VALIDATION REPORT

EÓLICA PEDRA DO REINO S. A.

CO2 GLOBAL SOLUTIONS INTERNATIONAL S. A.

PEDRA DO REINO WIND FARM

Report No: 7414 - 10/285

Date: 2011-09-20

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Validation Report:	***Report No.***	***Rev. No.***	***Date of 1st issue:***	***Date of this rev.***
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Project:	***Title:***		***Initial PDD Version:***	***Final PDD Version***
	Pedra do Reino Wind Farm		v.1 – 2010-06-24	v. 9 – 2011-09-14
Client:	Eólica Pedra do Reino S. A. CO2 Global Solutions International S. A.		***Client ref:***	Mr. Alfonso Lanseros Valdés
Project Participant(s):	***Host Party:***		***Other involved parties:***	
	Brazil		Spain and United Kingdom	
Applied methodology/ies:	***Title:***		***No.:***	***Scope / TA:***
	Consolidated baseline methodology for grid-connected electricity generation from renewable sources		ACM0002 – v. 12.1.0	1 / 1.2
Validation team / Technical Review and Final Approval	***Validation Team:***		***Technical review:***	***Final approval:***
	Dr. Jochen Schubert (TL/TE) Ricardo Lopes (TM) Sergio Cruz (TM)		Emilio Martin	Martin Saalmann
Expected Emission reductions: [t CO_2e]	***Expected emission reductions over the first crediting period:***		***Expected project starting date:***	
	264,320 t CO_2e		2010-03-26	
Confidential content:	☐ Yes		☒ No	
Summary of Validation Opinion:	☒ Positive validation opinion		☐ Negative validation opinion	

Eólica Pedra do Reino S. A. has commissioned the TÜV NORD JI/CDM Certification Program (CP) to validate the project: " Pedra do Reino Wind Farm" with regard to the relevant requirements of the UNFCCC for CDM project activities, as well as criteria for consistent project operations, monitoring and reporting. UNFCCC criteria include article 12 of the Kyoto Protocol, the modalities and procedures for CDM (Marrakech Accords) and the relevant decisions by COP/MOP and CDM Executive Board
In the course of the pre-validation 02 Corrective Action Requests (CARs) and 15 Clarification Requests (CLs) were raised and successfully closed. In addition, 01 Forward Action Request (FAR) was raised and shall be checked during the first verification.

The review of the project design documentation and additional documents related to baseline and monitoring methodology; the subsequent background investigation, follow-up interviews and review of comments by parties, stakeholders and NGOs have provided TÜV NORD JI/CDM CP with sufficient evidence to validate the fulfillment of the stated criteria.

In detail the conclusions can be summarized as follows:

- The project is in line with all relevant host country criteria (Brazil) and all relevant UNFCCC requirements for CDM. At the time of the completion of the validation the LoA is pending. For the Brazilian DNA a positive validation opinion is a prerequisite for the host government approval and thus the LoA could not be considered at the present validation stage.
- The project additionality is sufficiently justified in the PDD.
- The monitoring plan is transparent and adequate.
- The calculation of the project emission reductions is carried out in a transparent and conservative manner, so that the calculated emission reductions of 264,320 tCO_2e are most likely to be achieved within the 7 years renewable crediting period.

The conclusions of this report show, that the project, as it was described in the project documentation, is in line with all criteria applicable for the validation. The request for registration will only be issued after the LoAs from host country DNA and other parties are obtained.

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Abbreviations

ANEEL	National Electric Energy Agency
BAU	Business as usual
BM	Build Margin
BNDES	National Bank for Social Economic Development
CA	Corrective Action / Clarification Action
CAR	Corrective Action Request
CCEE	Chamber of Commerce of Electric Energy
CDM	Clean Development Mechanism
CEPRAM	Environmental Council of the State of Bahia
CER	Certified Emission Reduction
CL	Clarification Request
CM	Combined Margin
CO_2	Carbon dioxide
CO_2e	Carbon dioxide equivalent
COELBA	Company of Electricity of the State of Bahia
CONAMA	National Environmental Council
CP	Certification Program
DNA	Designated National Authority
EB	CDM Executive Board
EIA	Environmental Impact Assessment
ELETROBRÁS	National Electric Utility Company (State Owned)
FAR	Forward Action Request
GHG	Greenhouse gas(es)
GT	Glossary of Terms
IMA	Environmental Institute of the State of Bahia
IPCC	Intergovernmental Panel on Climate Change
OM	Operating Margin
OSV	On-site visit
PDD	Project Design Document
QA/QC	Quality assurance/Quality control
RAS	Simplified Environmental Report
SEMA	Secretary of Environment of the State of Bahia
SIN	National Interconnected System
UNFCCC	United Nations Framework Convention on Climate Change
VVM	Validation and Verification Manual

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1 OBJECTIVE / SCOPE

The purpose of a validation is to have an independent third party assess the project design. In particular the project's baseline, the monitoring plan (MP), and the project's compliance with

- the requirements of Article 12 of the Kyoto Protocol;
- the CDM modalities and procedures as agreed in the Marrakech Accords under decision 3/CMP.1
- the annex to the decision;
- subsequent decisions made by COP/MOP & CDM Executive Board and
- other relevant rules, including the host country legislation and sustainability criteria

are validated in order to confirm that the project design as documented is sound and reasonable and meets the stated requirements and identified criteria. Validation is seen as necessary to provide assurance to stakeholders on the quality of the project and its intended generation of certified emission reductions (CERs).

The validation scope is given as a thorough independent and objective assessment of the project design including especially: the correct application of the methodology, the project's baseline study, additionality justification, local stakeholder commenting process, environmental impacts and monitoring plan, which are included in the PDD and other relevant supporting documents, to ensure that the proposed CDM project activity meets all relevant and applicable CDM criteria.

The information included in the PDD and the supporting documents were reviewed against the requirements as set out by the UNFCCC. The validation team has, based on the requirements in the Validation and Verification Manual[/VVM/], carried out a full assessment of all evidences to assess the compliance of the project with the key areas as outlined in section V.E. and V.F. of the VVM (version 1.2, Annex 1, EB 55).

The validation is based on the information made available to TÜV NORD JI/CDM CP and on the contract conditions. TÜV NORD JI/CDM CP cannot be held liable by any entity for making its validation opinion based on any false or misleading information supplied to it during the course of validation.

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

2 GHG PROJECT DESCRIPTION

2.1 Project Characteristics

Essential data of the project is presented in the following Table 2-1.

Table 2-1: Project Characteristics

Item	Data		
Project title	Pedra do Reino Wind Farm		
Project size	☒ Large Scale ☐ Small Scale		
Project Scope *(according to UNFCCC sectoral scope numbers for CDM)*	☒	1	Energy Industries (renewable- /non-renewable sources)
	☐	2	Energy distribution
	☐	3	Energy demand
	☐	4	Manufacturing industries
	☐	5	Chemical industry
	☐	6	Construction
	☐	7	Transport
	☐	8	Mining/Mineral production
	☐	9	Metal production
	☐	10	Fugitive emissions from fuels (solid, oil and gas)
	☐	11	Fugitive emissions from production and consumption of halocarbons and hexafluoride
	☐	12	Solvents use
	☐	13	Waste handling and disposal
	☐	14	Afforestation and Reforestation
	☐	15	Agriculture
Applied Methodology	*ACM0002 – Consolidated baseline methodology for grid-connected electricity generation from renewable sources – v. 12.1.0*		
Technical Area(s)	1.2: Renewables - Wind		
Crediting period	☒ Renewable Crediting Period (7 y) ☐ Fixed Crediting Period (10 y)		
Start of crediting period	2012/01/01		

2.2 Involved Parties and Project Participants

The following parties to the Kyoto Protocol and project participants are involved in this project activity (Table 2-2).

Table 2-2: Project Parties and project participants

Characteristic	Party	Project Participant
Host party	Brazil	Eólica Pedra do Reino S.A. Eólica Energia Ltda.
Other involved parties	Spain	Gestamp Eólica S.L.
	United Kingdom	CO_2 Global Solutions International S.A.

2.3 Project Location

The details of the project location are given in table 2-3:

Table 2-3: Project Location

No.	Project Location
Host Country	Brazil
Region:	State of Bahia
Project location address:	Town of Sobradinho
Latitude:	9°31'1.4"S – Wind Farm 9°31'46.12"S 9°31'14.98"S 9°30'12.38"S 9°30'27.91"S Vertices, where the turbines will be installed
Longitude:	40°53'10.3"W – Wind Farm 40°53'48.75"W 40°54'05.57"W 40°53'08.65"W 40°52'39.11"W Vertices, where the turbines will be installed

2.4 Technical Project Description

The technical key data are provided in table 2-4 below

Table 2-4: Technical data of the project activity

Parameter	Unit	Value
Number of Turbines	-	10
Wind turbine		Vestas V90-3.0 MW class I-A
Rated Power of Turbines	MW	3.0
Cut in – cut out wind	m/s	3.5 – 25
Rated output voltage	V	1000
Equivalent Hours	h/y	3,321
Plant Load Factor	%	37.91
Output transformer	kV	34.5 - 69
Swept area	m^2	6,362
Diameter of Blades	m	90
Hub height	m	80

3 METHODOLOGY AND VALIDATION SEQUENCE

3.1 Validation Steps

The validation of the project consisted of the following steps:

- Contract review
- Appointment of team members and technical reviewers
- Publication of the project design document (PDD)
- A desk review of the PDD/PDD/ submitted by the client and additional supporting documents with the use of customized validation protocol/CPM/ according to the Validation and Verification Manual/VVM/
- Validation planning
- On-Site assessment
- Background investigation and follow-up interviews with personnel of the project developer and its contractors
- Draft validation reporting
- Resolution of corrective actions (if any)
- Final validation reporting
- Technical review
- Final approval of the validation

The sequence of the validation is given in the table 3.1 below:

Table 3.1: Validation sequence

Topic	Time
Assignment of validation	2010-07-08
Submission of PDD for global stakeholder commenting process	2010-07-14
On-site visit	2010-09-14 to 2010-09-17
Draft reporting finalized	2010-09-24
Final reporting finalized	2011-09-20
Technical review on final reporting finalized	2011-09-20

3.2 Contract review

To assure that

- the project falls within the scopes for which accreditation is held,
- the necessary competences to carry out the verification can be provided,
- Impartiality issues are clear and in line with the CDM accreditation requirements

a contract review was carried out before the contract was signed.

3.3 Appointment of team members and technical reviewers

On the basis of a competence analysis and individual availabilities a verification team, consistent of one team leader and 2 additional team members, were appointed. Furthermore also the personnel for observation, the technical review and the final approval were determined.

The list of involved personnel, the tasks assigned and the qualification status are summarized in the table 3-2 below.

