will generate electricity by implementing and operating 103 horizontal-axis General Electric wind turbine, with a total nominal capacity of 164.4 MW), as follows:

Facility	Number of wind turbine	Installed capacity (MW)	Estimated load factor (%)	Estimated capacity (MW)
Alvorada	5	8	56.8	4.5
Candiba	6	9.6	45.1	4.3
Guanambi	13	20.8	47.4	9.9
Guirapá	18	28.8	51.3	14.8
Licínio de Almeida	15	24	50.6	12.1
Pindaí	15	24	49.8	11.9
Rio Verde	19 (one turbine with nominal capacity limited to 1.2 MW)	30	57.3	17.2
Serra do Salto	12	19.2	46.7	9.0

The plant load factors were estimated by an engineering company according to the Guidelines for the reporting and validation of plant load factors. The contracted company´s credibility was assessed and confirmed.

In the baseline, electricity delivered to the grid by the project activity would have been generated by the operation of grid-connected power plants and by the addition of new generation sources. Hence, the project activity will promote GHG emission reductions by displacing fossil fuel-based electricity generation that would otherwise occur.

The Starting Date of the project activity, 14th December 2009, is the date of realisation of Brazilian 2nd Reserve Power Auction (2º Leilão de Energia de Reserva - Leilão Nº 003/2009 - LER-20091), in which the eight electricity generation facilities Alvorada, Candiba, Guanambi, Guirapá, Licínio de Almeida, Pindaí, Rio Verde and Serra do Salto had its energy contracted.

The amount of GHG emission reductions from the project is estimated to be 150,801 tCO_2e per annum during the first renewable 7-year crediting period, from 1st July 2012 to 30th June 2019.

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 Version1 dated 24th February 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 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 3 dated 28th November 2011 to confirm that all changes agreed had been incorporated.

3.2 Site Visit & Follow-up interviews

The visit was conducted in the Project Participants´ office, taking into consideration that Renova Area 1 is a Greenfield project and that the project works had not yet been initiated. It was confirmed through interviews with PP´s personnel and the assessment of environmental permits, photographs and satellite images that the site reflects the description in the PDD version 3 and that no renewable power plant was operated prior to the implementation of the project activity.

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
1st June 2011	Renova Area 1 office	• Renova Energia S/A and • Key Consultoria e Treinamento Ltda.	1. Presentation from the PP of the project overview 2. Confirmation of the description of the project activity including the technology used 3. Review of the project commissioning reports and relevant contracts	Claudia Freitas Iuri Barroso Márcio Pragana (sector expert)

			4. Confirmation of Project boundaries and co-ordinates 5. Confirmation of the Baseline development and review of related evidences 6. Review of the documents supporting the demonstration of the additionality and investment analysis 7. Review of ex-ante emission reduction estimation 8. Review of environmental issues and relevant licenses and studies 9. Confirmation of sustainable development 10. Review of local Stakeholders consultation process 11. Review of proposed monitoring plan, QA/QC process, training and emergency response process 12. Review of the Modalities of communication	

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 whilst 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):

I. 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 prior to the submission of the validation report to the PP and prior to 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 Manual version 01.2. 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.

To be completed after presentation of the LoA, at the final stage of validation. According to the Brazilian DNA´s rules, the issuance of the Letter of Approval is conditioned to the presentation of the DOE´s validation report by PP to the DNA (Resolution No. 1 of 11th September 2003).

The host Party of the proposed project is Brazil.

Brazil ratified the Kyoto Protocol on 23rd August 2002. The Designated National Authority (DNA) is the Interministerial Commission Global Climate Change (CIMGC).

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.

This Validation Report will be updated to reflect the receipt of the LoA and any requirements specified therein.

For details relating to this section, please refer to the Validation Protocol in Appendix F section1.

4.2 Participation requirements

The project participants, Renova Energia S/A and Key Consultoria e Treinamento Ltda., are private entities having their registered offices in Brazil.

The contact details of the PPs are correctly provided in Annex 1 of the PDD.

Participation of the PPs in the project activity has yet to be authorised and confirmed in the LoA issued by the DNA of the Parties concerned. The team has yet to confirm 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 section 2.

4.3 Project design document

The PDD version 3 was checked and confirmed as complete against the Guidelines for completing the project design document (CDM-PDD) and the proposed new baseline and monitoring methodologies (CDM-NM) referring to the latest version applicable to the validation.
A valid form of the CDM-PDD (version 03) is used, being the current form as available on the CDM website.

For details relating to this section, please refer to the Validation Protocol in Appendix F section 3.

4.4 Project description

The Renova Area 1 Wind Power Project is a greenfield project located in the municipalities of Caetité and Guanambi, state of Bahia, Brazil. The project will generate electricity by implementing and operating 103 horizontal-axis wind turbines, each with 1.6 MW (total nominal capacity: 164.4 MW).

The reference geographic coordinates of the units of the project activity, in decimal degrees, are given below:

Wind Farm	Latitude	Longitude
Alvorada	- 14.1852	- 42.5911
Candiba	- 14.1857	- 42.6466
Guanambi	- 14.1977	- 42.6308
Guirapá	- 14.1544	- 42.6312
Licínio de Almeida	- 14.1886	- 42.6596
Pindaí	- 14.2093	- 42.6552
Rio Verde	- 14.1640	- 42.6006
Serra do Salto	- 14.1680	- 42.6329

In the baseline, electricity delivered to the grid by the project activity would have been generated by the operation of grid-connected power plants and by the addition of new generation sources. Hence, the project activity will promote GHG emission reductions by displacing fossil fuel-based electricity generation that would otherwise occur.

LRQA confirms that the project description included in the PDD version 3 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 Wind Certification reports, lease of land contracts, EPC (engineering, procurement and construction) contracts and interviews.

Sustainable development
The host Party's DNA has yet to confirm 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 section 1.

4.5 Baseline and monitoring methodology

Applicability of the selected methodology to the project activity

The project activity applied the approved baseline and monitoring methodology ACM0002, "Consolidated baseline methodology for grid-connected electricity generation from renewable sources", Version 12.1.0.

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 section 5.

Project boundary

The project boundary has been validated through documentation review on environmental permits, interviews, photographs and satellite images, which confirmed that the project is a Greenfield plant and, as a result, there are no processes or equipment affected by the project activity.

Emissions related to the construction, transportation of employees and supporting facilities (e.g. restaurant) were identified and left out of account, according to the approved methodology ACM0002 version 12.1.0. No significant emission sources were identified that may be affected by the project activity and are not addressed by the selected approved methodology.

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 that they meet the requirements of the approved methodology.

For details relating to this section, please refer to the Validation Protocol in Appendix F section 5a.

Baseline identification

The baseline scenario identified in the PDD has been assessed against the requirements in the approved methodology ACM0002, version 12.1.0, "Consolidated baseline methodology for grid-connected electricity generation from renewable sources".
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 section 5b.

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 project emissions, baseline emissions and emission reductions comply with the requirements of the approved methodology ACM0002 version 12.1.0.

The steps taken to assess the algorithms and/or formula used to determine emission reductions are described in the Validation protocol in Appendix F section 5.c.

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 version 3 are considered reasonable in the context of the proposed CDM project activity;
- The baseline methodology has been correctly applied 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.

Prior consideration of CDM .

The prior consideration of the benefits of the CDM in the decision to undertake the project activity was assessed by the validation team, following the Guidance on the Demonstration and Assessment of Prior Consideration of the CDM EB62 Annex 13, version 4.

The adoption of the realisation of Brazilian 2nd Reserve Power auction as the project starting date (14th December 2009), as stated in PDD version 3 section C.1.1, was assessed and considered reasonable.

The project activity started after 2 August 2008. The PP has informed the host country DNA and the UNFCCC secretariat in writing of the commencement of the project activity and of their intention to seek CDM status. Such notification was made to UNFCCC secretariat and the host country DNA on 9th June 2010, which is within six months of the project activity start date. Through the process of validation, LRQA confirms that the proposed project activity complies with the requirement of the Guidelines on the demonstration and assessment of prior consideration of the CDM Version 04

The steps taken to assess the prior serious consideration of the CDM are described in the Validation protocol in Appendix F section 6a.

Identification of alternatives

The list in the Validation Protocol – Appendix F section 6b shows the alternatives given in the PDD version 3 and clearly states how LRQA has validated whether these alternatives are credible and complete.

It is the opinion of LRQA that the list of alternatives provided in the PDD version 3 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 the most economically or financially attractive alternative.

The PPs have shown that the project activity is additional by demonstrating that the financial returns of the proposed project activity would be insufficient to justify the required investment (equity IRR *versus* Benchmark).

For assessing the additionality of this project activity, LRQA has complied with the latest version of the "Guidance 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 section 6c.

The project activity presents a change since the date of investment decision making, regarding the nominal capacity of the wind turbine model used in the wind farms. Since the Starting Date of the project activity, 14th December 2009, the turbine model was changed from a 1.5MW to a 1.6MW and 3 wind turbines were added to the wind farms, increasing the total installed capacity from 150MW to 164.4MW.

In its former configuration, the project presented a CAPEX of 3,927,479.86 R$/MW and a Real Equity IRR of 7.59%. Due to the increase of the wind turbine nominal capacity and to the acquisition of 3 additional turbines, reaching a total of 103 wind turbines, the project had an increase of the nominal capacity from 150 MW to 164,4 MW, which was approved by ANEEL (National Energy Agency) on February 11, 2011. In the new arrangement, the project presents a CAPEX of 3,946,808.79 R$/MW and a Real Equity IRR of 6.35%.

Taking into consideration the calculated benchmark asset IRR of 16.57%, the decision-making date´s equity IRR of 7.59% and the new configuration´s equity IRR of 6,35%, the validation team concluded that the change in the installed capacity of the wind farms does not compromise the project´s additionality.

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 Brazil.

The common practice analysis presented in the PDD version 3 followed the latest version of the Guidelines on Common Practice. Reasonable arguments were presented for considering that there are essential distinctions between these activities

and the proposed CDM project.

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 section 6e.

4.7 Monitoring Plan

The PDD Version 3 includes a Monitoring Plan based on the approved consolidated methodology ACM0002, "Consolidated baseline methodology for grid-connected electricity generation from renewable sources", version 12.1.0.

A minor modification was made by the PP during the validation technical review to the PDD version 2, to state that the monitoring data will be archived electronically and kept at least for 2 years after the end of the last crediting period.

LRQA confirms that the Monitoring Plan described in the PDD Version 3 complies with the requirements in the Monitoring Methodology and that the PPs 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 section 7.

4.8 Local stakeholder consultation

The PPs invited Local Stakeholders to comment on the proposed project activity on the 28th July 2010, prior to the publication of the PDD version 1 on the UNFCCC website. Copies of invitations for comments posted by the PP to the local stakeholders, as well as the corresponding acknowledgments of receipt, were assessed and found in accordance with the Brazilian DNA´s resolution No. 7 of 05th March 2008.

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 section 8.

4.9 Environmental impacts

LRQA has confirmed that the PPs have undertaken an analysis of environmental impacts.

The PPs have submitted documentation to LRQA on the analysis of the environmental impacts of this project activity in accordance with paragraph 37 (c) of the CDM modalities and procedures.

The FAR 01 is kept open, due to the need for follow up on the accomplishment by the PP of all requirements made by the Environmental State Board, state of Bahia (CEPRAM) when granting the preliminary environmental permits. The validity of the environmental operation permits depend on the implementation of environmental education, socio-economic monitoring and bird monitoring programs, among other requirements.

For details about the document review and determination of whether the PPs have undertaken the analysis of environmental impacts, please refer to the Validation protocol in Appendix F section 9.

5 Comments by parties, stakeholders and NGOs

In accordance 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 accordance with the requirements of the procedure for the period of 22nd March 11 – 20th April 11 as per http://cdm.unfccc.int/Projects/Validation/DB/XMPL2JRB0KUCLA2A31XXO20P0YLASJ/view.html.

No comment was received during this period.

There are a number of changes from the PDD Version 1 uploaded for GSP and the revised Version 3; the major points are:

- The significant environmental impacts and the corresponding mitigation measures have been included in the PDD.
- The common practice analysis has been provided following the guideline *Guidelines on Common Practice*" version 01.0 (Annex 12, EB63)
- Monitoring procedure has been detailed following the applied methodology and good practice.

The above changes were to address the issues raised by the validation team in response to the CAR/CL raised during the validation process.

6 Validation Opinion

LRQA has undertaken the validation of the proposed project activity "Renova Area 1 Wind Power Project" 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 proposed activity is a Greenfield project located in the municipalities of Caetité and Guanambi, state of Bahia, Brazil. The project will generate electricity by implementing and operating 103 horizontal-axis wind turbines, each with 1.6 MW (total nominal capacity: 164.4 MW). In the baseline, electricity delivered to the grid by the project activity would have been generated by the operation of grid-connected power plants and by the addition of new generation sources. Hence, the project activity will promote GHG emission reductions by displacing fossil fuel-based electricity generation that would otherwise occur.

The project participants are Renova Energia S/A and Key Consultoria e Treinamento Ltda. The project applies the approved baseline and monitoring methodology ACM0002 Version 12.1.0, "Consolidated baseline methodology for grid-connected electricity generation from renewable sources".

In order to arrive at the final validation conclusions and opinion, LRQA carried out a desk review, visit to the PP´s head office, interview with the staff involved and independent research of alternative information sources in order to cross-check and validate the information, assumptions, calculations and statements presented in the PDD.

The validation team concluded that the description of the project activity in the PDD Version 3 is accurate and complete and that all applicability criteria of the methodology ACM0002 Version 12.1.0 are met; the baseline scenario has been correctly identified and the assumptions adopted are sound; the monitoring plan complies with the applicable methodology, with feasible arrangements and sufficient means of implementation to ensure that the emission reductions resulting from the proposed CDM project activity can be reported ex post and verified.

The Project Activity is additional as demonstrated by the financial and common practice analysis; all parameters used in the emission reductions calculations had their sources verified, were correctly interpreted and are conservative choices.

It is reasonably demonstrated that the project is not a probable baseline scenario and that emission reductions attributable to the project are additional to any that would occur in the absence of the project activity.

Local stakeholders, such as the Town Council, the City Hall, the Brazilian forum of NGOs, neighbouring community representatives, state and federal prosecutors and the environmental city prosecutor, were invited to comment on the project, in accordance with the requirements of Resolution 7 of the Brazilian DNA, as verified by the correspondent protocols of receipt. One comment was received from the federal prosecutor, which was satisfactorily dealt with. No change in the PDD was needed.

There are no project components or issues excluded from the validation. Other than the LoA, which has yet to be issued following DNA review of the Validation Report,

Through the validation process, the validation team identified 2 CARs, 3 CLs and 1 FAR. The PP has taken action on the raised issues and submitted to LRQA the revised PDD and other supporting evidences. Further details on this can be found in the section "Findings", at the end of Appendix F.

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 except for the absence of LoA.

Prior to the submission of the Project Design Document and the Validation Report to the CDM Executive Board, the project shall receive the written approval of voluntary participation from the DNA of Brazil, including the confirmation that the Project assists the country in achieving sustainable development.

If implemented as designed, the project is likely to achieve the validated emission reductions of 150,801 tCO_2e as annual average during the first crediting period. LRQA would request the registration of the activity "Renova Area 1 Wind Power Project" to the CDM Executive Board as a CDM project activity, after the issuance of LoA following DNA review of the Validation Report.

Decision Maker

Andrew Ritchie

Climate Change Services Manager

18th January 2012

7 Appendices

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

Letter of Approval from the *Comissão Interministerial de Mudança Global do Clima* is yet to be received

7.2 Appendix B: List of documents reviewed

Category A documents (documents prepared by the PP)

1. Electricity Tariff price_Renova Area 1_Energy Auction Complete Result
2. Power Energy Purchase Agreement for Candiba
3. Memorandum of understanding for the sale of power generation equipment and related services including transportation and erection
4. Memorandum of understanding for the sale of power generation equipment and related services including transportation and erection, first amendment.
5. Project cost estimation study, Laureano & Meirelles Engenharia Ltda. (Portuguese)
6. Lifetimes of assets and facilities in the electricity sector, ANEEL (Portuguese)
7. Energy Production Assessment_Garrad Hassan Study_Serra do Salto
8. Energy Production Assessment_Garrad Hassan Study_Rio Verde
9. Energy Production Assessment_Garrad Hassan Study_Pindaí
10. Energy Production Assessment_Garrad Hassan Study_Licínio de Almeida
11. Energy Production Assessment_Garrad Hassan Study_Guirapá
12. Energy Production Assessment_Garrad Hassan Study_Guanambi
13. Energy Production Assessment_Garrad Hassan Study_Candiba
14. Energy Production Assessment_Garrad Hassan Study_Alvorada
15. O&M Service Proposal_Enex
16. Electricity Sector Benchmark calculation spreadsheet
17. Ex-ante emission reductions calculation worksheet “ex_ante_Renova_01.xls”
18. Investment analysis_Renova1_decision making date (150 MW) spreadsheet
19. Investment analysis_Renova1_new capacity (164.4 MW) spreadsheet
20. Environmental Installation Permits of wind farms Alvorada, Candiba, Guanambi, Guirapá, Licínio de Almeida, Pindaí, Serra do Alto and Rio Verde.
21. Environmental Impact Assessment_Renova1
22. Evidence of local stakeholders consultation
23. Acknowledgements of receipt from local stakeholders
24. Modalities of Communication Form
25. Project Design Document of Renova Area 1, Version 1 dated 24/02/2011
26. Project Design Document of Renova Area 1, Version 2 dated 30/06/2011
27. Project Design Document of Renova Area 1, Version 3 dated 28/11/2011
28. Prior Consideration Form sent to DNA and UNFCCC and acknowledgements of receipt

Category B documents (other documents referenced)

1. “Clean Development Mechanism Validation and Verification Manual”, version 01.2
2. CDM “Guidelines for Completing the Project Design Document and the Proposed New Baseline and Monitoring Methodologies”, version 7
3. CDM “Consolidated baseline methodology for grid-connected electricity generation from renewable sources”, ACM0002, version 12.1.0.

4. CDM “Tool for the Demonstration and Assessment of Additionality”, version 06.0
5. CDM “Guidelines on the Demonstration and Assessment of Prior Consideration of the CDM”, version 04
6. CDM “Guidelines on the Assessment of Investment Analysis”, version 05.
7. CDM “Guidelines on Common Practice” version 01.0
8. CDM “Tool to calculate the emission factor for an electricity system”, version 02.2.1
9. CDM “Guidelines for the Reporting and Validation of Plant Load Factors”, version 1.
10. CDM “Guidelines on Completeness Check of Requests for Registration”, version 01.0
11. Brazilian Interministerial Commission on Global Climate Change, Resolution No. 1 of 11th September 2003.
12. Schaeffer, R.; Szklo, S.A., 2000. Future electric power technology choices of Brazil: a possible conflict between local pollution and global climate change, Energy Policy 29 (2001) 355-369
13. Burton, J., 1998. Revisiting the Capital Asses Pricing Model, Dow Jones Asset Manager May/June, pp.20-28
14. Vieira, C. F. A.; Santos, C. C.; Lima, F. J. L.; Magalhães, R. A. ; Silva, E. M.; “Correlation between wind data generated in the project Reanalisys NCEP / NCAR and those observed in regions of the state of Ceará, "EOLUS - Laboratory for Advanced Research in Wind Energy - State University of Ceará”.
15. Electric Energy National Agency (ANEEL), resolution #77, 18 Aug 2004 (Electricity Transmission System usage fee)
16. Electric Energy National Agency (ANEEL), resolution #907, 11 Nov 2009 (Electricity Transmission System usage fee)
17. ANEEL Energy Generation Data Bank, BIG- Banco de Informações de Geração de Energia (2011 03 23)
18. CIMGC_Clarification note regarding the emission factors of the national integrated system
19. Brazilian National Treasury: http://www.tesouro.fazenda.gov.br/tesouro_direto/ and http://www.receita.fazenda.gov.br/principal/Ingles/SistemaTributarioBR/Taxes.htm
20. BMF&BOVESPA: http://www.bmfbovespa.com.br
21. Capital asset pricing , ISAE/FGV, Brazil http://www.carbonnews.com.br/downloads/wacc.pdf
22. Electricity tariff [BRL/MWh], Rosário and Rosário 3: http://www.ccee.org.br/cceeinterdsm/v/index.jsp?contentType=RESULTADO_LEILAO&vgnextoid=49f7364a3ef75210VgnVCM1000005e01010aRCRD&qryRESULTADO-LEILAO-CD-RESULTADO-LEILAO=9a9945
23. ISAE/FGV, Brazil: http://www.carbonnews.com.br/downloads/wacc.pdf.
24. Electrobras: list of activities qualified for PROINFA: http://www.eletrobras.gov.br/ELB/services/eletrobras/ContentManagementPlus/FileDownload.ThrSvc.asp?DocumentID={9B6832B3-F317-4BF6-A663-E466A250B8A7}&ServiceInstUID={9C2100BF-1555-4A9D-B454-2265750C76E1}&InterfaceInstUID={18F15ED9-1E73-4990-8CC6-F385CE19FF17}&InterfaceUID={72215A93-CAA7-4232-A6A1-2550B7CBEE2F}&ChannelUID={B38770E4-2FE3-41A2-9F75-

DFF25AF92DED}&PageUID={ABB61D26-1076-42AC-8C5F-64EB5476030E}&BrowserType=IE&BrowserVersion=6

7.3 Appendix C: List of persons interviewed

Bruna Neves Napoli	Renova	Environmental Manager
Daniel T. Famano	Renova	Finance Planning Manager
Iris Gobato Gercov	Key Associados	Consultant
Laura Araújo Alves	Key Associados	Project Manager
Marcela P. Paranhos	Key Associados	Carbon Market Analyst
Matheus L. A. Brito	Key Associados	Carbon Market Analyst
Rodrigo Bota	Renova	Implantation Superintendent

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

The PDD version 1 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 22nd March 2011 – 20th April 2011 as per http://cdm.unfccc.int/Projects/Validation/DB/XMPL2JRB0KUCLA2A31XXO20P0YLASJ/view.html .

No comment was received during this period.

7.5 Appendix E: Certificate of Appointment

Validation of "Renova Area 1 Wind Power Project"

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	Assigned Roles
Cláudia Freitas	Team Leader until 20th July 2011
Iuri de A. Barroso	Team Member and Leader from 20th July 2011
Márcio Pragana	External Sector expert supporting the validation team
Prabodha C. Acharya	Technical Reviewer / Sector Expert
Andrew Ritchie	Decision Maker Reviewer

Signed by

Decision Maker

Andrew Ritchie
Climate Change Services Manager

18th January 2012

7.6 Appendix F: Validation Protocol and findings log

This document has been produced by the LRQA Validation Team following 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 Manual (VVM) 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.