Table 3-2: Involved Personnel

	Name	Company	Function [1)]	Qualification Status [2)]	Scheme competence [3)]	Technical competence [4, 5)]	Host country Competence	Team Leading competence
☒ Mr. ☐ Ms.	Dr. Jochen Schubert	TÜV NORD CERT, Germany	TL	LA	☒	1.2 (T)	☐	☒
☒ Mr. ☐ Ms.	Ricardo Lopes	BRTÜV (TUV NORD Brazil)	TM[A)]	LA	☒	-	☒	☒
☒ Mr. ☐ Ms.	Sergio Cruz	BRTÜV (TUV NORD Brazil)	TM[A)]	A	☒	-	☒	☐
☒ Mr. ☐ Ms.	Emilio Martin	TÜV NORD CERT, Germany	TR[B)]	LA	☒	1.2	☐	☒
☐ Mr. ☒ Ms.	Büsran Grünenwald	TÜV NORD CERT, Germany	OR[B)]	-	☐	-	☐	☐

	Name	Company	Function [1]	Qualification Status [2]	Scheme competence [3]	Technical competence [4, 5]	Host country Competence	Team Leading competence
☒ Mr. ☐ Ms.	Martin Saalmann	TÜV NORD CERT, Germany	FA[B]	SA	☒	-	☐	☒

1) TL: Team Leader; TM: Team Member, TR: Technical review; OT: Observer-Team, OR: Observer-TR; FA: Final approval

2) GHG Auditor Status: A: Assessor; LA: Lead Assessor; SA: Senior Assessor; T: Trainee; TE: Technical Expert

3) GHG auditor status (at least Assessor)

4) As per S01-MU03 or S01-VA070-A2 (such as T 1.1, T 1.2, …) according to Accreditation Standard (Version 01.1)

5) As per S01-MU03 or S01-VA070-A2 (such as A, B, C…) according to Accreditation Standard (Version 2)

A) Team Member: GHG auditor (at least Assessor status), Technical Expert (incl. Host Country Expert or Verification Expert), not ETE

B) No team member

All team members contributed to the review of documents, the assessment of the project activity and to the preparation of this report under the leadership of the team leader.

Certificates of appointment for the above mentioned team members are enclosed in annex 6 of this report.

3.4 Consideration of Public Stakeholder Comments

Acc. to the modalities and procedures the draft PDD, as received from the project participants, has been made publicly available on the dedicated UNFCCC CDM website prior to the validation activity commenced. Stakeholders have been invited to comment on the PDD within the 30 days public commenting period.

In case comments were received, they are taken into account during the validation process. The comments and the discussion of the same are documented in annex 5 of this report.

3.5 Validation Protocol

In order to ensure consideration of all relevant assessment criteria, a validation protocol is used. The protocol shows, in a transparent manner, criteria and requirements, means of validation and the results from pre-validating the identified criteria. The validation protocol reflects the generic CDM requirements each CDM project has to meet as well as project specific issues as applicable. The validation protocol serves the following purposes:

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

The validation protocol as described in Figure 1.

Validation Protocol Table A-1: Requirement checklist				
Checklist Item	***Validation Team Comment***	***Reference***	***Draft Conclusion***	***Final Conclusion***
The checklist items in Table A-1 are linked to the various requirements the project should meet. The checklist is organized in various sections. Each section is then further sub-divided as per the requirements of the topic and the individual project activity.	*The section is used to elaborate and discuss the checklist item in detail. It includes the assessment of the validation team and how the assessment was carried out. The reporting requirements of the VVM shall be covered in this section.*	*Gives reference to the information source on which the assessment is based on*	*Assessment based on evidence provided if the criterion is fulfilled (OK), or a CAR, CL or FAR (see below) is raised. The assessment refers to the draft validation stage.*	*In case a corrective action or a clarification the final assessment at the final validation stage is given.*

Figure 1: Validation protocol tables

The completed validation protocol is enclosed in Annex 1 to this report.

3.6 Review of Documents

The published PDD (version 1) and supporting background documents related to the project design and baseline were reviewed.

Furthermore, the validation team used additional documentation by third parties like host party legislation, technical reports referring to the project design or to the basic conditions and technical data.

3.7 Follow-up Interviews

The validation team has carried out interviews in order to assess the information included in the project documentation and to gain additional information regarding the compliance of the project with the relevant criteria applicable for CDM.

During validation the validation team has performed interviews to confirm selected information and to resolve issues identified in the document review. The main topics of the interviews are summarized in table 3-3.

Table 3-3: Interviewed persons and interview topics

Interviewed Persons / Entities	Interview topics
Project proponent representatives Project consultant	- Chronological description of the project activity with documents of key steps of the implementation. - Current status of plant design - Technical details of the project realization, project feasibility, designing, operational life time, monitoring of the project - Host Government Approval - Approval procedures and status - Monitoring and measurement equipment and system. - Financial aspects - Crediting period - Project activity starting date - CER allocation / ownership - Baseline study assumptions - Additionality - Sustainable development issues - Monitoring - Analysis of local stakeholder consultation - Roles & responsibilities of the project participants w.r.t. project management, monitoring and reporting - National Legislation - Editorial issues of the PDD

A comprehensive list of all interviewed persons is part of section 7 ‘References’.

3.8 Project comparison

The validation team has compared the proposed CDM project activity with similar projects or technology that have similar or comparable characteristics and with similar projects in the host country in order to achieve additional information esp. regarding:

- Project technology

- Additionality issues
- Reasons for reviews, requests for reviews and rejections within the CDM registration process.

3.9 Resolution of Clarification and Corrective Action Requests

3.9.1 Definition

A **Corrective Action Request (CAR)** will be established where:

- mistakes have been made in assumptions, application of the methodology or the project documentation which will have a direct influence the project results,
- the requirements deemed relevant for validation of the project with certain characteristics have not been met or
- there is a risk that the project would not be registered by the UNFCCC or that emission reductions would not be able to be verified and certified.

A **Clarification Request (CL)** will be issued where information is insufficient, unclear or not transparent enough to establish whether a requirement is met.

A **Forward Action Request (FAR)** will be issued when certain issues related to project implementation should be reviewed during the first verification.

3.9.2 Draft Validation

After reviewing all relevant documents and taken all other relevant information into account, the validation team issues all findings in the course of a draft validation report and hands this report over to the project proponent in order to respond on the issues raised and to revise the project documentation accordingly.

3.9.3 Final Validation

The final validation starts after issuance of the proposed corrective action (CA) of the CARs CLs and FARs by the project proponent. The project proponent has to reply on those and the requests are “closed out” by the validation team in case the response is assessed as sufficient. In case of raised FARs the project proponent has to respond on this, identifying the necessary actions to ensure that the topics raised in this finding are likely to be resolved at the latest during the first verification. The validation team has to assess whether the proposed action is adequate or not.

In case the findings from CARs and CLs cannot be resolved by the project proponent or the proposed action related to the FARs raised cannot be assessed as adequate, no positive validation opinion can be issued by the validation team.

The CAR(s) / CL(s) / FAR(s) are documented in chapter 4.

3.10 Technical review

Before submission of the final validation report a technical review of the whole validation procedure is carried out. The technical reviewer is a competent GHG auditor being appointed for the scope this project falls under. The technical reviewer is not considered to be part of the verification team and thus not involved in the decision making process up to the technical review.

As a result of the technical review process the validation opinion and the topic specific assessments as prepared by the validation team leader may be confirmed or revised. Furthermore reporting improvements might be achieved.

3.11 Final approval

After successful technical review of the final report an overall (esp. procedural) assessment of the complete validation will be carried out by a senior assessor located in the accredited premises of TÜV NORD.

Only after this step the request for registration can be started (in case of a positive validation opinion).

4 VALIDATION FINDINGS

In the following table the findings from the desk review of the published PDD, visits, interviews and supporting documents are summarized**:**

Table 4-1: Summary of CARs, CLs and FARs issued

Validation topic [1)]	No. of CAR	No. of CL	No. of FAR
General description of project activity (A) - Project specification - Technical project description - Participation - Contribution to sustainable development - PDD editorial aspects - Technology to be employed	-	2	-
Project Baseline, Additionality and Monitoring Plan (B) - Application of the Methodology - Project Boundary - Baseline identification - Calculation of GHG emission reductions Project emissions Baseline emissions Leakage - Additionality determination - Monitoring Methodology - Monitoring Plan - Project management planning	1	13	-
Duration of the Project / Crediting Period (C)	1	-	-
Environmental impacts (D)	-	-	1
Stakeholder Comments (E)	-	-	-
SUM	**2**	**15**	**1**

[1)] The letters in brackets refer to the validation protocol

Table 4-1.2: PDD version available at each assessment round

Version No.	Assessment Round
PDD version 1.0 (published)	Findings raised

Version No.	Assessment Round
PDD version 2.0	DOE Assessment #1
PDD version 3.0	DOE Assessment #2
PDD version 4.0	DOE Assessment #3
PDD version 5.0	DOE Assessment #4
PDD version 7.0	DOE Assessment #5
PDD version 8.0	DOE Assessment #6
PDD version 9.0 (final)	DOE Assessment #7

The following tables include all raised CARs, CLs and FARs. For an in depth evaluation of all validation items it should be referred to the validation protocols (see Annex 1).

The findings of validation process are summarized in the tables below.

Finding	CAR B1		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	As the emission factor published for the DNA of Brazil is calculated based on Dispatch Data, the ex-ante option is not possible, therefore, please remove parameter EF from section B.6.2 and include $EF_{OM,y}$, $EF_{BM,y}$ and $EF_{grid,BM,y}$ in section B.7.1. In addition, please revise the text about the ex-ante approach in section B.7.2.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	All request changes have been made.		
DOE Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.*	Parameter EF has been removed from section B.6.2 and parameters $EF_{OM,y}$, $EF_{BM,y}$ and $EF_{grid,CM,y}$ have been properly included in section B.7.1. The text in section B.7.2 has been properly revised. **CL is closed**		

Finding	CAR B1
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☒ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements

Finding	CAR C1		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	The starting date reported in section C.1.1 is 31/07/2010, which was the expected date of signature of the contract with the turbines supplier. However, it was detected by the validation team that the first major financial commitment of project owner was the deposit of the Bid Price Guarantee, corresponding to 5% of the total investment of the project, required by the government as pre-requisite for granting the official authorization for project implementation according to the rules set out in the energy Auction Edict, at which the project bid for energy price was a winner. Hence, please revise the starting date in section C.1.1 as it is not in line with the definition of the CDM Glossary of Terms[/GT/].		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	The starting date of the project has been changed to March 26, 2010, which is the date where Eólica Pedra do Reino S.A. made the payment of 5% of total investment (R $ 7,532,166), this payment was a pre-requisite for granting the official authorization for project implementation. TUV Nord already has the support of this payment.		
DOE Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.*	The starting date of the project activity was changed to March 26th, 2010 which is the day of the deposit of the Bid Price Guarantee and in line with the definition of the CDM Glossary of Terms. **CL is closed**		
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☒ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements		

Finding	CL A1		
Classification	☐ CAR	☒ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	In section A.2, no evidence was submitted regarding the stated education, technical, social and environmental programs that will be carried out at the wind farm and also regarding the improvement of local infrastructure. Please, provide evidence of such commitment or remove the statements from section A.2.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	The two sentences of the section A.2. have been removed, because there are not enough evidence to support these statements.		
DOE Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.*	The reference to education, technical, social and environmental programs has been removed from the section and the stated contributions of the project activity are consistent and reasonable. Nevertheless, in Section A.2, it was said that “An additional income to the landowners without sacrificing the cattle raising that is mainly the present ground use”. But, In Section A.4.3, it is mentioned that “These lands do not have any specific current use, so the project will not affect any human activities” and in Section D.1, there is a statement that “The area where the project is implemented is natural, and does not present any human activities”. Please, explain this inconsistency or revise the sections. **<u>CL remains open</u>**		
Corrective Action #2 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	The sentence of section A.2 was deleted in order to avoid the inconsistence. In the site visit was conducted last September 2010, the auditors reviewed the region where the project will be implemented and noted that the land does not present any human activity. Therefore, the sentence of Section 4.3 is correct and the sentence of Section A.2 is eliminated.		

Finding	CL A1
DOE Assessment #7 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.*	The paragraph about the cattle raising was deleted, as this corresponds to the reality that was viewed during the site visit, where no economic activity is developed by now. Actually it can be as the installation of the turbines allows other activities in the same area. **CL is closed**
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☒ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements

Finding	CL A2		
Classification	☐ CAR	☒ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	In section A.4.1.4, the coordinates given are those of the wind measurement tower. For further precision, please provide the GPS coordinates of each wind generator location. In addition, in section A.4.1.3, please indicate the access road and kilometer.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	The coordinates of the project were corrected to match up with the announcement from the Ministry of Mines and Energy (document already provided to DOE during the validation visit). Also, the points of the area where the wind turbines will be installed were included in section A.4.1.4.		
DOE Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.*	The coordinates of the project have been properly included and now are consistent with the Ministerial Directive issued by the Ministry of Mines and Energy/OL/. In addition, the coordinates of the location, where the wind turbines will be installed. **CL is closed**		
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☒ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements		

Finding	CL B1

Finding	CL B1		
Classification	☐ CAR	☒ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	In section B.3, according to ACM 0002, *the spatial extent of the project boundary includes the project power plant and all power plants connected physically to the electricity system that the CDM project activity is connected to*. Hence, please revise Figure 2 to include the national grid in the project boundary.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	A modification was made in Figure 2. Flow diagram of the project, modifying the project boundary to include the national grid.		
DOE Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.*	Figure 2 has been correctly revised and shows that the project boundary includes the power plant and all power plants connected physically to the electricity system that the project activity is connected to. **CL is closed**		
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☒ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements		

Finding	CL B2		
Classification	☐ CAR	☒ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	In section B.5, the starting date reported in the Draft PDD is not correct according to the Glossary of Terms/GT/(see CAR C1). In addition and with reference to the /GCP/, the timeline of events leading to the project implementation and CDM consideration clearly showing the dates of each event and the corresponding supporting evidence, preferably in table format, is missing. Please indicate the appropriate management decision, e.g. the Bid Price in the Energy Auction, and the investment decision, i.e. the deposit of the Bid Price Guarantee, i.e. 5% of total project investment according to Auction Edict.		

Finding	CL B2
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	In the section B.5 was added the Table 6 with the name Timeline of the project since management decision until investment decision. We already sent all the supports that are established in the table (ANEEL Result, emails communications and receipt of the payment).
DOE Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.*	A table with the timeline of relevant milestones (date of the Bid Price of Auction n° 03/2009 – Management Decision; date that CO2 Solutions sent the Prior Consideration of the CDM of the project activity to the UNFCCC and to the Brazilian DNA; date of confirmation of the reception of the Prior Consideration by Inter-Ministry Committee on Global Climate Change; date of confirmation of the reception of the Prior Consideration by the UNFCCC; date of the deposit of the Bid Price Guarantee – Financial Decision) was included in section B.5. **CL is closed**
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☒ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements

Finding	CL B3		
Classification	☐ CAR	☒ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	In section B.5, the text in the beginning of the section before the '**Analysis of additionality of the project'** is not related to demonstration of additionality, thus please move it to section B.4 or remove it altogether.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	It has made the change and the information was moved to section B.4		
DOE Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.*	The text and the respective table were removed from section B.5 and included in section B.4. **CL is closed**		

Finding	CL B3
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☒ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements

Finding	CL B4		
Classification	☐ CAR	☒ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	The financial parameters in the PDD do not match with those in the excel sheet provided to the validation team. In addition, the appropriateness of the SELIC rate as the chosen benchmark shall be revised.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	Changes were made in the financial section. It was changed the data relevant for the analysis such as: investment, exchange rate, operation and maintenance cost, transmission cost and land rent cost. It was changed the result of the economic model (Table 8): IRR with/without CER's Also it was changed the result of the sensitivity analysis (Table 9 and 10).		
DOE Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.*	Now the financial parameters included in the PDD match and are consistent with the ones provided at the Financial Analysis presented at the excel spreadsheet and tables and calculations have been properly revised and corrected. Nevertheless, although it can be considered as a conservative rate and it is the basis for all interest rates in Brazil, the SELIC is a short term rate and so deemed not fully adequate benchmark for a long term investment analysis. Please, choose another benchmark in line with EB51 Annex 58 and make all necessary adjustments at the investment analysis. **CL remains open**		
Corrective Action #2 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	The SELIC interest rate was discarded as a benchmark indicator; for that reason we estimate a new benchmark calculation.		

Finding	**CL B4**
	According to the "Tool for the demonstration and assessment of additionality" (Version 05.2) option a) was used to determine the discount rate and benchmark used for the benchmark analysis. *(a) Government bond rates, increased by a suitable risk premium to reflect private investment and/or the project type, as substantiated by an independent (financial) expert or documented by official publicly available financial data;* For that reason, the benchmark calculation consist in the following: • Government bond rates: In this case is used the Brazilian Governmental Bond -BRL-2028. This bond was emitted several times in different year: ○ February 2007: First emission of the BRL-2028 bond with a maturity of 21 years and a yield of 10.68% ○ June 2007: Fourth emission of the BRL-2028 bond, this bond is the last bond emitted before the management decision and it has a maturity of 21 years and a yield of 8.626%. ○ October 2010: Fifth emission of the BRL-2028 bond, this bond is the first bond emitted after the management decision with a maturity of 21 years and a yield of 8.85%. To be conservative the bond selected was the bond emitted in June 2007 (8.626%); additionally other registered projects already used this governmental bond as a benchmark. Please refer to document **P066_VAL_211** • Equity Risk Premium: Global Equity Risk Premium provided in the article "The worldwide equity premium: A smaller puzzle by Elroy Dimoson, Paul Marsh and Mike Stautun of London Business School. This value is supported by the "Draft tool to determine the weighted average cost of capital (WACC)". Although this tool is not approved at the time of preparing the PDD, it corresponds to a calculation accepted by financial models and as it is suggested by the UNFCCC in a draft methodological, for that reason the value of the Equity Risk Premium is 4.1%. • Please refer to the document **P066_VAL_194 page 18.** The final benchmark is 12.726 %.

Finding	CL B4
DOE Assessment #2 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.*	The PP has chosen the sum of a Brazilian government bond rate with 21 years maturity (yield of 8.626%) and a global equity risk premium (4.1%). The total benchmark value is 12.726%. The used yield for the bond rate was the most conservative one that was issued immediately before or after the management decision. Nevertheless, a Brazilian bond already has a risk premium included in its value. So, it is not conservative to accept that a global equity risk premium be added. Please, revise the applied benchmark. **CL remains open**
Corrective Action #3 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	The global equity risk premium was excluded. As an electricity project presents higher risks than a Governmental Bond, a risk premium was added in the bond yield. The BNDES (National Bank of Social and Economic Development) is the main and the cheapest source for Brazilian loans for infrastructure projects. Please refer to document **P067_VAL_207**. So, the chosen benchmark is the sum of the Brazilian Governmental Bond -BRL-2028 (with the most conservative yield – 8.626%) and a BNDES bond (direct spread required for investments related to renewable energy – 0.9% per year).
DOE Assessment #3 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.*	The PP has chosen the sum of a Brazilian government bond rate with 21 years maturity (yield of 8.626%) and a BNDES bond as a project risk premium (with the lowest basic spread required for investments related to renewable energy – 0.9% per year), which is deemed appropriate by the validation team for the type of project. The total benchmark value is 9.526%. The benchmark is in accordance with the requirements of the "Tool for the demonstration and assessment of additionality" - version 05.2 and it was deemed appropriate for the investment analysis performed for the project activity. In addition, the investment analysis was revised and the new benchmark was used for the comparison with the project IRR. **CL is closed**
Conclusion	☐ To be checked during the first periodic verification

Finding	CL B4
Tick the appropriate checkbox	☒ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements

Finding	CL B5		
Classification	☐ CAR	☒ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	In section B.5, Table 12 giving references and checking names and power of the wind farms does not match with the information presented at Table 11.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	Two tables were updated in order to have the same names of plants; however, there are still variations in power. This is because the PROINFA and ANEEL reported different values of power. Please see reference. Reference ANEEL http://www.aneel.gov.br/aplicacoes/capacidadebrasil/GeracaoTipoFase.asp?tipo=7&fase=3 Reference PROINFA http://www.eletrobras.gov.br/ELB/data/Pages/LUMISABB61D26PTBRIE.htm See the document **P066_VAL_095**		
DOE Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.*	Both tables have been revised. Nevertheless, the link for the PROINFA projects takes to the main page of ELETROBRÁS, and when following the links at this page, the table presented has some differences from the one used at the PDD (e.g. Palmares is 7.562MW and not 50.00 MW, Gargaú is 28.05 MW and not 20.05 MW). Please, be more specific about the link that takes directly to the PROINFA projects and revise the all wind farms and their power. **CL remains open**		

Finding	CL B5
Corrective Action #2 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	In the PROINFA's link, please refer to the following section: Resultados das Chamadas Públicas, Reclassificações e Chamadas para Contratação And the document has named "Primeira Chamada Pública - Empreendimentos Habilitados - EÓLICA - [PDF - 40 KB]" 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 You can download this document and is the same document that we already sent with the name P067_VAL_090. In addition, a detailed review of the project tables was realized, concluding the following: • The project UEE Millenium has a capacity of 10.2 MW and not 4.5 MW (Correction made). • The project UEE Gargaú has a capacity of 28.05 MW and not 20.5 MW (Correction made).The project UEE Palmares has a capacity of 50.0 MW, it is demonstrated in the PROINFA's document, 2th page. The auditor mention that the project has a capacity of 7.562 MW, however, after the detailed revision of the document we conclude that the project has 50.0 MW of capacity. • Additionally a few changes were done in other wind farms names, such as UEE Saco Dantas, UEE Pirauá, UEE RN 15- Rio do Fogo, UEE RN3- Gameleira, UEE Bom Jardim.
DOE Assessment #2 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.)*	The precise link was included and the required changes in names and/or power capacity were made. So, the table is properly revised.

Finding	CL B5
shall be added.	**CL is closed**
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☒ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements

Finding	CL B6		
Classification	☐ CAR	☒ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	In section B.5, please clearly document the outcome of each step. In addition, please the rephrase 2nd paragraph of page 20 as it is not precise.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	Concluding paragraphs were added to the steps in section B.5 and also restructured paragraph 2 on page 20, adding information PROINFA program incentives.		
DOE Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.*	It is not clearly documented the outcome of each step. Please, revise it. The paragraph has been revised at page 27 of the new version. **CL remains open**		
Corrective Action #2 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	The conclusion paragraphs of each step of the section B.5 were rewritten, in order to clarify that the project activity is in accordance with the requirement of the step and finally conclude that the project is additional. With the information added, it's demonstrated that the project is additional, even though it has been demonstrated already with the explanation of the step 2 where it's described that the project IRR without the CDM incentives is below the benchmark.		
DOE Assessment #2 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.*	The outcome of each step is now clearly stated at the last paragraph of its section. **CL is closed**		

Finding	CL B6
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☒ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements

Finding	CL B7		
Classification	☐ CAR	☒ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	In section B.6.1, please correct the equation and description of parameters of BE as the correct is EG_{PJ} and not (EG_y-$EG_{baseline}$). In addition, please revise Step 3 in page 23 as the DNA of Brazil uses Dispatch Data as method for determination of the Operating Margin.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	Corrected the formula and erased the term $EG_{Baseline}$. Also in the step 3, the phrase changed to mention that the operating margin is obtained of the DNA web page using the Dispatch Data Method.		
DOE Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.*	The correct equation ($BE_y = EG_{PJ,y} \cdot EF_{grid,CM,y}$) is now used and the consequent changes were done. At Step 3, the method for the determination of the Operating margin was changed to Dispatch Data. **CL is closed**		
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☒ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements		

Finding	CL B8		
Classification	☐ CAR	☒ CL	☐ FAR

Finding	**CL B8**
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	In section B.7.1, please: 1. include parameters $EF_{OM,y}$, $EF_{BM,y}$ and $EF_{grid,CM,y}$ (see CAR B1); 2. for parameter EGy, please indicate: a. How many meters; b. Function (main, back-up); c. Type (uni-bidirectional); d. Accuracy class or max error range of meters; e. Calibration frequency (at least every 2 years according to ONS regulations); f. Clarify/confirm that it will be possible to cross-check the net energy delivered to the grid with the electricity sales receipts, i.e. the receipts will state the net energy. Otherwise, revise the QA/QC procedures including robust cross-check with information from purchaser, i.e. CCEE information.
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	Added the tables for the parameters $EF_{OM,y}$, $EF_{BM,y}$ and $EF_{grid,CM,y}$ in section B.7.1 and also the extra information of the meters in the parameter EG_y To Item F, the correction was made that the CCEE information will not be directly compared with the energy generated in the meter. There is a regulation for ANEEL to get the amount of energy that will be compared with the meter (see document **P066_VAL_067**, clause 8).