Where LRQA has identified issues requiring corrective action or clarification, a reference is made in the 'Conclusion' column, and details **are stated in the section marked 'Findings'.**

	Validated situation	**Conclusion**
SECTION 1. Approval		
Host Country Approval		
1. Has the Host country DNA provided a written approval?	Yes ☐ No ☐ NA☐ According to the Brazilian DNA´s rules, the issuance of the Letter of Approval is conditional to the presentation of the DOE´s validation report by PP to the DNA (Resolution No. 1 of September 11, 2003).	Pending
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 ☐ No ☐ NA☐ According to the Brazilian DNA´s rules, the issuance of the Letter of Approval is conditional to the presentation of the DOE´s validation report by PP to the DNA (Resolution No. 1 of September 11, 2003).	Pending
3. Mention the means of validation employed to assess the authenticity of the Letter of Approval. Indicate the source of the LoA (e.g. PP or directly from the DNA)	To be completed after presentation of LoA, at the final stage of validation.	Pending

	Validated situation	Conclusion
4. 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) The proposed CDM project activity contributes to the sustainable development of the country; (d) It refers to the precise proposed CDM project activity title in the PDD being submitted for registration.	Yes ☐ No ☐ NA☐ To be completed after presentation of LoA, at the final stage of validation.	Pending
5. Is the letter of approval unconditional with respect of (a) to (d) above	Yes ☐ No ☐ NA☐ To be completed after presentation of LoA, at the final stage of validation.	Pending
6. Does the LoA from the host party acknowledge the bundle activity (if applicable)	Yes ☐ No ☐ NA☐ To be completed after presentation of LoA, at the final stage of validation.	Pending
Annex I Party Approval		
7. Has the Annex I country DNA provided a written approval?	Yes ☐ No ☐ NA☒ 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.	OK
8. Confirm that the letter has been issued by the Party's DNA and is valid for the proposed CDM project activity under validation	Yes ☐ No ☐ NA☒	NA

	Validated situation	Conclusion
9. Mention the means of validation employed to assess the authenticity of the Letter of Approval Indicate the source of the LoA (e.g. PP or directly from the DNA)		NA
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 ☐ No ☐ NA☐	NA
11. Is the letter of approval unconditional with respect of (a) to (c) above	Yes ☐ No ☐ NA☐	NA
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.	To be completed after presentation of LoA, at the final stage of validation.	Pending

		Validated situation		Conclusion
SECTION 2. Participation				
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 Annex 1 of the PDD and with the contact details in the MoC.	Host Party PP name in PDD/ A.3	Renova Energia S/A and Key Consultoria e Treinamento Ltda.	OK
		Host Party PP name in PDD/ Annex 1	Renova Energia S/A and Key Consultoria e Treinamento Ltda.	
		Host Party PP name in MoC	Renova Energia S/A and Key Consultoria e Treinamento Ltda.	
		Annex 1 Party PP name in PDD/ A.3	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.	
		Annex 1 Party PP name in PDD/ Annex 1		
		Annex 1 Party PP name in MoC		
2	Confirm that each of the PPs has been approved by at least one Party involved	Yes ☐ No ☐ NA☐ To be completed after presentation o LoA, at the final stage of validation. According to the Brazilian DNA´s rules, the issuance of the Letter of Approval is conditioned to the presentation of the DOE´s validation report by PP to the DNA (Resolution No. 1 of 11th September 2003).		Pending
3	Confirm that no entities other than those approved as PPs are included in section A.3 of PDD.	Yes ☐ No ☐ NA☐ To be completed after presentation o LoA, at the final stage of validation.		Pending

		Validated situation	Conclusion
4	Ensure that the approval of participation has been issued from the relevant DNA and if in doubt verify this with the corresponding DNA.	To be completed after presentation of LoA, at the final stage of validation.	Pending
5	Has the MoC been completed as per the latest "Procedures for MoC between the project participants and the Executive Board"? - No modifications to the template/form should be made and each document should be clearly dated - 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, e-mail 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.	Yes ☒ No ☐ NA☐ The document "MoC_Renova 1_signed.pdf" was assessed and approved. Joint focal point authority was assigned to Key Consultoria e Treinamento Ltda. (primary signatory Mr. Carlos Delpupo and alternate signatory Mr. Matheus Alves de Brito) and Renova Energia S.A. (primary signatory Mr. Daniel Famano and no alternate signatory). The Statement of Agreement was appropriately signed by the PPs. MoC is consistent with the PDD and the information is in accordance with the form F-CDM-MOC and the requirements of the procedures.	OK

	Validated Situation	Conclusion
SECTION 3. Project design document		
1. Is the project activity Small Scale or Normal Scale	Normal Scale ☒ Small Scale ☐ Bundled Small Scale ☐ Nominal power > 15 MW (decision 17 CP.7).	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 ☒ No ☐ CDM-PDD template Version 03 and Guidelines for Completing CDM-PDD version 07, which are the current versions available in UNFCCC CDM website, are used, which follows the Guidelines for completing the project design document (CDM-PDD) and the proposed new baseline and monitoring methodologies Version 7 - EB 41 Annex 12	OK

	Validated situation	Conclusion
SECTION 4. Project description		
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.	CL 01: • Issue raised: The role of the "National Electric System Operator (Operador Nacional do Sistema Elétrico - ONS) - 12th module" is not clearly described in the PDD. • Assessment of response: The role of the National Electric System Operator -12th module was adequately explained in the PDD Version 02 section B.7.2. CL1 was closed out. Description of project activity (PA): the technical description of PA was assessed against the approved methodology (ACM0002). The description of the project activity was validated based on review of the PDD and supporting documents, field interviews with PP that included the overall design document, technical specification, estimation of electricity generation by the third party contractor, power purchase agreements, etc. Similar registered projects (Osório Wind Power Plant Project – Brazil, ref. 0603, Liaoning Fuxin Gaoshanzi 100.5MW Wind Power Project – China, ref. 3344 and Zafarana 8 - Wind Power Plant Project, Arab Republic of Egypt, ref. 3501), were considered as a way to confirm that no material information was missing.	CL 01, closed OK

<table>
<tr><th></th><th>Validated situation</th><th>Conclusion</th></tr>
<tr><td>2. Confirm that the exact project location is provided in the PDD with Geographical coordinates and check the accuracy of them.

Please include here the Geographical coordinates:</td><td>The Renova Area 1 Wind Power Project is a greenfield project located in the municipalities of Caetité and Guanambi, state of Bahia, Brazil. The reference geographic coordinates of the units of the project activity, in decimal degrees, are given below:

<table>
<tr><th>Unit Name</th><th>Latitude</th><th>Longitude</th></tr>
<tr><td>Alvorada</td><td>- 14.1852</td><td>- 42.5911</td></tr>
<tr><td>Candiba</td><td>- 14.1857</td><td>- 42.6466</td></tr>
<tr><td>Guanambi</td><td>- 14.1977</td><td>- 42.6308</td></tr>
<tr><td>Guirapá</td><td>- 14.1544</td><td>- 42.6312</td></tr>
<tr><td>Licínio de Almeida</td><td>- 14.1886</td><td>- 42.6596</td></tr>
<tr><td>Pindaí</td><td>- 14.2093</td><td>- 42.6552</td></tr>
<tr><td>Rio Verde</td><td>- 14.1640</td><td>- 42.6006</td></tr>
<tr><td>Serra do Salto</td><td>- 14.1680</td><td>- 42.6329</td></tr>
</table>

It was confirmed through interviews with PP´s personnel, photographs and satellite images that the site reflects the description in the PDD, i.e., that no renewable power plant was operated prior to the implementation of the project activity (greenfield plant).
The plant load factors considered by the PP were validated through the analysis of the wind study reports prepared by the subcontracted engineering company Garrad Hassan. The expected lifetime of the WEG (20 years) was validated by the study “Lifetimes of assets and facilities in the electricity sector” from ANEEL.</td><td>OK</td></tr>
</table>

	Validated situation		Conclusion
3. If the team did not undertake a physical site inspection, describe the justification as approved by the CDM Quality Manager. (VVM 01.2: 60-61) Describe briefly the physical site inspection: Travel details and installations, facilities and buildings visited.	Considering that, according to the PP´s, the project activity is a greenfield plant and that the construction of foundations is still in progress, the validation team decided to conduct the visit in the PP´s office in São Paulo, where the project description was assessed through review of the project design, wind availability study, investment decision, discussion with key persons, site photographs and satellite images of the identified project site. All elements of the project description were validated during the visit to the PP´s head office. The process followed was in line with the requirements stated in the paragraph 62 of the VVM Version 01.2 It was confirmed that no renewable power plant was operated prior to the implementation of the project activity (greenfield plant). The PP have provided the wind studies for determining the plant load factor, where the description of the methodology applied is described, including the wind monitoring equipment and the sources of raw data. The contracted engineering company has a good reputation in the sector and was considered trustworthy. This followed the requirements stated in the guidelines for reporting and validation of plant load factors. The process of local stakeholders' consultation was validated through the letters of invitation and the corresponding confirmations of receipt. As stated in the validation protocol in appendix F section 8, the team confirmed during the visit that the consultation process was conducted as per resolution no 7 of the Brazilian DNA. The PP´s approach to the environmental issues (installation permits, environmental impacts assessment and mitigation measures plan) was validated during the site visit, as stated in the validation report in appendix F section 9.		OK
4. If the proposed CDM project activity involves the	Pre-project	Project activity	OK

		Validated situation	Conclusion
	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.	NA. The project activity does not involve the alteration of an existing installation or process. According to the PDD and as confirmed during the site visit, the proposed project activity consists of the installation of a grid-connected renewable power generation facility at a site where no renewable power plant was operated prior to the implementation of the project activity. (Greenfield plant).	
5.	Potential public funding for the project from Parties in Annex I shall not be a diversion of official development assistance (ODA).	According to the PDD, A.4.5, there is no public funding involved on this project activity. As discussed during the site visit, there will be no public funding from Annex I parties or from ODA. The resources for the project will come from equity and financing from the National Bank of Economic and Social Development – BNDES.	OK
6.	If the project activity is a small scale one, confirm that it is not a debundled component of a large scale project, in accordance with appendix C of the simplified M&P for SSC CDM project activities and the Guidelines for assessment of de-bundling for SSC project activities.	The project is not a small scale one. The output capacity (total nominal capacity: 164.4 MW, according to PDD A.2) is greater than 15 MW (decision 17 CP.7).	NA

	Validated situation	Conclusion
SECTION 5. Baseline and monitoring methodology		
1. Has the baseline and monitoring methodologies selected by the project participants been previously approved by the CDM Executive Board, i.e. does it appear on the methodologies page of the UNFCCC website?	Yes ☒ No ☐ NA☐ Consolidated baseline methodology for grid-connected electricity generation from renewable sources ACM0002 Version 12.1.0 is applied. http://cdm.unfccc.int/methodologies/DB/C505BVV9P8VSNNV3LTK1BP3OR24Y5L The methodology refers to the below methodological tools. • Tool to calculate the emission factor for an electricity system; • Tool for the demonstration and assessment of additionality; • Combined tool to identify the baseline scenario and demonstrate additionality; • Tool to calculate project or leakage CO_2 emissions from fossil fuel combustion. The project activity follows the Tool for the demonstration and assessment of additionality (Additionality tool) and Tool to calculate the emission factor for an electrical system. Combined tool to identify the baseline scenario and demonstrate additionality is not applied. Tool to calculate project or leakage CO_2 emissions from fossil fuel combustion is not applied as the project activity does not involve fossil fuel combustion.	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.	The project is not a small scale one. The output capacity (total nominal capacity: 164.4 MW, according to PDD A.2) is greater than 15 MW (acc. to decision 17 CP.7).	NA
3. If the project activity is a Small Scale one; which approved small scale methodology does the project apply? Confirm that the SSC meth is applied in conjunction with the general guidelines to SSC CDM methodologies.	The project is not a small scale one. The output capacity (total nominal capacity: 164.4 MW, according to PDD A.2) is greater than 15 MW (acc. to decision 17 CP.7).	NA

	Validated situation	Conclusion
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 proposed project activity was confirmed to meet the applicability conditions of the selected methodology and methodological tools as below. Out of the tools referenced in the applied methodology, Combined tool to identify the baseline scenario and demonstrate additionality is not used in the project case. ACM0002 Version 12.1.0 and Tool to calculate the emission factor for an electricity system has been amended and the current version i.e Version 02.2.1 is used. The project activity follows the Tool for the demonstration and assessment of additionality (Additionality tool), Version 06.0,	OK

No.	Applicability conditions in the ACM0002 Version 12.1.0.	Information in the PDD	Steps taken to assess PDD information	Conclusion
Applicability condition of ACM0002				
1	*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.*	PDD B.2: "The project activity is the installation (…) of a wind power plant (…)";	The project activity was confirmed as installation of wind power plant by reviewing the project documentation, including the overall design document and PPA.	OK
2	*In the case of capacity additions, retrofits or replacements (except for wind, solar, wave or tidal power capacity addition projects which use Option 2: on page 10 to calculate the parameter $EG_{PJ,y}$): the existing plant started commercial operation prior to the start of a minimum historical reference period of five years, used for the calculation of baseline emissions and defined in the baseline emission section, and no capacity expansion or retrofit of the plant has been undertaken*	PDD B.2: "The proposed project activity consists in the installation of a grid-connected renewable power generation facility at a site where no renewable power plant was operated prior to the implementation of the project activity".	The project activity was confirmed as a new wind power plant by reviewing the project documentation and site visit/discussion with PP and review of project documents, satellite imageries. .	OK

	between the start of this minimum historical reference period and the implementation of the project activity.			
3	*In case of hydro power plants, one of the following conditions must apply:* • *The project activity is implemented in an existing reservoir, with no change in the volume of reservoir; or* • *The project activity is implemented in an existing reservoir, where the volume of reservoir is increased and the power density of the project activity, as per definitions given in the Project Emissions section, is greater than 4 W/m^2; or* • *The project activity results in new reservoirs and the power density of the power plant, as per definitions given in the Project Emissions section, is greater than 4 W/m^2.*	PDD B.2: "The project activity does *not* involve: • Switching from fossil fuels to renewable energy sources at the site of the • project activity; • Biomass fired power plants; • Hydro power plants that result in new reservoirs or in the increase in existing reservoirs where the power density of the power plant is less than 4 W/m^2."	N/A	-
Inapplicability condition of ACM0002				
4	*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.*	PDD B.2: "The project activity does *not* involve: • Switching from fossil fuels to renewable energy sources at the site of the • project activity; • Biomass fired power plants; • Hydro power plants that result in new reservoirs or in the increase in existing reservoirs where the power density of the power plant is less than 4 W/m2."	The project activity is a Greenfield development of a wind power plant and no fossil fuel fired power plant existed at the project site. This was confirmed by reviewing the project documentation and interviewing the PP.	OK
5	*Biomass fired power plants.*		N/A	-
6	*Hydro power plants that result in new reservoirs or in the increase in existing reservoirs where the power density of the power plant is less than 4 W/m^2.*		N/A	-
Applicability condition of "Tool to calculate the emission factor for an electricity system"				

7	*The geographic and system boundaries for the relevant electricity grid can be clearly identified and information on the characteristics of the grid is available.*	PDD, *Calculation of* $EF_{grid,CM,y}$ The project plants will serve Brazilian Interconnected System (SIN). The Brazilian DNA has published the delineation of SIN to be adopted for the purposes of CDM projects. As per Resolution Nº8 of the Brazilian DNA, the electric grid considered in this project activity is considered as a single system consisted by the sub-markets of SIN as the definition of the electric system of the project.	DNA of the host country publishes official information of the national grid system to meet the requirements of the Tool.	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 accordance with the guidance provided by the CDM Executive Board Describe the clarification request and response.	N/A	-
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 accordance with the guidance provided by the CDM Executive Board. Describe the request for revision or deviation and approval by the CDM Executive Board.	N/A	-

	Validated situation	Conclusion
8. 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 but a determination is made that the approved methodology(ies) is/are applicable to the project activity, provide here information about them in relation to the applicability criteria and justify the determination.	There were no identified emissions from the project activity besides those addressed by the methodology.	OK

	Validated situation	Conclusion
SECTION 5a. 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 ☒ No ☐ NA☐ It was confirmed through interviews with PP´s personnel, photographs and satellite images that the project is a greenfield plant. As result, there are no processes or equipment that be affected by the project activity.	OK
2. 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 required by the methodology have been included within the project boundary. (CO_2 from the grid for the baseline; No emissions for the project activity). No additional emission source was identified during the desk review or the site visit. As a zero emission electricity generation project, CO_2 emissions in the baseline scenario only are the gas and emission source included in the project boundary. This was confirmed appropriate as detailed below.	OK

Gases And Sources Included In The Project Boundary						
	Source	**Gas**	**Inc./Exc. PDD**	**Justification PDD**	**Steps Taken To Assess PDD Justification**	**Conclusion**
BASELINE	Power plants supplying energy to SIN	CO_2	Yes	Main emission source	According to ACM0002 and the Tool to calculate the emission factor for an electricity system version 2.	OK
		CH_4	No	Main emission source		OK
		N_2O	No	Main emission source		OK

PROJECT	For geothermal power plants, fugitive emissions of CH_4 and CO_2 from non-condensable gases contained in geothermal steam.	CO_2, CH_4 and N_2O	No	Not applicable	Verification during site visit (description of the project activity as mentioned in documents such as environmental permits). This is in accordance with the similar registered project Osório Wind Power Plant Project, ref 0603.	OK
	CO_2 emissions from combustion of fossil fuels for electricity generation in solar thermal power plants and geothermal power plants.	CO_2, CH_4 and N_2O	No	Not applicable	Verification during site visit (description of the project activity as mentioned in documents such as environmental permits). This is in accordance with the similar registered project Osório Wind Power Plant Project, ref 0603.	OK
	For hydro power plants, emissions of CH_4 from the reservoir.	CO_2, CH_4 and N_2O	No	Not applicable		OK

	Validated situation	Conclusion
SECTION 5b. Baseline identification		
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.	The identified baseline scenario and the description of the activities that would take place in the absence of the proposed CDM project activity are clearly described in item B.4 of PDD and are in accordance with ACM 0002 version 12.1.0.	OK
2. Confirm that any procedure contained in the methodology to identify the most reasonable baseline scenario, has been correctly applied.	Yes ☒ No ☐ NA☐ According to the Tool for the demonstration and assessment of additionality, project activities that apply the Tool in context of approved consolidated methodology ACM0002, only need to identify that there is at least one credible and feasible alternative that would be more attractive than the proposed project activity. Among other alternative scenarios, provision of equivalent amount of electricity by the grid system is considered as a credible and feasible alternative that satisfies the requirement of the methodology/tool. According to the ACM0002, if the project activity is installation of a new grid-connected renewable power plant/unit, the baseline scenario is the following: *Electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources, as reflected in the combined margin (CM) calculations described in the "Tool to calculate the emission factor for an electricity system".* The processes followed are detailed in the sections below.	OK

	Validated situation	Conclusion
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, i.e. 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.)	Step 1 of the Tool for the demonstration and assessment of additionality is followed as appropriate.	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:	As confirmed above, provision of equivalent amount of electricity by the grid system is considered as a credible and feasible alternative that satisfies the requirement of the methodology/tool.	OK

Alternative Scenario Ref.	Description in the PDD	Cross-checked with	Validation Opinion
#1	The project activity undertaken without being registered as a CDM project activity;	This is a scenario that the proposed project activity would be implemented without a help of CDM and all the project documentation except that applying carbon financing is applicable.	This is considered in the assessment of the additionality. Investment analysis concludes that the project activity does not provide enough financial return to meet the benchmark and therefore cannot be considered as a baseline scenario.
#2	The continuation of the current situation (no project activity undertaken).	ACM0002 and a similar registered project activity (Osório Wind Power Plant Project, Brazil – ref. 0603).	This alternative shows the current situation that has no issue of compliance with the mandatory laws and regulations of the host country and faces no barrier to implementation hence is considered as reliable and credible.

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.	The baseline scenario identified in the PDD, i.e. the operation of grid-connected power plants and the addition of new generation sources, is the current practice and conforms to the methodology applied (ACM0002 version 12.1.0) No other plausible and credible alternatives to the project activity were identified, which are economically attractive and technically feasible. Provision of equivalent amount of electricity by the grid system is considered as a credible and feasible alternative and it satisfies the requirement of the methodology/tool.	OK
6. Is the identified baseline scenario in line with regulatory or legal requirements and takes into account relevant national and/or sectoral policies?	Yes. The scenario is legally compliant and is current practice. The Electricity Regulatory Agency determines a sectoral policy of 50% reduction on tariffs for the use of electrical systems for energy transmission and distribution by wind power plants.	OK
7. Is this identification supported by official and/or verifiable documents (e.g. studies, web pages, certificates, etc?	Yes. The scenario is legally compliant and is current practice.	OK

	Validated situation	Conclusion
SECTION 5c. Algorithms and/or formulae used to determine emission reductions		
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. Confirm that adequate justification has been provided for selection between different options.	The equations and parameters in the PDD were compared to those in the methodology ACM0002 version 12.1.0 and were found to have been correctly applied. There was no need for selection between options.	OK

	Validated situation	Conclusion
2. Verify the justification given in the PDD for the choice of data and parameters used in the equations to determine estimated emission reductions. 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. 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. List all data and parameters provided in the PDD in the tables in next column.		OK. The estimates provided in the PDD for these data and parameters are reasonable and are based on the wind certification reports (plant load factor → *EGfacility,y*) and the "Tool to calculate the emission factor for an electricity system" version 02.1.0 (*EFgrid,OM,y, EFgrid,BM,y, and EFgrid,CM,y).*

Data/Parameter title: $EG_{facility,y}$	Comments
Title in line with methodology?	yes
Fixed throughout the crediting period?	No
Data unit correctly expressed?'	yes
Appropriate description of parameter?	yes
Source clearly referenced?	yes
Value provided is considered reasonable?	yes (ex ante value)
Has this value been verified?	yes (ex ante value)
Choice of data correctly justified?	yes
Measurement method correctly described?	yes