Finding	CL B8
DOE Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.*	1. The parameters $EF_{OM,y}$, $EF_{BM,y}$ and $EF_{grid,CM,y}$ were included in the section to be monitored; 2. The information was provided: a. Two meters; b. Function: one main and one back up meter; c. Bidirectional meters; d. Max error range: 0.2KWh; e. Calibration frequency: every two years; f. Please, rephrase the cross check measurements, as they are not clear. In addition, please be more specific at the reference as clause 8 of Annex 8 of the Auction Edict is too long. (Editorial): Please remove the "Extra Information" from the "Any comment" section and replace it to the "Description of measurement methods and procedures to be applied" as the characteristics of the monitoring equipment are part of the measurement methods. **CL remains open**
Corrective Action #2 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	There is a correction in the information of the cross check. The cross check of the energy measure will be made with a report that is published by the CCEE. This report mentions the net energy generated. Also all the extra information was changed to the "Description of measurement methods and procedures to be applied" section.
DOE Assessment #2 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.*	The QA/QC procedures were rephrased and the information is clear and direct. (Editorial): The extra information was removed from the "Any comment" section and included in the "Description of measurement methods and procedures to be applied" section. **CL is closed**

Finding	CL B8
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☒ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements

Finding	CL B9		
Classification	☐ CAR	☒ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	In section B.7.2, please include a simplified wiring diagram including all turbines, meters, substations, tension transformations and the delivery point. As it is anticipated that a new project activity might be developed next to the project activity, please clarify, whether it would use the same transmission line to the delivery point (Substation Salitre III) and whether this would in the future affect the precision of the measurement of the project activity, i.e. difficult to provide precise information of net energy delivered to grid by each project.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	It added a complete diagram with all information requested in Section B.7.2. The delivery point is the substation Salitre III. Discussed in Section B.7.2, which outside the park will be installed two meters to calculate the power produced by each wind farm.		
DOE Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.*	A simplified and clear wiring diagram including all the information was included at section B.7.2. In addition, there is a statement about the installation of two additional meters to monitor the power generated from each wind farm, as there is a plan to develop another wind farm close to the project activity. Nevertheless, as the parameter $EG_{facility,y}$ refers to the quantity of net electricity generation supplied by the project plant/unit to the grid, the energy cannot be measured at the exit of the wind farm substation (as shown at the diagram), but at the delivery point (Substation Salitre III). Then, either the meters shall be at the delivery point of the energy (Substation Salitre III) or the monitoring plan of the parameter $EG_{facility,y}$ shall state, how the calculations to		

Finding	CL B9
	measure the net energy will be done as the energy of the all wind farms will be measured at the exit of the wind farm substations, will use the same transmission line and will be delivered and measured at the same delivery point. **CL remains open**
Corrective Action #2 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	In B.7.2 it add the section "Calculation of energy to be monitored", in this section is explained that there will be meters at the exit of the wind farm and a meter in the substation that will measure the net energy. However in the future there will be more wind farms that will be connected to the same transmission line, as consequence the meter at the substation can't measure the net energy of the wind farm, therefore in section B.7.1 of the PDD was added the equation 4 and 5 to calculate the loss energy due the transmission line and to obtain the net energy for each wind farm. In order to calculate the net energy of the project is necessary to calculate a power loss factor due energy loss through transmission line, this factor is calculated with the following equation: $$X_{Loss} = \frac{EG_{DP}}{\sum_{m} EG_{m,WF}} \quad (4)$$ Where: X_{Loss} = Loss factor due energy loss through transmission line. EG_{DP} = Net energy measure at the Substation/ Delivery Point (MWh). $EG_{m,WF}$ = Gross energy measure by each wind farm at the exit of the wind farm (MWh), including the project activity. With the calculation of the loss factor to obtain the net energy of the wind farm will be calculated by the following: $$EG_{m,Net} = X_{Loss} * EG_{m,WF}$$ Where:

Finding	CL B9
	$EG_{m,Net}$ = Net energy of the wind farm (MWh). X_{Loss} = Loss factor due energy loss through transmission line (calculated in equation 4). $EG_{m,WF}$ = Gross energy measure by the project wind farm at the exit of the wind farm (MWh), including the project activity. The sum of the net generation of each wind farm using the equation 5 will cross check with the report published by the CCEE.
DOE Assessment #2 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.*	The way that the parameter $EG_{facility,y}$ will be measured is considered adequate by the validation team as the total amount of energy from all wind farms will be monitored and a loss factor will be calculated and finally applied to the generated energy of the project activity. Nevertheless, it is necessary to clearly demonstrate this calculation at the parameter $EG_{facility,y}$ in section B.7.1. Please include equation 5 and any other variables as the way that the parameter will be calculated as the monitoring method is now a calculation. In addition, please switch "$EG_{m,Net}$" by "$EG_{facility,y}$" as this is the parameter required by the methodology.
Corrective Action #3 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	It added more details in the table of section B.7.1, additionally it made the switch of "$EG_{m,Net}$" to "$EG_{facility,y}$". The following was added to the section B.7.1 of the PDD. This value is calculated, considering the losses of energy due to the length of the transmission line, the data is calculated using the following equation: (5) $EG_{facility,y} = X_{Loss} * EG_{m,WF}$ Where: $EG_{facility,y}$ = Quantity of net electricity generation supplied by the project plant/unit to the grid in year *y*

Finding	CL B9
	(MWh/yr) X_{Loss} = Loss factor due energy loss through transmission line (calculated in equation 4). $EG_{m,WF}$ = Gross energy measure by the project wind farm at the exit of the wind farm (MWh), including the project activity. The sum of the net electricity generation of each wind farm using the equation 5 will cross check with the report published by the CCEE. In order to calculate the net energy of the project is necessary to calculate a power loss factor due energy loss through transmission line, this factor is calculated with the following equation: $$X_{Loss} = \frac{EG_{DP}}{\sum_{m} EG_{m,WF}} \quad (4)$$ Where: X_{Loss} = Loss factor due energy loss through transmission line. EG_{DP} = Net energy measure at the Substation/ Delivery Point (MWh). $EG_{m,WF}$ = Gross energy measure by each wind farm at the exit of the wind farm (MWh), including the project activity. The variables X_{Loss}, EG_{DP} and $EG_{m,WF}$ are defined in this section.
DOE Assessment #3 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.*	The equation and variables were included at section B.7.1 and the monitoring method of parameter is now clearly stated. Parameter "$EG_{m,Net}$" was properly switched to "$EG_{facility,y}$". **CL is closed**
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☒ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken

Finding	CL B9
	☒ The project complies with the requirements

Finding	CL B10		
Classification	☐ CAR	☒ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	As assets will be fully depreciated at the end of the analysis period, the book value will be zero, no fair value was considered in the financial analysis. Nevertheless, please justify adequately, why it can be reasonably assumed that there is no expectation of potential profit on the realization of the assets at the end of the period, or conservatively include a fair value in the cash flow and calculation of IRR.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	Please refer to the following link: http://www.cpcon.eng.br/gestao-patrimonial/gestao-e-financas/depreciacao-gestao-patrimonial/ In this web page we can see a table that mentions different values of depreciation for different types of assets. For our case we can see the line of Machinery and Equipment for Energy Production (Line 4) we can see that the depreciation rate is 10%. That means that after the 10 year the fair value of the project is zero. The economic model has been corrected in order to depreciate the investment over 10 years. See document **P066_VAL_171**		
DOE Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.*	The PP has adopted the understanding that as machines and equipment used to produce energy have a depreciation rate of 10%, they are fully depreciated after 10 years. Nevertheless, it is important to clarify that the assumption above is valid for the depreciation in accounting. Even after the full depreciation of the equipments there will be a market value of the assets that have to be considered at the financial analysis. In other words, the equipment, even fully depreciated, has a value that has to be considered in the calculations. Please, revise the section. **CL remains open**		

Finding	CL B10
Corrective Action #2 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	It was a detailed review on the subject of the market value of the turbines. However, although support was present where it is argued that in Brazil the depreciation of the turbines is 10 years, a document that was produced by the supplier (Vestas), states that the lifetime of equipment is 20 years. Depreciation is defined as the loss of monetary value from an asset. At the end of its lifetime, an asset is considered to be fully depreciated and since the turbines will be in use for the entirety of their lifetime, the rescue value o market value of the active is taken as zero. However, not seeing this case in financial terms, we may think that the turbines would have another commercial value (for example sold as scrap), but in these cases the market value after 20 years is negligible, the main reason being that this value is difficult to estimate. Another reason why the market price of the turbines is zero after 20 years is that besides being fully depreciated, it is possible that a wind turbine that has been operating 20 years will be not attractive to buy, because after all the operating time, the turbine will be very inefficient, and in consequence it would be better to buy a new wind turbine.
DOE Assessment #2 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.*	The full depreciation will happen now in 20 years as this is the lifetime of the main equipment as stated by the supplier which is deemed reasonable. The proper changes were made at the Excel spreadsheet calculations. **CL is closed**
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☒ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements

Finding	CL B11		
Classification	☐ CAR	☒ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the*	In section B.5, please: a. Fill up sub-step 1b as per the title, being clear about the		

Finding	CL B11
context (e.g. section)	consistency with mandatory laws and regulations; b. Discuss the serious consideration of CDM in the decision making.
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	New information was added in section B.5 to specify the consistency with mandatory laws and regulations; and the discussion about the consideration of CDM in the decision making.
DOE Assessment #4 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.*	a. It is now clearly stated the consistency of the alternatives with mandatory laws and regulations in sub-step 1b; b. It is necessary to discuss the consideration of CDM in the management decision, which happened when the PP offered the bid price. Please revise it.
Corrective Action #2 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	The following information was added to the new PDD version 7 (P066_VAL_252), in order to support the consideration of the CDM since the beginning of the project. The main conclusion of the timeline is that Eólica Pedra do Reino S.A considered the CDM since the beginning of the development of the project; this is supported by the following reasons: • In the National Auction (December 2009) Eólica Pedra do Reino S.A. offered a bid price for the sales energy of 152.27 $R/MWh, this bid price was obtained due to a complete economic analysis made by Eólica Pedra do Reino S.A. One of the variables that was considered in the economic analysis was the CDM incentives, therefore, Eólica Pedra do Reino S.A. considered the CDM incentives when offered a bid price for the sales energy. • The starting date of the project activity was when Eólica Pedra do Reino S.A. made a payment for a Bid Price Guarantee to the ANEEL (March, 2010), before this event happened Eólica Pedra do Reino S.A. sent the Prior CDM Consideration to UNFCCC (February, 2010). These events demonstrated that the CDM Consideration was made since the first steps of the project development. The CDM incentive helps as an extra economical support to face the biggest economical barrier that is involved with the development of a wind farm. As it mention the PP considered the CDM incentives since the National Auction to offer a Bid Price. Also before the starting date the Prior CDM Consideration was sent to UNFCCC to demonstrate the CDM Consideration before the first compromising event of the project.
DOE Assessment #5 *The assessment shall encom-*	It is clear by the PP's statement and by the interviews performed by

Finding	CL B11
pass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.	the validation team that the CDM was considered for the calculations of the value that would be offered during the auction which became the bid price. In addition, the formalities of communication of the project activity have been done properly. **CL is closed**
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☒ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements

Finding	CL B12		
Classification	☐ CAR	☒ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	Sensitivity Analysis: a. Please, include both variations (positive and negative) for all chosen variables; b. Please include a 'Breakeven Analysis' to assess the benchmark crossing and why the benchmark will most likely not be crossed; c. Include a graph to demonstrate this analysis.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	Please refer to document P066_VAL_239 this is the PDD version 6.0 and document P066_VAL_237 this is the new economic model spreadsheet. Both documents now include the complete variation (positive and negative) for all chosen variables. Also the "Breakeven Analysis" was added to both documents. In the spreadsheet you can see the Tab "Breakeven Analysis", to observe the information added to the PDD.		

Finding	CL B12
DOE Assessment #4 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.*	The complete variation for all chosen parameters has been added to the documentation. In addition, breakeven analysis and their demonstration for each parameter have also been included and clearly demonstrate the breakeven points. Nevertheless, two points have to be better explained: a. critical analysis for O&M (p. 20): it is mentioned that "…this case is not possible to happen…". Please give a reasonable justification, why this decrease is unlikely, not only that it is unlikely; b. critical analysis for the Plant load factor (p. 21): it is not enough to mention "that a typical wind farm has a plant load factor between 20-40%"…"supported with the particular case of Brazil that shows that the plant load factor (capacity factor) of the wind energy in Brazil is approximately 30%". Please be specific and explain why the plant load factor of this project is not likely to increase 10.95%. **CL remains open**
Corrective Action #2 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	There is a new version of PDD (document P067_VAL_235), in this document was added a detailed explanation of both variables (O&M, plant load factor) in order to demonstrate that the two scenarios are not probable to happen.
DOE Assessment #6 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.*	The critical analysis for O&M and Plant load factor was revised and public and official documents were used to give consistency for the assumptions. **CL is closed**
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☒ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements

Finding	CL B13		
Classification	☐ CAR	☒ CL	☐ FAR

Finding	CL B13
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	Section B.6.3: for the ex-ante calculation of emission reductions, please clarify, why a 3 years weighted average has been used for determining the operating margin emission factor as per the Tool to calculate the emission factor for an electricity system, a 3 years weighted average is only applicable when applying simple OM, simple adjusted OM or average OM, but not dispatch data analysis.
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	The ex-post emission calculation was updated. Only the one year historic date (latest public available) has been used to calculate the operating margin emission factor accordion to the "Tool to calculate the emission factor for an electricity system". Additionally the information of the operating margin was updated using the last information available in the DNA web page. However, it is important to remark that this is only a reference value; the emission factor will be updated yearly for the emissions reduction calculation during verification because the emission factor is ex-post.
DOE Assessment #4 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.*	The whole section has been revised and the data are now updated and in accordance with the requirements. **CL is closed**
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☒ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements

Finding	FAR D1		
Classification	☐ CAR	☐ CL	☒ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	At the moment of validation, it consists of a greenfield project, therefore, there is no environmental license yet. The operating license issued by the environmental authority shall be requested during the first verification to ensure that the project complies with all environmental requirements of host country.		
Proposed Corrective Action #1 *This section shall be filled by the PP. It shall address the proposed corrective action in details.*	The Environmental License will be presented to the verification team.		

Finding	FAR D1
DOE Assessment #1 *The assessment of the proposed corrective action. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.*	Proposed action accepted.
Conclusion *Tick the appropriate checkbox*	☒ To be checked during the first periodic verification ☐ Appropriate action was taken ☐ Project documentation was corrected correspondingly ☐ Additional action should be taken ☐ The project complies with the requirements

5 VALIDATION ASSESSMENT SUMMARY

5.1 General Description of the Project Activity

5.1.1 Participation

LOA

At the time of completion of this report the LoA of the Brazilian DNA (host country) is pending. For the Brazilian DNA, a positive validation opinion is a prerequisite for the host government approval and thus the LoA cannot be considered at the present validation stage.

The LoA from the Brazil is necessary for the request of the LoA from the other parties (Spain and United Kingdom).

According to CDM requirements, at the validation stage, a party may or may not have provided its approval by the time of making the PDD public. The approval of the involved parties is required at the time of registration request.

The registration request will not be submitted before the LoAs are issued by the respective DNAs.

Project Participants

The involved parties and respective PPs are:

- Brazil (host party): Eólica Pedra do Reino S. A. and Eólica Energia Ltda.;
- Spain: Gestamp Eólica S. L.;
- United Kingdom: CO_2 Global Solutions International S. A.

The LoA can be issued only with a positive validation opinion.

5.1.2 Contribution to Sustainable Development

As stated in the PDD, the contribution to sustainable development of the project activity will be of three types:

- Environmental sustainability:

- the project activity uses renewable energy resources for electricity generation contributing to a reduction of GHG emissions;
- the project activity avoids the exhaustion of limited natural resources as electricity is generated using renewable energy resources;
- the project activity do not cause any significant negative environmental impact.

- Economic and Social sustainability:
  - the project activity generates employment and improvement of income and working conditions in areas with low working offer and conditions;
  - the project activity generates additional income to the landowners as they can develop another economic activity simultaneously in part of the area;
  - the project activity will increase the generation of clean electricity.
- Technological development:
  - the new technology will bring new knowledge and experience to the region.

The host government approval to the sustainable development will only be confirmed with the LoA issuance, which can be requested only with a positive validation opinion.

5.1.3 PDD editorial Aspects

The CDM-PDD template version 3 has been correctly applied and the PDD is filled in compliance with the latest guidance.

5.1.4 Technology to be employed

The description of the project in the PDD is complete and accurate.

The proposed project activity is the implementation of a wind farm with 30 MW of total installed capacity and an expected annual output of 99.63 GWh.

The project activity consists of ten Vestas turbines of 3.0 MW each that will be mounted on an 80 meters high steel tower and a rotor diameter of 90 meters.

The wind farm will be interconnected to Substation Salitre III by a transmission line of 35 km.

The employed technology is environmentally safe and sound as well as state of the art, manufactured by a leading provider, Vestas.

5.1.5 Small Scale Projects

Not applicable as it is a large scale project.

5.2 Project Baseline, Additionality and Monitoring Plan

5.2.1 Application of the Methodology

The project applies the baseline and monitoring methodology ACM0002 – "Consolidated baseline methodology for grid-connected electricity generation from renewable sources" – version 12.1.0 and the methodological tools: "Tool to calculate the emission factor for an electricity system" – version 02.2.0; "Tool for demonstration and assessment of additionality" – version 05.2 and "Combined tool to identify the baseline scenario and demonstrate additionality" – version 3.0.1. They all are approved, valid and derive from the UNFCCC CDM website. At the time of on-site visit, ACM0002 – Consolidated methodology for grid-connected electricity generation from renewable sources – version 11.0. has been applied which was valid and applicable at that time. Thereof, the Checklist questions provided in the Annex refer to ACM0002, version 11.0, while the methodology ACM0002, version 12.1.0, is referenced in the final version.

All applicability conditions of ACM0002 version 12.1.0 are met and the project activity is in line with all requirements and stipulations mentioned in all sections of the applied methodologies.

No significant emissions are expected from the project or from leakage.

5.2.2 Project Boundary

The project boundaries (geographic and also related to GHG sources and gases) are correctly given in the PDD, as described in section B.3 of the PDD. The methodology does not allow a choice of which GHG sources / sinks are included, and there are no other sources which are impacted by the project which are not addressed by the applied methodology.

5.2.3 Baseline Identification

The description of the baseline identification in the PDD is transparent and verifiable. According to ACM0002 version 12.1.0, the baseline scenario for the implementation of a new grid-connected renewable power plant/unit (in this case wind) 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’”.

5.2.4 Calculation of GHG Emission Reductions

The calculation of ERs is done as per the applied methodology. All data not to be monitored were correctly applied and values were cross-checked with public available data or supporting documents and are thus deemed precise and conservative. The values for the monitoring parameters are plausible. The estimation of emission reductions is deemed plausible and conservative.

5.2.5 Additionality Determination

Consideration of CDM in decision making (if project start before validation)

The management decision was on 2009-12-14 which was the day, when the bid price was offered establishing the acceptance of all conditions and price to operate the wind farm and generate energy, followed by the first major financial commitment which occurred on 2010-03-26, the date of the deposit of Bid Price Guarantee, corresponding to 5% of total investment of the project, required by the government as pre-requisite for granting the official authorization for project implementation according to the rules set out in the energy Auction Edict, at which the project bid for energy price was a winner. The PPs revealed evidences (internal studies and confirmation was given by means of interviews) that carbon credits have been considered in the calculations of the bid price.

So, the starting date of the project activity is March 26th, 2010. The evidences for this date are solid and the decision was serious and made by authorized personnel. So, the starting date of the project activity is after August 2nd, 2008 and the notifications to the Brazilian DNA and UNFCCC were sent within the 6 months of the project starting date required by EB49, Annex 22.

A timeline of relevant milestones has been included at section B.5 of the PDD.

Application of methodology / methodological tools

The additionality was justified in section B.5 of the PDD in accordance with the requirements of the "Tool for the demonstration and assessment of additionality – version 05.2", following its steps.

Alternatives

The only considered alternatives are the continuity of the current situation and the proposed project activity not undertaken as a CDM project activity.

No other alternative has been considered as a plausible one by the PPs.

Investment analysis

It was demonstrated at the investment analysis that the project activity is not the most attractive alternative for the PPs.

The latest version of the Guidance on the Assessment of Investment Analysis (EB51 Annex 58) was applied in the assessment and the calculation approach is correct. All parameters are assessed to be plausible and were cross-checked with documental evidence or publicly available sources.

The calculation approach is correct and all assessed parameters are plausible.

In addition, the sensitivity analysis with a variation from -10% to +10% performed with the following items: total investment, price of electricity, O&M costs, transmission costs and plant load factor was done and continues to give a lower IRR than the benchmark rate.

The chosen benchmark (Brazilian government bond with 21 years maturity – with the most conservative yield of all issued bonds – plus a project risk premium – with the lowest basic spread) was deemed appropriate by the validation team.

For a detailed assessment please see check list section B.5 and Table A-3 Annex 3.

Barrier analysis

Not applicable as the barrier analysis was not chosen by the project participant.

Common practice analysis

The geographical region that was considered for the analysis is the national (Brazil) scenario, which is reasonable as wind farms represent 0.69% of the total amount of generated electricity in Brazil and the energy sector rules are the same for the whole country.

In addition, 74% of wind projects currently operating in Brazil have been implemented with the benefits of a Brazilian development incentive program for energy generation (PROINFA) and 4 are registered as CDM projects.

This demonstrates that wind farms are not the common or prevailing practice.

Summary

As described in the PDD and assessed in detail in the Annexes below, the additionality demonstration is based on the investment analysis. The project activity is not the most attractive alternative as its IRR is lower than the chosen benchmark (Brazilian government bond rate with 21 years maturity plus a BNDES bond as a project risk premium).