Data/Parameter title: $EF_{grid,OM,y}$	Comments
Title in line with methodology?	yes
Fixed throughout the crediting period?	No
Data unit correctly expressed?	yes
Appropriate description of parameter?	yes
Source clearly referenced?	yes
Value provided is considered reasonable?	yes (ex ante value)
Has this value been verified?	yes (ex ante value)
Choice of data correctly justified?	yes
Measurement method correctly described?	yes
Data/Parameter title: $EF_{grid,CM,y}$	Comments
Title in line with methodology?	yes
Fixed throughout the crediting period?	No
Data unit correctly expressed?	yes
Appropriate description of parameter?	yes
Source clearly referenced?	yes
Value provided is considered reasonable?	yes (ex ante value)
Has this value been verified?	yes (ex ante value)
Choice of data correctly justified?	yes
Measurement method correctly described?	yes

<table>
<tr><th></th><th>Validated situation</th><th>Conclusion</th></tr>
<tr><td>2. continuation</td><td>
<table>
<tr><td>Data/Parameter title: $EF_{grid,BM,y}$</td><td></td></tr>
<tr><td>Title in line with methodology?</td><td>yes</td></tr>
<tr><td>Fixed throughout the crediting period?</td><td>No</td></tr>
<tr><td>Data unit correctly expressed?</td><td>yes</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 (ex ante value)</td></tr>
<tr><td>Has this value been verified?</td><td>yes (ex ante value)</td></tr>
<tr><td>Choice of data correctly justified?</td><td>yes</td></tr>
<tr><td>Measurement method correctly described?</td><td>yes</td></tr>
</table>
</td><td></td></tr>
<tr><td>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.</td><td>All assumptions and data used by PPs are mentioned in the PDD including their references and sources. The sources of data are correctly quoted and interpreted in the PDD in section B.6.</td><td>OK</td></tr>
<tr><td>4. Confirm that all estimates of the baseline emissions can be replicated using the data and parameter values provided in the PDD.</td><td>The calculation of estimates of the baseline emissions were cross-checked based on the data sources mentioned in the PDD section B.6.3.</td><td>OK</td></tr>
</table>

	Validated situation	Conclusion
SECTION 6. Additionality of a project activity		
1. Does the PDD clearly describe how the proposed CDM project activity is additional?	Yes ☒ No ☐ - The identification of alternative scenarios, investment analysis and discussion of common practice, as assessed during the desk review and the site visit. For details, please refer to the items 6.a to 6.e below in this protocol. - Evidence of prior consideration of CDM (prior consideration forms sent to the Host Party DNA and to the UNFCCC secretariat on 09th June 2010). (http://cdm.unfccc.int/Projects/PriorCDM/notifications/index_html), according to the Guidance on the Demonstration and Assessment of Prior Consideration of the CDM.	OK
2. List the documents and tools provided by the CDM Executive Board used to demonstrate the additionality	1. Tool for the demonstration and assessment of additionality 2. Guidance on the demonstration and assessment of prior consideration of the CDM 3. Guidelines on the assessment of investment analysis,	OK

	Validated situation	Conclusion
SECTION 6a. 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 it is in accordance to the Glossary of CDM Terms?	Yes ☒ No ☐ The starting date of the project activity (14th December 2009, the realization of Brazilian 2nd Reserve Power is mentioned in the PDD, in section C.1.1.) According to the CDM Glossary, the start date shall be considered to be the date on which the PP has committed to expenditures related to the implementation or related to the construction of the project activity. The binding effect of the MoU between the PP and the seller regarding the manufacturing, delivering, erecting and commissioning of wind turbine generators would only take place in the case the PP won the auction held on 14th December 2011. The MoU was necessary to define the CAPEX, which represents the majority of the total investment. Only during the auction, with the information on the price of the energy to be contracted, is that the investors had all the information for the investment decision making. Thus, although the binding document was signed on 4th December 2011, the event which made this commitment effective only occurred on 14th December 2011, which was considered the project start date.	OK
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.		

	Validated situation	Conclusion
2. For a project activity with a start date on or after the 2nd 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 If such a notification has not been provided by the PPs within six months of the project activity start date, determine that the CDM was not seriously considered in the decision to implement the project activity	The start date of the project activity is after 02/08/2008. The notice of prior CDM consideration was made to the UNFCCC secretariat and to the DNA of the host country on 09/06/2010. The validation team confirmed the display on the UNFCCC CDM website (acknowledgement of receipt included in website on 11/06/2010, http://cdm.unfccc.int/Projects/PriorCDM/notifications/index_html.) and acknowledgement letter issued by the DNA." The prior consideration of the benefits of the CDM in the decision to undertake the project activity was assessed and validated by the assessment team following the Guidance on the Demonstration and Assessment of Prior Consideration of the CDM EB41 Annex 46. The adoption of the realization of Brazilian 2nd Reserve Power auction as the project starting date was assessed and considered reasonable. As the DNA and UNFCCC were notified within the 6 months period from the project activity start date, the prior consideration requirement is therefore validated.	OK

	Validated situation	Conclusion
3. For a project activity with a start date before the 2nd August 2008, check the following requirements through document reviews to assess the PPs prior consideration of the CDM: (a) Evidence that must indicate that awareness of the CDM prior to the project activity start date, and that the benefits of the CDM were a decisive factor in the decision to proceed with the project. (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. The time gap between the documented evidence of prior CDM consideration and continuing and real actions shall be within the period required by the Guidance on prior consideration of the CDM If evidence to support the serious prior consideration of the CDM as indicated above that is authentic is not available, determine that the CDM was not considered in the decision to implement the project activity.	N/A.	N/A.

<table>
<tr><th></th><th>Validated situation</th><th>Conclusion</th></tr>
<tr><td colspan="3">SECTION 6b. Identification of alternatives</td></tr>
<tr><td>1. Does the PDD identify credible alternatives to the project activity, in order to determine the most realistic baseline scenario?
Assess this list of alternatives and ensure that:
(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;
(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;
(c) The alternatives comply with all applicable and enforced legislation.</td><td>LIST OF ALTERNATIVES<table><tr><th>No</th><th>Description in the PDD</th><th>Describe why it is credible and complete</th></tr><tr><td>1</td><td>The project activity undertaken without being registered as a CDM project activity (PDD, page 12)</td><td>This is considered in the assessment of the additionality. If barriers prevent the implementation, this cannot be considered as a baseline scenario.</td></tr><tr><td>2</td><td>The continuation of the current situation (no project activity undertaken).PDD page 12.</td><td>This alternative shows the current situation that has no issue of compliance with the mandatory laws and regulations of the host country and faces no barrier to implementation hence is considered as reliable and credible.</td></tr></table></td><td>OK.
Please refer discussion in section 5b above.
The list of alternative scenarios contains all plausible alternatives, considering the current practice in the sector.</td></tr>
</table>

	Validated situation	Conclusion
SECTION 6c. 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;	The financial assumptions, parameters and calculations were assessed during the desk review and the site visit and were considered reasonable and accurate. The period of assessment (24 years) reasonably reflects the period of expected operation of the underlying project activity (technical lifetime) and is in accordance with to the Guidelines on the Assessment of Investment Analysis. A 24 year period was considered for the calculation of equity IRR, being 2 years for the construction, 20 years for the operation and 2 additional years for the completion of the billing of receivables (as explained in the PDD page 17: "The "Annex II – Reserve Power Contract" of the Auction Rules states that the end of the reserve power contract is set in 30th of June 2032 and that this date does not affect rights or obligations of the parts that occurred previously to this event (paragraphs 4.1 and 4.6)). As the variable income is received in 24 monthly instalment payments of the next quadrennium (paragraph 8.14 of the Annex II – Reserve Energy Contract), two years must be added after the end of the PPA in order to account variable income receivables". A 20 year operation period was considered in the financial analysis with no residual value, which is in accordance with the 20 year lifetime validated by the sector expert and the 5% depreciation considered as per the ANEEL regulations. Please refer to line 48 of the Investment analysis worksheet (Contracted Energy). The operation period includes 6 months in 2012, plus 19 years between 2013 and 2031 and another 6 months in 2032, from 1st January to 30th June.	OK

	Validated situation	Conclusion
1. (continuation)	The reason for splitting the project into 8 wind farms is the existence of a fiscal benefit that is applicable to renewable energy entrepreneurships with up to 30MW of nominal capacity: the Federal Government concedes a 50% subsidy on the Transmission tariff (TUST). Thus, for the reasons stated above the decision was made taking into account a single complex, but the project is developed as 8 wind farms in order to have access to TUST fiscal benefit. It´s noteworthy that this benefit is an E- policy, and thus the investment analysis presented to demonstrate the additionality of the project activity does not consider such benefit. Other reasons for considering the present project activity as a sole Wind Farm Complex instead of 8 different Wind Farms. • The electricity to be generated by the project activity was fully commercialised through a sole bid at the 2nd Brazilian Auction of Reserve Energy. Thus, the project activity was considered as one sole Wind Farm Complex during the investment decision. • All wind farms belonging to Area 1 are located in the same region and share many physical structures, such as substation, connection bay and transmission. The implementation of these structures individually for 8 different Wind Farms would dramatically increase CAPEX and make each complex financially unfeasible. In a similar way, other costs such O&M and administrative costs also benefit from economies of scale, which means that the unitary costs tend to reduce as the size of the complex increases. • Further to that, quotation and commercial proposals for equipment and services were ordered to Area 1 Complex, not to the 8 different wind farms. Please refer, for instance, to the Memorandum of Understanding with General Electric, which accounts alone for approximately to 70% of the CAPEX. This MoU defines the commercial terms for the supply of 100 aero generators to Area 1 Complex. Thus, the project activity was considered as one sole Wind Farm Complex since its inception.	OK

	Validated situation	Conclusion
1. (continuation)	Special attention was given in the assessment to the estimation of plant load factor, whose underestimation could adversely impact the financial analysis and demonstration of additionality, as well as the ex-ante baseline emission calculations. The plant load factors were determined by a third party contracted by the project participants, according to the CDM Guidelines for the Reporting and Validation of Plant Load Factors version 1. The plant load factors were validated through the assessment of the studies of energy production forecast, prepared by Garrad Hassan for each of the eight wind farms in the project. The project activity presents a significant change between the date of investment decision making and the beginning of project implementation, regarding the nominal capacity of the wind turbine model used on the wind farms. Since the project´s date of decision making (14th December 2009, the date of the 2nd Energy Reserve Auction), the turbine model was changed from a 1.5MW to a 1.6MW and 3 wind turbines were added to the wind farms, increasing the total installed capacity from 150MW to 164.4MW. In its former configuration, the project presented a CAPEX of 3,927,479.86 R$/MW and a Real Equity IRR of 7.59%, which was considered for the investment decision making. Due to the increase of the wind turbine nominal capacity and to the acquisition of 3 additional turbines, reaching a total of 103 wind turbines, the project had an increase of the nominal capacity from 150 MW to 164.4 MW, already approved by ANEEL (National Energy Agency) on February 11, 2011. In the new arrangement, the project presents a CAPEX of 3,946,808.79 R$/MW and the Real Equity IRR is 6.35%. All the IRR calculations were validated considering the conditions before and after the project´s capacity increase. The equity IRR after capacity increase (6.35%) remained lower than the benchmark (16.67%). The validation team concluded that the change in the installed capacity of the wind farms does not compromise the project´s additionality. The validation team has verified that the Brazilian Incentive Program for Alternative Sources of Electric Energy (PROINFA), created by the Brazilian Electricity Regulatory Agency (ANEEL) gives comparative advantages to less emissions-intensive over more emissions-intensive technologies and has been implemented after 11th November 2001 (law No. 10438 of 26th April 2002). The validation team agrees that the investment analysis presented to demonstrate the additionality of the project activity does not have to consider its benefits.	