In addition, the project activity is not common practice in Brazil.

5.2.6 Monitoring Methodology

The monitoring plan in the PDD is in compliance with the applied monitoring methodology ACM0002 – version 12.1.0 and it is assessed by the validation team as adequate and feasible. For details see section B.6 of the Annex below.

5.2.7 Monitoring Plan

The monitoring plan in the PDD covers all parameters which have to be monitored w.r.t. the project boundary, in line with the monitoring methodology ACM0002 – version 12.1.0. The monitoring arrangements were assessed by the validation team and can be implemented and are feasible within the project design. For details see section B.6 of the Annex below.

5.2.8 Project Management Planning

The project management planning is appropriate for the purpose of the project monitoring as described in section B.7.2 of the PDD.

5.2.9 Crediting Period

The choice of the renewable seven years crediting period was unambiguously given in section C.2.2 of the PDD and corresponding calculation spreadsheet.

The crediting period starting date is 2012-01-01, but not before project registration which is deemed appropriate.

5.2.10 Environmental Impacts

A Simplified Environmental Report (RAS) was properly carried out, which was reviewed by the validation team.

No significant adverse impacts are envisaged for this project activity and the mitigatory measures, as stated at the PDD, will be performed in accordance with the activities asked at the final environmental license.

5.2.11 Comments by Local Stakeholders

Relevant local stakeholders have been invited to comment the project activity, as correctly described in section E of the PDD and being in line with host country's DNA rules.

No comments have been received.

6 VALIDATION OPINION

Eólica Pedra do Reino S. A. has commissioned the TÜV NORD JI/CDM Certification Program (CP) to validate the project: " Pedra do Reino Wind Farm" with regard to the relevant requirements of the UNFCCC for CDM project activities, as well as criteria for consistent project operations, monitoring and reporting. UNFCCC criteria include article 12 of the Kyoto Protocol, the modalities and procedures for CDM (Marrakech Accords) and the relevant decisions by COP/MOP and CDM Executive Board
In the course of the pre-validation 02 Corrective Action Requests (CARs) and 15 Clarification Requests (CLs) were raised and successfully closed. In addition, 01 Forward Action Request (FAR) was raised and shall be checked during the first verification.

The review of the project design documentation and additional documents related to baseline and monitoring methodology; the subsequent background investigation, follow-up interviews and review of comments by parties, stakeholders and NGOs have provided TÜV NORD JI/CDM CP with sufficient evidence to validate the fulfillment of the stated criteria.

In detail the conclusions can be summarized as follows:

- The project is in line with all relevant host country criteria (Brazil) and all relevant UNFCCC requirements for CDM. At the time of the completion of the validation the LoA is pending. For the Brazilian DNA a positive validation opinion is a prerequisite for the host government approval and thus the LoA could not be considered at the present validation stage.
- The project additionality is sufficiently justified in the PDD.
- The monitoring plan is transparent and adequate.
- The calculation of the project emission reductions is carried out in a transparent and conservative manner, so that the calculated emission reductions of 264,320 tCO_2e are most likely to be achieved within the 7 years renewable crediting period.

The conclusions of this report show, that the project, as it was described in the project documentation, is in line with all criteria applicable for the validation. The request for registration will only be issued after the LoAs from host country DNA and other parties are obtained.

Essen, 2011-09-20

Dr. Jochen Schubert

TÜV NORD JI/CDM CP

Validation Team Leader

Essen, 2011-09-20

Martin Saalmann

TÜV NORD JI/CDM CP

Final Approval

7 REFERENCES

Table 7-1: Documents provided by the project participant

Reference	Document
/EIA/	RAS (Simplified Environmental Report) – July/2009 – similar to an EIA and done by Maria Aurenita de Oliveira Vasconcelos - Msc Gestão Ambiental
/FD/	Financial Data: - Decree # 2410 – Official statement of ANEEL taxes – 1997-11-28 - Law # 10865 – Rules of PIS, PASEP and COFINS– 2004-04-30 - Article "Economics of Wind Farms in Brazil", by J. P. Molly – DEWI Magazin # 25 – August 2004 - Debt Report - Brazil issues local currency bond on external market – Brazilian National Treasury – February 2007 - Electric Energy Fee and Final Price Table – Resolution 806 – issued by COELBA – 2009-04-14 - Land lease contract – 2009-05-12 - Annex IV to Auction #3/2009, Process 48500.002227/2009-21 – Confirmation of Bidding Price – 2010-02-23 - Study of Sources of Alternative Energy – Electric Engineering Department of the Federal University of Minas Gerais – 2010-03-28 - ANEEL Resolution # 972 – Resolution about Energy Transmission Cost – 2010-04-19 - Tax Guidelines of Secretariat of the Federal Revenue of Brazil – Guide of Brazilian Taxes - Gestamp's letter with the estimative of costs based on its experience – 2010-05-31 - Article "Breaking down the cost of wind turbine maintenance", by David Milborrow – Wind Power Monthly – 2010-06-15 - Vestas' Proposal 20610-PR-GES-V90-3-80m – 2010-07-08 - Ministerial Directive issued by the Ministry of Mines and Energy to Eólica Pedra do Reino S.A. to establish itself as an independent energy producer implementing the wind farm Pedra do Reino Wind Farm on 2010-06-28 - Ratifying Bid Price Term – Process # 48500.002227/2009-21 – 2010-02-23 - Print Screen ANEEL website – price of energy – 2010-09-14 - Credit for Industrial and Offshore Projects – BNDES – September 2010 - List of issued Brazilian government bond rate with 21 years maturity –

Reference	Document
	Brazilian National Treasury – 2010 - Law # 12382 that establishes the new minimum salary in Brazil – 2011-02-25 - Article “Brazil: growth subject to constraints” – April 2011 - Article about the Brazilian minimum salary – Mundo.com – 2011-07-15 - Gestamp’s letter with the estimate of number of employees based on its experience – 2011-07-18 - Inflation 1999-2010 – targets and real – Central Bank of Brazil - Country Risk attributed by the Organization for Economic Co-operation and Development (OECD) - Study of Operation and Maintenance Costs of Wind Generated Power – Wind Energy - The Facts (WindFacts) - Costs & Prices – Wind Energy - The Facts - Volume 2 – by Poul Erik Morthorst - Comparison Analysis of some Wind Farm Projects in Brazil to Evaluate Total Investment and Total capacity - Supplier’s proposals: • Idom’s proposal for geotechnical study; • Arruda’s proposal for construction roads and the execution of foundations; • Próxima Engineering’s proposal for topography services; • Eólica Technology’s proposal for complementary road service; • Doisa’s proposal for access implementation; • WEG’s commercial proposal; • Sercol’s contract mapping and environmental licenses studies of the transmission line; • Martini Engineering‘s proposal for executive project of electrical network connection; • Gestamp Eólica’s proposal for construction management; • GPS’s proposal for supervision of the construction; • Marsh’s estimation for transport and assembly insurance; • Ren Telecom’s proposal for optical grid; • Arruda’s proposal for tower and equipment
/IRR/	IRR calculation sheet

Reference	Document
/LOA/	Letter of Approval – not yet available
/MOC/	Modalities of Communication – not yet available
/OL/	Licenses: - Preliminary Location License – Directive 13269 – issued by IMA on 2010-08-03 to Eólica Energia Ltda. for Wind Farm Pedra do Reino - Ministerial Directive issued by the Ministry of Mines and Energy to Eólica Pedra do Reino S.A. to establish itself as an independent energy producer implementing Pedra do Reino Wind Farm on 2010-06-28
/PLF/	Plant Load Factor: Evaluation of Wind Resources – Barlovento Recursos Naturales S.L. – April/2010
/PDD/	Project Design Document named "*Pedra do Reino Wind Farm*" – version 1 (2010-06-24) hosted from 2010-07-14 to 2010-08-12 until version 9 (2011-09-14)
/PSD/	Evidences of early consideration and project starting date: - Auction Edict – 2009-11-10; - Bid Price Guarantee of 5% - confirmation of deposit , 2010-03-26 - Email to UNFCCC – Prior Consideration Form – 2010-02-03; - Email from UNFCCC – Prior Consideration Form – 2010-02-18; - Email to DNA – Prior Consideration Form – 2010-02-03; - Email from DNA - Prior Consideration Form – 2010-02-04; - Contract between TÜV NORD CERT GmbH and Eólica Pedra do Reino S.A. and CO2 Global Solutions International S.A. for validation of this project activity, signed by clients on 2010-07-08.
/SHCP/	Stakeholder consultation process evidences: - Invitation letters - Confirmations of Receipt - Brazilian Post
/TD/	- Vestas Brochure – General Specification V90–3.0 MW VCRS 60 Hz - Vestas Brochure V90-3.0MW

Reference	Document
	- Wind Farm Layout
/XLS/	Emissions reduction calculation spreadsheet

Table 7-2: Background investigation and assessment documents

Reference	Document
/ACM002/	ACM 0002: Consolidated baseline methodology for grid-connected electricity generation from renewable sources – version 12.1.0 ACM0002: Consolidated methodology for grid-connected electricity generation from renewable sources – version 11.0
/CPM/	TÜV NORD JI / CDM CP Manual (incl. CP procedures and forms)
/EL/	Environmental Legislation: - CONAMA's Resolution # 279/2001 - Federal Law 380/2008
/GCP/	UNFCCC: Guidelines for completing CDM-PDD and CDM-NM
/GT/	Glossary of CDM Terms
/IPCC-GP/	IPCC Good Practice Guidance & Uncertainty Management in National Greenhouse Gas Inventories, 2000
/IPPC-RM/	Revised 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Reference Manual
/KP/	Kyoto Protocol (1997)
/MA/	Decision 3/CMP. 1 (Marrakesh – Accords & Annex to decision (17/CP.7))
/MT/	Methodological Tools: - Tool to calculate the emission factor for an electricity system – version 02.2.0 - Tool for demonstration and assessment of additionality – version 05.2 - Combined tool to identify the baseline scenario and demonstrate additionality – version 3.0.1

Reference	Document
	- Tool to calculate project or leakage CO_2 emissions from fossil fuel combustion – version 2.0
/VVM/	Validation and Verification Manual (Version 1.2, Annex 1; EB 55)

Table 7-3: Websites used

Reference	Link	Organization
/aneel/	http://www.aneel.gov.br/	National Electric Energy Agency (general webpage)
	http://www.aneel.gov.br/aplicacoes/editais_geracao/documentos/032009_Edital_LER_10-11-9_.pdf	Auction Edict #3/2009
	http://www.aneel.gov.br/aplicacoes/editais_geracao/documentos/032009-Resultado%20por%20Vendedores.pdf	Auction Bid Prices
/bcb/	http://www.bcb.gov.br http://www.bcb.gov.br/?SELICTAXA	Central Bank of Brazil
/ben/	https://ben.epe.gov.br/	Energetic Research Enterprise (National Energy Balance)
/ccee/	http://www.ccee.org.br/	Chamber of Electric Energy Commerce
/cer/	https://portal.hpd.global.reuters.com/site/applist.aspx	Reuters 3000 Xtra Hosted Terminal platform

Reference	Link	Organization
/change/	http://www.x-rates.com/	Exchange Rates
/conama/	http://www.mma.gov.br/port/conama/ http://www.mma.gov.br/port/conama/res/res01/res27901.html	National Environmental Council
/co2/	http://www.co2-solutions.com/#/brgstmp01/4546777851	CO2 Solutions
/dna/	http://www.mct.gov.br http://www.mct.gov.br/index.php/content/view/74689.html	DNA of Brazil Published Emission Factor of the SIN
	http://www.marm.es/es/	DNA of Spain
	http://www.environment-agency.gov.uk	DNA of UK
/eolica/	http://www.eolica.com.br/home/index.php	Eólica Energia
/eletrobras/	http://www.eletrobras.com/elb/main.asp	National Electric Utility Company (State Owned)
/fazenda/	www.receita.fazenda.gov.br	Federal Revenue Bureau
/gestamp/	http://www.gestampeolica.com/	Gestamp Eólica
/ima/	http://www.ima.ba.gov.br/index.php/cepram	IMA CEPRAM
/ipcc/	www.ipcc-nggip.iges.or.jp	IPCC publications

Reference	Link	Organization
/ons/	http://www.ons.org.br/home/	National Operator of the Electric System
	http://www.ons.org.br/historico/geracao_energia.aspx	Historic Generation Data
/unep/	http://cdmpipeline.org/	UNEP RISO CDM Pipeline
/unfccc/	http://cdm.unfccc.int	UNFCCC
/vestas/	http://www.vestas.com/	VESTAS

Table 7-4: List of interviewed persons

Reference	MoI[1]		Name	Organization / Function
/IM01/	V	☒ Mr. ☐ Ms	Gustavo de Novaes P. Leite	Eólica Energia Ltda./ Project Manager
/IM02/	V	☒ Mr. ☐ Ms.	Alejandro Eliud Araizaga Esquivel	CO2 Global Solutions/ Consultant

[1)] Means of Interview: (**T**elephone, **E**-Mail, **V**isit)

ANNEX

A1: Validation Protocol

A2: Assessment of Baseline Identification

A3: Assessment of Financial Parameters

A4: Assessment of Barrier analysis

A5: Outcome of the GSCP

A6: Statements Of Competence of Team Members

ANNEX 1: VALIDATION PROTOCOL

Table A-1: Requirements Checklist

Checklist Item (incl. guidance for the validation team)	**Validation Team Comments** (justification and substantiation of information, data and evidences)	**Ref.**	**Draft Concl.**	**Final Concl.**
A. General Description of Project Activity				
A.1. Approval *The written approval of the parties involved is a mandatory requirement*				
A.1.1. Has the project provided written approvals of all parties involved? (EB 55 Annex 1 §44) *Indicate whether a letter of approval has been received, with a clear reference to the supporting documentation.* *Indicate whether this letter was provided to the DOE by the project participants or directly by the DNA*	*Description:* Brazil is the Host Party. In accordance with the CDM M&P at the stage of validation, a Party involved may or may not have provided its approval at the time of making the PDD public. The approval of the parties involved is required at the time of requesting registration. The LoA from the Brazil is necessary for the request of the LoA from the other parties (Spain and United Kingdom). *Justification of evidences:* For the Brazilian DNA a positive DOE opinion is necessary prior to the request of the LoA. *Conclusion:* The LoA will be requested, if the project receives	/dna/	OK	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	a positive opinion.			
A.1.2. Are the approvals issued from organisations listed as DNAs on the UNFCCC CDM website? (EB 55 Annex 1 §§ 44, 47, 48, 49 (b), 49 (c), 53) *Indicate the means of validation employed to assess the authenticity, i.e. in case of doubt whether LoA has been verified with the DNA. Further describe which entity submitted the LoA for validation.*	*See comments at A.1.1 above.*	/dna/	OK	OK
A.1.3. Do the written approvals confim that the corresponding party is a Party to the Kyoto Protocol? (EB 55 Annex 1 §45, (a))	*Description:* The LoA is missing. However, Brazil, the host country, has ratified the Kyoto Protocol on 23rd August 2002. The Brazilian DNA assigned for the CDM is the "Interministerial Commission on Global Climate Change". *Justification of evidences:* Evidenced at the UNFCCC website. *Conclusion:* The project complies with the requirement.	/unfccc/	OK	OK
A.1.4. Do the written approvals confim that the participation is voluntary? (EB 55 Annex 1 §45, (b))	*See comments at A.1.1 above.*	/dna/	OK	OK
A.1.5. Does the written approval from the host country confim that the project contributes to	*See comments at A.1.1 above.*	/dna/	OK	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
the sustainable development in the country? (EB 55 Annex 1 §45, (c))				
A.1.6. Do the written approvals refer to the precise project title in the PDD submitted for registration or an additional specification of the project activity, e.g. PDD version number? (EB 55 Annex 1 §§45 (d), 50)	*See comments at A.1.1 above.*	/dna/	OK	OK
A.1.7. Are the written approvals unconditional with regard to A.1.3 to A.1.6? (EB 55 Annex 1 §46)	*See comments at A.1.1 above.*	/dna/	OK	OK
A.1.8. Is the information regarding the project participants listed in section A3 and in Annex 1 of the PDD internally consistent to each other? (EB 55 Annex 1, § 51)	*Description:* Yes, as stated at section A.3 and in Annex 1, the project participants are: • Eólica Pedra do Reino S.A. • Gestamp Eólica S.L. • Eólica Energia Ltda. • CO2 Global Solutions International S.A. *Justification of evidences:* The PDD has been checked and it	/PDD/	OK	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	can be confirmed that both sections are consistent. *Conclusion:* The project complies with the requirement.			
A.1.9. Are all project participants listed in the PDD approved at least by one Party involved? (EB 55 Annex 1, § 51) *Indicate whether the participation of the project participant(s) has been approved by a Party to the Kyoto Protocol.* *Describe the means of validation employed to draw this conclusion.*	*See comments at A.1.1 above.*	/dna/	OK	OK
A.1.10. Are any other project participants approved but not listed in the PDD? (EB 55 Annex 1, § 52)	*See comments at A.1.1 above.*	/dna/	OK	OK
A.1.11. Does the DOE have a direct contractual relationship with the PP? (EB 55 Annex 1, §51 and EB 50, Annex 48, §§ 7-9) *Check whether the PPs listed in the published PDD are still listed in the PDD going to be submitted to request for registration.*	*Description:* There is a signed Proposal for carrying out the validation CDM Project "Pedra do Reino Wind Farm" – # 10CDMBR030600 – between TÜV NORD CERT GmbH and Eólica Pedra do Reino S.A. and CO2 Global Solutions International S.A. signed on 2010-07-08. *Justification of evidences:* It is a valid contract between the DOE and PP.	/PSD/	OK	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	Conclusion: A direct contractual relationship between the DOE and the PPs exists.			
A.2. Contribution to Sustainable Development *The project's contribution to sustainable development is assessed.*				
A.2.1. Has the host country confirmed that the project assists it in achieving sustainable development? (EB 55 Annex 1, §§ 123 – 125) *Contain a statement confirming whether the letter of approval by the DNA of the host party confirmed the contribution of the project to the sustainable development of the Host Party.*	*See comments at A.1.1 above.*	/dna/	OK	OK
A.2.2. Will the project create other environmental or social benefits than GHG emission reductions? (EB 55 Annex 1, §§ 123 – 125) *Describe the other positive aspects not related to GHG emission reduction on the environment.*	*Description:* The view of the project participants on the contribution of the project activity towards sustainable development is briefly described in section A.2. Besides GHG emission reductions, the project also helps reducing the reliance on fossil fuel for power generation and reducing pollution caused by it. Moreover, It increases job opportunities to local people.	/PDD/ /IM01/ /IM02/	~~CL A1~~	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	Justification of evidences: The project was reviewed in detail, the sites where the wind farm is located were inspected and operational and managerial staff was interviewed. *Conclusion:* The project creates other social-environmental benefits than GHG emission reductions. However, CL A1 was raised. See below: **(CL A1)** In section A.2, no evidence was submitted regarding the stated education, technical, social and environmental programs that will be carried out at the wind farm and also regarding the improvement of local infrastructure. Please, provide evidence of such commitment or remove the statements from section A.2.			
A.3. PDD editorial aspects *The PDD used as a basis for validation shall be prepared in accordance with the latest template and guidance from the CDM Executive Board available on the UNFCCC CDM website.*				
A.3.1. Has the latest version of the PDD form been applied? (EB 55 Annex 1, § 55)	*Description:* Yes, it has been used the version 3 of CDM-PDD. No deviations thereof have been observed. *Justification of evidences:* The website of the UNFCCC was used to cross-check the PDD's version with the latest version available.	/unfccc/ /GCP/	OK	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	Conclusion: The latest PDD template has been used.			
A.3.2. Has the PDD been duly filled in accordance with the latest guidance(s)? (EB 55 Annex 1, §§ 56, 57)	*Description:* The PDD has in general been filled in accordance with the PDD guidelines. Some minor changes have been asked and accomplished. *Justification of evidences:* Minor Editorial issues were discussed with PPs during site visit and a list of such items is given at the end of section 4 of this report. *Conclusion:* In general PDD has been filled according to latest guidance.	/PDD/ /unfccc/ /GCP/	OK	OK
A.4. Technology to be employed *Validation of project technology focuses on the project engineering, choice of technology and competence/ maintenance needs. The DOE should ensure that environmentally safe and sound technology and know-how is used.*				
A.4.1. Does the PDD contain a clear, accurate and complete project description? (EB 55 Annex 1, §§ 58, 59) *The PDD shall contain a clear description of the project activity which provides the reader with a clear understanding of the precise nature of the project activity and the technical*	*Description:* Yes, a comprehensive project description is given in sections A.2 and A.4.3 of the PDD. The project description is compatible with the type and category of the project activity as described in item A.4.2 of the PDD. *Justification of evidences:* For the assessment the validation team has: a) reviewed the PDD in detail; b) carried out a site	/PDD/ /aneel/ /IM01/ /IM02/ /TD/	OK	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
aspects of its implementation. *Pl. consider esp.* chapters *A.2, A.4.2 and A.4.3 (in case of LSC PDD) for assessment.* *Describe the process undertaken to validate the accuracy and completeness of the project description.* *Contain the DOE's opinion on the accuracy and completeness of the project description.*	visit; c) carried out interviews with technical and operational personnel of Eólica and the project consultants. *Conclusion:* The PDD contains a clear, accurate and complete project description.			
A.4.2. Is this description in accordance with the real situation or (in case of greenfield projects) is it most likely that the project will be implemented acc to the project description?	*Description:* Yes, it seems that the project will be implemented according to the project description. *Justification of evidences:* As a greenfield project, it seems that the project will be implemented according to the project description. *Conclusion:* It seems that the project will be implemented according to the project description.	/PDD/ /IM01/ /IM02/	OK	OK
A.4.3. In case the project involves alteration of the existing installation or process, is a clear description available regarding the differences between the project and the pre-project situation? (EB 55 Annex 1, §§63, 64) *Describe the steps taken to validate this issue.*	*Not applicable since the project does not involve the alteration of the existing installation or process. It is a green-field project.*	-	N/A	N/A