<table>
<tr><th></th><th>Validated situation</th><th>Conclusion</th></tr>
<tr><td>1. (continuation)</td><td>
<table>
<tr><th>WIND FARM</th><th>Nominal installed capacity (MW), before and after capacity increase</th><th>Estimated Load Factor (P50), %</th><th>Net Energy production, GWh/year</th></tr>
<tr><td>Alvorada</td><td>7.5→ 8</td><td>56.8</td><td>39.8</td></tr>
<tr><td>Candiba</td><td>9 → 9.6</td><td>45.1</td><td>38.0</td></tr>
<tr><td>Guanambi</td><td>16.5 → 20.8</td><td>47.4</td><td>86.4</td></tr>
<tr><td>Guirapá</td><td>27 → 28.8</td><td>51.3</td><td>129.5</td></tr>
<tr><td>Licínio de Almeida</td><td>22.5 → 24</td><td>50.6</td><td>106.5</td></tr>
<tr><td>Pindaí</td><td>22.5 → 24</td><td>49.8</td><td>104.7</td></tr>
<tr><td>Rio Verde</td><td>30.0 → 30.0</td><td>57.3</td><td>150.7</td></tr>
<tr><td>Serra do Salto</td><td>15.00 → 19.2</td><td>46.7</td><td>78.6</td></tr>
<tr><td colspan="3">Total estimated net energy production:</td><td>734.2 GWh/year</td></tr>
</table>

The expertise of the subcontractor that conducted the studies (Garrad Hassam) was assessed through the consultation to sites in the internet (http://www.ukenergyinbrazil.com/br-companies-uk-profile.php?show=170 and http://www.axystechnologies.com/News/NewsEvents/WindSentineltouseGLGarradHassanProtocol/tabid/345/Default.aspx).
The lack of long-term wind data measurements in the region of the project activity actually hinders the estimation of energy production in Brazil. Despite the technical limitation resulting from it, which increases the uncertainties of energy production forecasts, the validation team concluded that the best available resources and practices were applied in estimating the production of energy by the project. Also, the estimated values of mean energy production were considered at 50% surplus probability (P50), which can be considered adequate from the standpoint of demonstration of additionality.
</td><td>OK</td></tr>
</table>

	Validated situation	Conclusion
1. (continuation)	One aero generator of Rio Verde wind farm will be limited by 0.4 MW (18 WTG of 1.6 MW plus 1 WTG of 1.2 MW). This is due to the existence of a fiscal benefit that is applicable to renewable energy entrepreneurships with up to 30MW of nominal capacity: the Federal Government concedes a 50% subsidy on the Transmission tariff (TUST). The validation team considers that this limitation does not present any negative impact on the project´s additionality. For more details regarding the assessment of financial analysis parameters, please refer to table below.	
2. Assess the correctness of computations carried out and documented by the project participants	The financial assumptions, parameters and calculations (worksheets “Investment analysis_Renova1_decision making date (150 MW)” and ”Investment analysis_Renova1_decision making date (164.4 MW)” were assessed during the desk review and the site visit and were considered reasonable and accurate.	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	The choice of the variables considered in the sensitivity analysis, the calculations and the reasoning presented in the PDD were assessed. The arguments presented were considered reasonable. Reference documentation was used as reference (electricity tariff, O&M costs, procurement contracts, etc.)	OK

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
Model for calculation of expected IRR (Capital Asset Pricing Model)	----------	----------	ISAE/FGV, Brazil: http://www.carbonnews.com.br/downloads/wacc.pdf. Accessed on 04/03/2011.	ISAE/FGV, Brazil: http://www.carbonnews.com.br/downloads/wacc.pdf Accessed on 27th April 2011. Paper "Revisiting The Capital Asset Pricing Model", http://www.stanford.edu/~wfsharpe/art/djam/djam.htm . Accessed on 27th April 2011. The validation team agrees that the model use for asset price determination is widely used and accepted in the market.	OK
Rf=Expected Return on a Risk Free Asset . Data used: Long Term Brazilian Treasury Bond (type NTN-B) of years 2006, 2007, 2008, 2009.	%	7,19%	Brazilian National Treasury: http://www.tesouro.fazenda.gov.br/tesouro_direto/	Brazilian National Treasury: http://www.tesouro.fazenda.gov.br/tesouro_direto/, average expected return on long term Treasury Bonds type NTN-B of years 2006-2009. The source of information, the Brazilian National Treasury, was validated.	OK
Rm= Expected Return on a Risky Asset (Market Return) Data used: Daily Return of Bovespa Index of years 2006, 2007, 2008, 2009 (until 11 Dec 2009).	%	Variable. Mean value in the considered period:15,18%	BMF&BOVESPA: http://www.bmfbovespa.com.br	http://www.bmfbovespa.com.br/indices/ResumoIndice.aspx?Indice=IBOVESPA&Idioma=pt-BR, values of stock market indexes on 29th December 2005 and 11th December 2009. The source of information, the Brazilian National Treasury, was validated.	OK

Ri= Expected Return on an Energy Sector Asset Data used: Daily Return of BMF&Bovespa's Electric Power Index (IEE) of years 2006, 2007, 2008, 2009.	%	Variable	BMF&BOVESPA: http://www.bmfbovespa.com.br	http://www.bmfbovespa.com.br/indices/ResumoIndice.aspx?Indice=IEE&Idioma=pt-BR, values of energy sector stock market indexes on 29th December 2005 and 11th December 2009. The source of information, BMF&BOVESPA, was validated.	OK
Ke , Expected rate of return IRR achieved with the assumptions described and calculated in the "Renova 1_Electricity Sector Benchmark.xlsx" spreadsheet.	%	16.57 in real terms.	Spreadsheet "Renova 1_Electricity Sector Benchmark.xlsx"	Cross-checking of calculations in the worksheet "Renova 1_Electricity Sector Benchmark.xlsx"	OK
Electricity Tariff	R$/MWh	144.94	Document published by CCEE regarding the 2ndReserve Power Auction (December/2009) results	Direct verification of data on the official site for wind farms Candiba, Alvorada, Guanambi, Guirapá, Pindaí, Serra do Salto, Licínio de Almeida and Rio Verde: http://www.ccee.org.br/cceeinterdsm/v/index.jsp?contentType=RESULTADO_LEILAO&vgnextoid=49f7364a3ef75210VgnVCM1000005e01010aRCRD&qryRESULTADO-LEILAO-CD-RESULTADO-LEILAO=9a994595ece85210VgnVCM1000005e01010a____&x=13&y=11 The source of information is a primary source, and was validated.	OK
Expected energy generation	GWh/year	696.70 (before capacity increase)	Wind Certifications made by Garrad Hassan	The values of net annual energy yield in the wind study carried out by Garrad Hassan were assessed and	OK

		734.2 (after capacity increase)		considered reliable. The values of net annual energy production considered in the financial analysis are for 50% surplus probability (P50), which was considered satisfactorily conservative from the standpoint of demonstration of additionality. The values in the Garrad Hassan reports were cross-checked against those in the financial analysis worksheet.	
Contracted energy	MW	72	Clause 6 of the "Annex II – Reserve Energy Contract" of the "2nd Reserve Power Auction Rules".	Cross-checking of calculations	OK
Capital Expenditure (CAPEX)	R$'	589,121,978.65 (before capacity increase) 648,855,365.08 (after capacity increase)	- Memorandum of Understanding (MoU) between the project proponent and the wind turbine generator supplier (original MoU of 4th December 2009 and its first amendment of 21st January 2010) and - "Implementation Study and Cost Estimative"	Cross-checking of calculations	OK
ICG (shared transmission costs from the plant to the integrated national system)	R$/MW.month	3,000.00	Presentation conducted by PSR Consultoria, slide # 30 (ICG = 3 R$/kWmês).File "ICG costs_PSR Analysis Presentation.pdf"	The expertise of the third party PSR Consultoria was assessed. http://www.psr-inc.com.br/portal/psr_pt_BR/iframe.html?altura=4000&url=/app/publicacoes.aspx http://www.chesf.gov.br/portal/page/portal/chesf_portal/paginas/comunicacao/comunicacao_ultimas_noticias/conteiner_noticias?p_pag_inicio=11&p_pag_fim=20&p_id_noticia=267054 The value of ICG was cross checked	OK

				with the investment analysis calculation spreadsheet.	
TUST (transmission costs within the integrated national system)	TUST	Variable, according to the resolution ANEEL # 907, 11 Nov 2009.	Technical Note 092/2009 from 09th November 2009	Cross-checking of calculations Obs.: The validation team agrees that incentive created by the Brazilian Electricity Regulatory Agency (which determines a sectoral policy of 50% reduction on tariffs for the use of electrical systems for energy transmission and distribution by wind power plants, among others), can be classified as a Type E- policy, according to the "Clarifications on the consideration of national and/or sectoral policies and circumstances in baseline scenarios" (EB22, annex 3,version 2).	OK
Operational Revenues	----------	Variable	This parameter is calculated from the parameters above, "Electricity Tariff" and "Expected energy generation"	Cross-checking of calculations Verification of calculations from the values of contracted energy, Contracted price, Excess Energy inside the tolerance limit and Excess Energy out of the tolerance limit (30% price discount) values. Spreadsheets "Investment analysis_Renova1_decision Making date (150 MW)" and "Investment analysis_Renova1_decision Making date (164.4 MW)"	OK

Cost and Expenses – O&M	R$/turbine/year	85,000.00	- O&M third party (ENEX) service proposal and -study "Future Electric Power Technology Choices of Brazil". Information available in page 13 (O&M for wind generation, 10 $/MWh.	The sources provided by the PP were assessed by the validation team and were considered reliable.	OK
Deductions from Revenues (Cofins, Contribution to Social Security Financing and PIS, Social Integration Program)	%	3.65	http://www.receita.fazenda.gov.br/principal/Ingles/SistemaTributarioBR/Taxes.htm	The source provided by the PP is an official source and was considered reliable.	OK
Sectoral Charges and Operational Expenses	----------	Variable	This parameter is calculated from the parameters above, "Cost and Expenses – O&M" , "ICG", "TUST".	Cross-checking of calculations	OK
Income Taxes	%	25% over a presumed profit of 8% of revenues	http://www.receita.fazenda.gov.br/pessoajuridica/dipj/2000/orientacoes/DeterminacaoLucroPresumido.htm; http://www.receita.fazenda.gov.br/aliquotas/contribpj.htm	The source provided by the PP is an official source and was considered reliable.	OK
CSLL (social contribution on net income)	%	9% over a presumed profit of 12% of revenues	http://www.receita.fazenda.gov.br/pessoajuridica/dipj/2000/orientacoes/DeterminacaoLucroPresumido.htm; http://www.receita.fazenda.gov.br/Publico/estudotributarios/estatisticas/32PrestacaoServicosnoLucroPresumido.pdf; http://www.receita.fazenda.gov.br/pessoajuridica/dipj/2005/pergresp2005/pr617a633.htm	The source provided by the PP is an official source and was considered reliable.	OK

Cash flow - Investments	----------	Disbursement of CAPEX over the years 2010 (40%), 2011 (31%) and 2012 (29%)	This parameter is calculated from the CAPEX. The disbursement regime was defined by the PP.	The parameter CAPEX was validated above. The validation team considers that the disbursement regime assumed by the PP is reasonable.	OK
Cash flow - BNDES Amortizations	R$/Year	32.213.403 (before capacity increase) 35.479.646 (after capacity increase)	Payment of BNDES loan over 14 years. The total BNDES loan was assumed by the PP as 68.1 % of CAPEX	The validation team has validated the assumption of 68.1% leverage, which reasonably reflects the BNDES loan conditions.	OK
Cash flow - BNDES Interest Payment	----------	Variable	The PP has considered in the calculation a BNDES loan interest of 8.4% (6% of long term interest rate and a spread of 2.4%).	The validation team agrees that these values reasonably reflect the BNDES´ practices.	

	Validated situation	Conclusion
4. Confirm the suitability of any benchmark applied in the investment analysis: a. Determine whether the type of benchmark applied is suitable for the type of financial indicator presented; b. Ensure that any risk premiums applied in determining the benchmark reflect the risks associated with the project type or activity; 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.	The suitability of the benchmark applied in the investment analysis was assessed: - The model applied for capital asset pricing (CAPM) is common practice in the market (sources ISAE/FGV, Brazil: http://www.carbonnews.com.br/downloads/wacc.pdf., accessed 27th April 2011and the paper "Revisiting The Capital Asset Pricing Model", http://www.stanford.edu/~wfsharpe/art/djam/djam.htm . Accessed on 27th April 2011.) - The risk premium applied in the calculation of benchmark was deemed adequate, as it considers the expected return on a risky asset in accordance with the aforementioned model (in this case the Bovespa Index). The leveraged beta was considered for electricity utilities, applied to companies under the presumed profit regime. - Although the new Guidelines on the Assessment of Investment Analysis version 4, EB61 annex 13 was published after the project starting date, the default value presented in it as an approximate expected return on equity was considered as a basis for comparison with the project´s benchmark value. The project fits in group 1 (energy industries). The expected return on equity according to the guideline is of 11.75% (in real terms), which is higher than the equity IRR of 7.59% calculated on the decision-making date.	OK

	Validated situation	Conclusion
5. In case the project participants rely on values from a Feasibility Study Report (FSR) approved by any national authority, the team is required to ensure that: (a) The FSR has been the basis of the decision to proceed with the investment in the project, i.e. 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; (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; (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. Use the table below to cross-check input values and describe here the results of the comparison.	N.A.	NA

Comparison to similar registered project in the region:

CDM Ref	Investment cost	Tariff	O&M cost	Capacity	Output	Investment cost per output	Load factor	O&M relative to investment	O&M per output
Osório Wind Power Plant Project , ref 0603[2]	645,533.000.00	Not available	Not available	150 MW	425GWh/year	4,303,553.00 R$/MW	Not available	Not available	Not available

[2] The Osório Wind Power Plant is the only similar registered project in the country, as can be seen on http://cdm.unfccc.int/Projects/projsearch.html

	Validated situation	Conclusion
SECTION 6d. 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.	The barrier analysis was not applied, once the investment sensitivity analysis concluded that the proposed CDM project activity is unlikely to be financially attractive	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	N.A.				
Risks related barriers					
Technological					
Due to prevailing practice					
Other					
First of its kind					

	Validated situation	Conclusion
SECTION 6e. Common practice analysis		
1. Describe how the geographical scope of the common practice analysis has been validated. Assess whether the geographical scope (e.g. 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.	The common practice analysis followed the latest version of the Guidelines on Common Practice. All the projects currently operating in Brazil were considered in the analysis. The arguments presented to show that the project activity is not common practice were deemed credible. The host country (Brazil) was considered as the geographical scope for the analysis. This scope was validated, once all projects in the country have similar access to financing and technology and are all subject to the same regulatory environment .The operational requirements are defined and controlled by ANEEL. There are no significant differences within the country regarding the environmental control exerted by the government. All projects in the country deliver the energy to the same integrated transmission system (SIN).	OK

	Validated situation	Conclusion
2. Determine to what extent similar and operational projects (e.g. using similar technology or practice), other than CDM project activities, have been undertaken in the defined region	The reasoning followed in the PDD Version 3 and the sources consulted for their validation are presented below: - sub-step 4a: Analyze other activities similar to the proposed project activity: the information regarding all the similar projects in operation in Brazil was obtained from the official source ANEEL from the site http://www.aneel.gov.br/aplicacoes/capacidadebrasil/GeracaoTipoFase.asp?tipo=7&fase=3 - Sub-step 4b: Discuss any similar Options that are occurring: The options presented in the PDD which satisfy the criterion of +/- 50% (from 82.2 to 246.6 MW) of the project activity´s design output (164.4 MW) were validated from the same source as above (ANEEL´s Energy Generation Data Bank, http://www.aneel.gov.br/aplicacoes/capacidadebrasil/GeracaoTipoFase.asp?tipo=7&fase=3). It was confirmed that only Praia Formosa wind power plant project satisfies the criterion, with 104.4 MW installed. This remains true even if all the projects put into operation to date are included in the analysis.	OK
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	It was confirmed, from the official site of the Ministry of Mines and Energy, that the Praia Formosa project has benefited from PROINFA (http://www.mme.gov.br/programas/proinfa/galerias/arquivos/apresentacao/PROINFA-ANEXO1-InstitucionalMME.pdf, slide # 13), i.e. this project differs from the proposed project activity by the subsidies received from the government. For this project, F=0 and N_{all}-N_{dif}=0. Following the Guidelines on Common Practice, the project is not common practice if F<=0.2 or N_{all}-N_{dif} <=3.	OK

	Validated situation	Conclusion

SECTION 7. Monitoring plan				
1. *Compliance of the monitoring plan with the approved methodology*. Confirm that the MP contains all the necessary parameters and that they are monitored in accordance to the approve Methodology using the following table:				
Parameter	**Monitoring Meth description**	**PDD description**	**Validated situation**	**Conclusion**

Parameter	Monitoring Meth description	PDD description	Validated situation	Conclusion
$EG_{facility,y}$	**Data unit:** MWh/yr **Description:** Quantity of net electricity generation supplied by the project plant/unit to the grid in year *y* **Source of data:** Project activity site **Measurement procedures (if any):** Electricity meters **Monitoring frequency:** Continuous measurement and at least monthly recording **QA/QC procedures:** Cross check measurement results with records for sold electricity	**Data Unit:** MWh **Description:** Quantity of net electricity generation supplied by the project plant/unit to the grid in year y **Source of data to be used:** Measurements at project activity site. **Value of data:** 733,734 **Description of measurement methods and procedures to be applied:** This parameter will be continuously analyzed and monitored values will be averaged monthly and yearly. Corresponds to the sum of the electricity generation by the eight units of the project activity. **QA/QC procedures:** Measurement results will be cross-checked through data available at the CCEE databank.	Data unit and description are described correctly. The net electricity generation is calculated by the separate parameters to be directly measured, for export and import. Procedures applicable for the calculation are described for this parameter as appropriate. The ex-ante value is indicated based on the estimated generation by the third party during PLF study.	OK

$EF_{grid,CM,y}$	**Data unit**: tCO2/MWh **Description:** Combined margin CO_2 emission factor for grid connected power generation in year y calculated using the latest version of the Tool to calculate the emission factor for an electricity system. **Source of data:** As per "Tool to calculate the emission factor for an electricity system". **Measurement procedures (if any):** As per "Tool to calculate the emission factor for an electricity system". **Monitoring frequency:** As per "Tool to calculate the emission factor for an electricity system". **QA/QC procedures:** As per "Tool to calculate the emission factor for an electricity system".	**Data Unit:** tCO_2/MWh **Description:** Combined margin CO_2 emission factor for grid connected power generation in year y **Source of data to be used:** Brazilian Interministerial Commission on Global Climate Change **Value of data:** 0.2055 **Description of measurement methods and procedures to be applied:** As per the most recent version "Tool to calculate the emission factor for an electricity system". This parameter will be calculated from the parameters $F_{grid,OM,y}$ and $EF_{grid,BM,y}$ **QA/QC procedures:** As per the most recent version of the "Tool to calculate the emission factor for an electricity system".	The $EF_{grid,CM,y}$ will be calculated according to the "Tool to calculate the emission factor for an electricity system": $EF_{grid,CM,y} = F_{grid,OM,y} \times w_{OM} + EF_{grid,BM,y} \times w_{BM}$ where, for wind and solar power generation project activities: $w_{OM} = 0.75$ and $w_{BM} = 0.25$ for the first and the subsequent crediting periods.	OK

$F_{grid,OM,y}$	**Data unit**: tCO_2/MWh **Description:** Operating margin CO_2 emission factor for the project electricity system in year y **Source of data:** As per "Tool to calculate the emission factor for an electricity system". **Measurement procedures (if any):** As per "Tool to calculate the emission factor for an electricity system". **Monitoring frequency:** As per "Tool to calculate the emission factor for an electricity system". **QA/QC procedures:** As per "Tool to calculate the emission factor for an electricity system".	**Data Unit:** tCO_2/MWh **Description:** Operating margin CO_2 emission factor in year y **Source of data to be used:** Brazilian Interministerial Commission on Global Climate Change **Value of data:** 0.2476 **Description of measurement methods and procedures to be applied:** As per the most recent version "Tool to calculate the emission factor for an electricity system". This parameter will be calculated from the parameters $F_{grid,OM,y}$ and $EF_{grid,BM,y}$ **QA/QC procedures:** As per the most recent version of the "Tool to calculate the emission factor for an electricity system".	The value of $F_{grid,OM,y}$ is supplied by the Brazilian Interministerial Commission on Global Climate Change on the site http://www.mct.gov.br/index.php/content/view/74689.html	OK

$EF_{grid,BM,y}$	**Data unit**: tCO_2/MWh **Description:** Build margin CO_2 emission factor for the project electricity system in year y **Source of data:** As per "Tool to calculate the emission factor for an electricity system". **Measurement procedures (if any):** As per "Tool to calculate the emission factor for an electricity system". **Monitoring frequency:** As per "Tool to calculate the emission factor for an electricity system". **QA/QC procedures:** As per "Tool to calculate the emission factor for an electricity system".	**Data Unit:** tCO_2/MWh **Description:** Build margin CO_2 emission factor in year y **Source of data to be used:** Brazilian Interministerial Commission on Global Climate Change **Value of data:** 0.0794 **Description of measurement methods and procedures to be applied:** As per the most recent version "Tool to calculate the emission factor for an electricity system". This parameter will be calculated from the parameters $F_{grid,OM,y}$ and $EF_{grid,BM,y}$ **QA/QC procedures:** As per the most recent version of the "Tool to calculate the emission factor for an electricity system".	The value of $EF_{grid,BM,y}$ is supplied by the Brazilian Interministerial Commission on Global Climate Change on the site http://www.mct.gov.br/index.php/content/view/74689.html	OK

2. *Implementation of the plan.* confirm that the monitoring arrangements described in the monitoring plan are feasible within the project design Describe the steps undertaken to assess this.	CAR 02: • Issue raised: The PDD does not mention the monitoring plan procedures and the emergency preparedness arrangements. • Assessment of response: The monitoring procedure and the emergency preparedness arrangements were provided and detailed in the PDD. CAR 02 was closed out. The feasibility of the monitoring plan was assessed through the cross-check with other similar registered projects (Osório Wind Power Plant Project, ref. 0603,and Água Doce Power Generation Project, ref. 0575). The arrangements proposed in the PDD are common practice and must follow, for all grid connected projects in the country, the procedures of Brazil´s electric energy national agency for the monitoring of $EG_{facility,y}$. The values of $F_{grid,OM,y}$ and $EF_{grid,BM,y}$ are obtained by all projects from the same source, the Brazilian Interministerial Commission on Global Climate Change. The validation team concluded that the arrangements proposed in the PDD are sound.	CAR 02, closed OK

3. *Implementation of the Plan:* 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	The validation team concluded that the arrangements proposed in the PDD are sound. A. $EG_{facility,y}$: the fact that the produced energy will be sold to the National Electric System Operator (ONS) binds the PPs to its official monitoring and measurement procedures (ref.: "Grid Procedures Module 12, Measurement for Invoicing"), which covers in detail, among others, the arrangements and procedures required for · Installation of measurement system for invoicing · Maintenance of measurement system · Measuring data collection · Certification of work measurement standards · Configuration of measurement system for invoicing Measurement: technical requirements according to the Brazilian Association of Technical Standards and the International Electrotechnical Commission – IEC. Accuracy of energy meters according to Metrological Technical Regulation (*Regulamento Técnico Metrológico – RMT*) for Class 0.2 of energy meters (error in measurements of up to ± 0.2%). QA/QC: electricity measurements cross-checked against the records for sold electricity and/or with the data provided in the Electricity Commercialization Chamber (*Câmara de Comercialização de Energia Elétrica* – CCEE) database. Verified source of Grid Procedures Module 12: http://www.ons.org.br/procedimentos/modulo_12.aspx B. $EF_{grid,OM,y}$ and $EF_{grid,BM,y}$: The Brazilian DNA is responsible for calculating the OM and BM emission factor in Brazil. It applies the Tool to calculate the emission factor for an electricity system. http://www.mct.gov.br/index.php/content/view/74689.html	OK

	Validated situation	Conclusion
SECTION 8. 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	Copies of invitations for comments posted by the PP to the local stakeholders, as well as the corresponding acknowledgments of receipt (post receipt), were assessed and found in accordance with DNA´s Resolution No. 7 of 5th March 2008. Available were evidence of acknowledgments of receipt of invitations made to: - NGOs ("Fórum Brasileiro de ONGs e Movimentos Sociais para o Meio Ambiente e Desenvolvimento"). - ABEAMA (Associação Brasileira de Energias Renováveis e Meio Ambiente) - WWF do Brasil - Greenpeace no Brasil - ABES (Associação Brasileira de Engenharia Ambiental) - Subprocuradora-geral da República - Prefeito do Município de Caetité - Presidente da Câmara de Vereadores de Caetité - Coordenador da Comissão Pastoral de Meio Ambiente de Caetité - Associação do Movimento Ambientalista Terra (AMATER) - Secretário Municipal de Meio Ambiente de Caetité - Secretário Estadual de Meio Ambiente do Estado da Bahia - Promotor de Justiça de Meio Ambiente de Caetité - Prefeito do Município de Guanambi - Presidente da Câmara de Vereadores de Guanambi - ONG PRISMA (Proteção e Revitalização Integrada e Sustentável da Serra de Monte Alto) - Secretário Municipal de Agricultura e Meio Ambiente de Guanambi The consultation of stakeholders conforms to the Procedures for processing and reporting on validation CDM project activities. CL02 was raised during the validation and was closed based on review of submitted information.	CL 02, closed OK

	Validated situation	Conclusion
2. Confirm that the summary of the comments received as provided in the PDD is complete	The summary of the comments received from local and global stakeholder consultation is complete in the PDD.	OK
3. Confirm that the project participants have taken due account of any comments received and have described this process in the PDD	Yes, the assessment team confirms that letters inviting stakeholder comments with the correct content have been sent on 28th July 2010 to all relevant stakeholders as per resolution no 7 of the Brazilian DNA. Evidence of due account of comments received from local and global stakeholder consultation were assessed. One return was received from local stakeholders (Federal Prosecutor), declaring himself to be impeded, due to his function, to comment about the project. No action had to be taken due to the comment received. No change in the PDD was needed.	OK

	Validated situation	Conclusion
SECTION 9. Environmental Impacts		
1. Is an EIA required by the environmental legislation of the host country? Describe the legislation applicable.	CAR 01: • Issue raised: The PP must provide installation permits for review. References to the environmental permits are not made in the PDD. • Assessment of response: The environmental permits were provided to the validation team. References to the environmental permits were included in the PDD version 2. CAR 01 was closed. CL 03 • Issue raised: The significant environmental impacts and the corresponding mitigation measures are not mentioned in the PDD. • Assessment of response: The environmental significant impacts and mitigation measures were included in the PDD version 2. CL 03 was closed out. The environmental installation permits for the eight wind farms, valid until the 1st February 2016, were assessed. FAR 01 was opened, due to the need for follow up on the accomplishment by the PP of all requirements made by the Environmental State Board, state of Bahia (CEPRAM) when granting the preliminary environmental permits. The validity of the environmental operation permits depend on the implementation of environmental education, socio-economic monitoring and bird monitoring programs, among other requirements. No other legislation specific to wind farms was identified.	CAR 01, closed CL 03, closed FAR 01,kept open 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	An analysis of environmental impact was undertaken according to the Federal Resolution CONAMA 001/86 , as verified by the validation team (Environmental Impact Assessment_Renova1.pdf).	OK

	Validated situation	Conclusion
3. Confirm that environmental impacts considered significant by the PPs or the Host country are described in the PDD, including mitigation measures.	The environmental impacts considered significant by the PPs or the Host country are described, including mitigation measures, in the PDD section D. The proposed mitigation measures were considered acceptable.	OK

Findings[3]

1. Grade / Ref:	CAR 01	2. Date:	01/06/2011	3. Status:	Closed
4. Requirement:		VVM 1.02 paragraph 131 Federal resolution CONAMA 237/97			
5. Nature of the Issue Raised:					
Evidence to support the availability of environmental installation permits is not presented for review.					
6. Nature of responses provided by the project participants:					
References to the installation permits were included in PDD, section D.1. Copies of the environmental permits were provided to the DOE.					
7. Assessment of such responses:					
All the environmental installation permits for the plants Alvorada, Candiba, Guanambi, Guirapá, Licínio de Almeida, Pindaí, Rio Verde and Serra do Salto were provided by the PP and those are mentioned in the PDD. The permits were reviewed and confirmed as meeting the host country regulations.					
8. References to resulting changes in the PDD or supporting annexes:					
D.1.					

1. Grade / Ref:	CAR 02	2. Date:	01/06/2011	3. Status:	Closed
4. Requirement:		VVM 1.02 paragraph 123b			
5. Nature of the Issue Raised:					
The PDD does not mention the monitoring procedures and the emergency preparedness arrangements.					
6. Nature of responses provided by the project participants:					

[3] 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 (VVM, 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

The monitoring plan procedure and emergencies preparedness, based essentially in the ONS Grid Procedures described in the PDD, have been supplemented through an internal monitoring procedure. This more complete description is now included in the PDD, section B.7.2.
7. Assessment of such responses:
The monitoring procedure and the emergency preparedness arrangements were provided and detailed in the PDD. The monitoring procedures and emergency preparedness arrangements, regulated by ANEEL, seem feasible and robust. CAR02 was closed out.
8. References to resulting changes in the PDD or supporting annexes:
B.7.2.

1. Grade / Ref:	CL 01	**2. Date:**	01/06/2011	**3. Status:**	Closed
4. Requirement:		VVM 1.02 paragraph 123b			
5. Nature of the Issue Raised:					
The role of the "National Electric System Operator (Operador Nacional do Sistema Elétrico - ONS) - 12th module" is not clearly described in the PDD.					
6. Nature of responses provided by the project participants:					
The role of the 12th module of ONS Grid Procedures (measurements of electricity production for invoicing) is described in the PDD, section B.7.2. There was included a footnote in this section, referencing the resolution role #109/04 of ANEEL (National Agency of Electric Energy), which defines, in its 1st article, that the Grid Procedures are "*documents designed by ONS with participation of the agents and approved by ANEEL, that establish the procedures and technical requirements necessary to planning, implantation, use and operation of SIN; and the responsibilities of ONS and of the agents*". The same article defines all agents, including generation agents as "*holder of concession, permission or authorization for electric energy generation*", which clearly shows that the project participant shall follow the ONS Grid Procedures.					
7. Assessment of such responses:					
The roles of the National Electric System Operator and 12th module were adequately explained in the PDD. CL01 was closed out.					
8. References to resulting changes in the PDD or supporting annexes:					
B.7.2.					

1. Grade / Ref:	CL 02	2. Date:	01/06/2011	3. Status:	Closed
4. Requirement:		PDD section E VVM 1.02 paragraph 128			

5. Nature of the Issue Raised:

An inconsistency was found between the PP´s names in the PDD and the name of the company on whose behalf the invitation letters were sent. Letters for stakeholders were sent by “Munduscarbo”, which is not identified in the PDD as a project participant.

6. Nature of responses provided by the project participants:

“MundusCarbo” is a company owned by the same economic group of PP “Key Consultoria e Treinamento Ltda.” A merge between the carbon business unit of this PP and “MundusCarbo” began on June 2010, and was fully realized on December 2010. The merge aims to transfer all carbon business of “Key Consultoria e Treinamento Ltda” to “MundusCarbo”. When the Local Stakeholder consultation was carried out, the operations of both companies were already integrated and both companies worked as a single entity. As a result, stakeholders consultation letters made reference to “MundusCarbo” instead of “Key Consultoria e Treinamento Ltda”.

The modification of “MundusCarbo” LLC agreement as a result of the merge is dated of 21st December 2010, while “Key Consultoria e Treinamento Ltda” one is dated of February 9th 2011. As a result of the merge, “MundusCarbo” became a shareholder of “Key Consultoria e Treinamento Ltda”.

7. Assessment of such responses:

The relation of “MundusCarbo” with the PP “Key Consultoria e Treinamento Ltda” was clarified and supported by documentation, which legitimates the participation of Munduscarbo in the consultation process. CL 02 was closed out.

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

No changes were made to the PDD.

1. Grade / Ref:	CL 03	2. Date:	01/06/11	3. Status:	Closed
4. Requirement:		PDD section D VVM 1.02 paragraph 131			
5. Nature of the Issue Raised:					
The significant environmental impacts and the corresponding mitigation measures are not mentioned in the PDD.					
6. Nature of responses provided by the project participants:					
The description of the main environmental impacts and the corresponding mitigation measures was included in the PDD section D.					
7. Assessment of such responses:					
The environmental significant impacts and mitigation measures were included in the PDD. The environmental impact mitigation programs, as required by the Environmental State Board (CEPRAM) as proposed by the PP are sound. CL 03 was closed out.					
8. References to resulting changes in the PDD or supporting annexes:					
PDD section D.					

1. Grade / Ref:	FAR 01	2. Date:	22/11/2011	3. Status:	Open
4. Requirement:		Environmental Permits for the plants Alvorada, Candiba, Guanambi, Guirapá, Licínio de Almeida, Pindaí, Rio Verde and Serra do Salto.			
5. Nature of the Issue Raised:					
The environmental permit issued by Environmental State Board of Bahia State (CEPRAM) includes conditions for the implementation of socio-economic monitoring, environmental education and bird monitoring programs. The implementation of which to be verified during the operation of the project activity to ensure that the project activity remains in compliance with the host country regulations.					
6. Nature of responses provided by the project participants:					
7. Assessment of such responses:					
8. References to resulting changes in the PDD or supporting annexes:					