Checklist Item (incl. guidance for the validation team)	**Validation Team Comments** (justification and substantiation of information, data and evidences)	**Ref.**	**Draft Concl.**	**Final Concl.**
A.4.4. Does the project design engineering reflect current good practices? *Consider the equipment specifications, literature (e.g. EU BREF papers) and professional experiences. Describe the process undertaken to assess the engineering.*	*Description:* Yes, the project is a new wind power plant which generates energy using wind power. In PDD, section A.4.2, description of the technology is provided. The technology of the wind turbines is based on Danish know-how as it is provided by the world leading supplier Vestas and the project design is environmentally safe and sound. *Justification of evidences:* The validation team could verify the information above by inspecting the project site, reviewing technical data of the turbine-generators/TD/ and the project lay-out as well as the Simplified Environmental Report/EIA/ prepared by a third party as part of the environmental licensing process. *Conclusion:* The project design reflects current good practices.	/PDD/ /IM01/ /IM02/ /TD/ /EIA/	OK	OK
A.4.5. Does the project use state of the art technology or would the technology result in a significantly better performance than any commonly used technologies in the host country? *Describe the process undertaken to assess the state of the art technology.*	*Description:* Yes, the turbines will be provided by Vestas, which is leading manufacturer of wind technology worldwide. The towers, however, will be manufactured in Brazil. *Justification of evidences:* The validation team could verify the information above by inspecting the project site, reviewing technical data of the turbine-generators/TD/ and the project lay-out and interviewing the project manager of the project of Eólica.	/PDD/ /TD/ /vestas/	OK	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	Conclusion: The project design uses state of the art technology.			
A.4.6. Does the project make provisions for meeting training and maintenance needs? *Describe the process undertaken to assess the maintenance and training needs.*	*Description:* Yes, contract for maintenance of the turbines will be signed with Vestas or another specialized company. In any case training of maintenance personnel will be carried out by Vestas. Gestamp has large international experience in implementation and operation of wind farms. *Justification of evidences:* Described in section A.4.3 and B.7.2 of PDD and confirmed by interviews with representatives of PPs. *Conclusion:* No further issues were observed.	/PDD/ /IM01/ /IM02/	OK	OK
A.5. Small scale project activity *It is assessed whether the project qualifies as small-scale CDM project activity*				
A.5.1. Does the project qualify as a small scale CDM project activity as defined in decision 4 / CMP.1 annex II? (EB 55 Annex 1, § 135 (a))	*The project does not qualify as a small-scale CDM project activity.*	/PDD/	N/A	N/A

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
A.5.2. Does the project apply one of the approved small scale categories and any methodology and tool referred therein? (EB 55 Annex 1, § 135 (b)) *Check, if applicable the expiry dates of the applied methodology. Further, take into consideration the general guidance to the methodologies[1], which provide guidance on equipment capacity, equipment performance, sampling and other monitoring related issues.*	*The project does not qualify as a small-scale CDM project activity.*	/PDD/	N/A	N/A
A.5.3. Is the small scale project activity not a debundled component of a larger project activity? (EB 55 Annex 1, § 135 (c)) *Describe the steps taken to validate this issue. Pl refer to the Compendium of guidance on debundling (EB 36, Annex 27).*	*The project does not qualify as a small-scale CDM project activity.*	/PDD/	N/A	N/A
A.5.4. Is an assessment of the environmental impacts of the proposed SSC CDM project activity required by the host Party? (EB 55 Annex 1, § 135 (d))	*The project does not qualify as a small-scale CDM project activity.*	/PDD/	N/A	N/A

[1] http://cdm.unfccc.int/methodologies/SSCmethodologies/approved.html

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
B. Project Baseline, Additionality and Monitoring Plan				
B.1. Application of the Methodology				
B.1.1. Does the project apply an approved and applicable CDM methodology and a valid version thereof? (EB 55 Annex 1, §65) *Describe the steps taken to validate this issue.*	*Description:* Yes, the project activity applies the approved methodology ACM 0002, version 11 which is an applicable and valid CDM methodology at the time of validation. *Justification of evidences:* To ensure that the applied methodology is approved by the executive board and the PP has chosen the latest version, the methodologies section of UNFCCC CDM website (http://cdm.unfccc.int/methodologies/PAmethodologies/approved.html) was visited. *Conclusion:* The project applies an approved and applicable version of a CDM methodology.	/PDD/ /ACM002/ /unfccc/	OK	OK
B.1.2. Is the applied CDM methodology identical with the version available on the UNFCCC website? (EB 55 Annex 1, §§65, 70) *Describe the steps taken to validate this issue.*	*Description:* The methodology applied by the PPs follows stipulations of the version available on UNFCCC website. *Justification of evidences:* The PDD was reviewed against the stipulations of the methodology. *Conclusion:* The stipulations of the published version have	/PDD/ /ACM002/ /unfccc/	OK	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	been followed.			
B.1.3. Are all applicability criteria in the methodology, the applied tools or any other methodology component referred to therein fulfilled? (EB 55 Annex 1, §§ 66(a)–(b), 68, 71, 76) *Describe for <u>each</u> applicability criterion listed in the selected approved methodology the steps taken to assess the information contained in the PDD.*	*Description:* In order to assess the applicability of the project, the PDD was reviewed and the applicability determination of the PDD was counter checked against the criteria given in the applicability section of the methodology. The information in the PDD was checked during on-site visit to prove that such information is valid and reflects the reality of the project. *Justification of evidences:* The methodology is applicable under the following conditions: **• For grid-connected renewable power generation project activities that (a) install a new power plant at a site where no renewable power plant was operated prior to the implementation of the project activity (greenfield plant); (b) involve a capacity addition; (c) involve a retrofit of (an) existing plant(s); or (d) involve a replacement of (an) existing plant(s).** The project activity fits option (a), as it consists of the implementation of a new wind power plant/unit. **• The project activity is the installation, capacity addition, retrofit or replacement of a power plant/unit of one of the**	/PDD/ /ACM002/ /unfccc/	OK	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	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; The project activity is the installation of a new wind power plant/unit. **• In the case of capacity additions, retrofits or replacements (except for wind, solar, wave or tidal power capacity addition projects which use Option 2: on page 10 to calculate the parameter $EG_{PJ,y}$): the existing plant started commercial operation prior to the start of a minimum historical reference period of five years, used for the calculation of baseline emissions and defined in the baseline emission section, and no capacity expansion or retrofit of the plant has been undertaken between the start of this minimum historical reference period and the implementation of the project activity;** Not applicable to the project activity as it consists of a new wind power plant. **• 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**			

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	reservoir; or Not applicable to the project activity. • **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/m2; or o 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.** Not applicable to the project activity. **The methodology is not applicable to the following:** **• Project activities that involve switching from fossil fuels to renewable energy sources at the site of the project activity, since in this case the baseline may be the continued use of fossil fuels at the site;** Not applicable to the project activity. **• Biomass fired power plants;** Not applicable to the project activity.			

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	• Hydro power plants1 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. Not applicable to the project activity. *Conclusion:* The Project fulfils all applicability criteria of the methodology.			
B.1.4. In case one or more applicability criteria have not been met, has the validation team requested clarification to, revision of or deviation from the methodology in accordance with the latest guidelines? (EB 55 Annex 1, §§ 72–75)	*Description:* Not applicable as the project meets all applicability conditions of ACM0002 version 11.0. *Justification of evidences:* See comment just above. *Conclusion:* Not applicable.	/PDD/ /ACM002/	N/A	N/A
B.1.5. Is the project in accordance with every other stipulation or requirement mentioned in all sections of the methodology? (EB 55 Annex 1, § 69, 71) *Describe the steps taken to check whether the proposed project activity meets all the other possible stipulations and /or limitations mentioned in all sections of the approved methodology selected.*	*Description:* In general, the project is in accordance with ACM0002, version 11.0. However, all findings raised must be closed to form an opinion *Justification of evidences:* See all findings of this report *Conclusion:* Please refer to all findings raised.	/PDD/ /ACM002/	~~Not yet OK~~	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
B.2. Project Boundaries *Project Boundaries are the limits and borders defining the GHG emission reduction project*				
B.2.1. Are the project's spatial boundaries (geographical) clearly defined? (EB 55 Annex 1, §§ 67(a), 78–80) *Provide information on how the validation of the geographical boundary has been performed either based on reviewed documented evidence or by describing what was observed/viewed during a site visit.*	*Description:* The spatial boundaries are not precisely described, so CLs A2 and B1 have been raised. *Justification of evidences:* The spatial boundaries of the project have to be better described and the flow diagram has to be revised, so CLs A2 and B1 have been raised. *Conclusion:* **(CL A2)** In section A.4.1.4, the coordinates given are those of the wind measurement tower. For further precision, please provide the GPS coordinates of each wind generator location. In addition, in section A.4.1.3, please indicate the access road and kilometer. **(CL B1)** In section B.3, according to ACM 0002, *the spatial extent of the project boundary includes the project power plant and all power plants connected physically to the electricity system that the CDM project activity is connected to*. Hence, please revise Figure 2 to include the national grid in the project boundary.	/PDD/ /ACM002/	~~CL A2~~ ~~CL B1~~	OK

Checklist Item (incl. guidance for the validation team)	**Validation Team Comments** (justification and substantiation of information, data and evidences)	**Ref.**	**Draft Concl.**	**Final Concl.**
B.2.2. Are all sources and GHGs included in the project boundary as required in the applied methodology? (EB 55 Annex 1, §§ 67(a), 78–80) *Provide information on how the validation of the GHGs and sources has been performed either based on reviewed documented evidence or by describing what was observed/viewed during a site visit.*	*Description:* Yes, all sources and GHGs included in the project boundary are included in the table in section B.3 of the PDD in line with ACM 0002. *Justification of evidences:* The PDD was cross-checked against sources and gases defined in ACM0002. *Conclusion:* The sources are in compliance with the applied methodology as well as with the real situation	/PDD/ /ACM002/	OK	OK
B.2.3. In case the methodology allows to choose whether a source and/or gas is to be included, is the choice sufficiently explained and justified? (EB 55 Annex 1, §§ 67(a), 78–80) *Confirm if the justification provided by the PPs is reasonable, based on assessment of supporting documented evidence provided by the PPs or by onsite observations.*	*Not applicable, since the methodology does not allow such choices*.	/PDD/ /ACM002/	N/A	N/A

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
B.3. Baseline Identification *The choice of the baseline scenario will be validated with focus on whether the baseline is a likely scenario, and whether the methodology to define the baseline scenario has been followed in a complete and transparent manner.*				
B.3.1. What possible baseline scenarios have been considered? (EB 55 Annex 1, §§ 67(b), 83) *Fill in all alternatives in table A-2.*	*Description:* The baseline is determined according to the applicable methodology and does not require alternative baseline consideration. See definition of baseline in B.3.3 below. *Justification of evidences:* ACM0002 provides a definition of the baseline for the installation of a new grid-connected renewable power plant/unit. *Conclusion:* See definition of baseline in B.3.3 below.	/PDD/ /ACM002/	N/A	N/A
B.3.2. Is the list of alternatives complete? (EB 55 Annex 1, §§ 67(b), 83) *Describe how it was validated that all alternatives are plausible and no plausible alternative is excluded from the consideration*	*Not applicable, as the baseline is given by the methodology.*	/ACM002/	N/A	N/A
B.3.3. What has been identified as the baseline	*Description: 'Electricity delivered to the grid by the project activity would have otherwise been generated by the*	/PDD/	OK	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
scenario? (EB 55 Annex 1, §§ 80–81, 86) *Describe the chosen BL scenario, taking into consideration the technology that would be employed and / or the activities that would take place in the absence of the proposed CDM project activity.*	*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".'* *Justification of evidences:* The methodology ACM002, version 11.0 was checked. *Conclusion:* The definition of ACM002 was applied.	/ACM002/		
B.3.4. Has the baseline scenario been determined according to the methodology? (EB 55 Annex 1, §§ 82, 87 (e)) *Describe how it is validated that the identification of the most plausible baseline scenario is carried out in accordance with the applied methodology and applied methodological tools. Please refer to table A-2.*	For details of the assessment regarding the evaluation of the baseline scenario pl. refer to table A-2. ☒ The determination has been carried out as per the procedure contained in the applied methodology. ☐ The following CARs / CLs have been identified with respect to the selection of the baseline scenario: *Description:* The baseline is the electricity that would have otherwise been generated by the operational plants connected to the national Interconnected System. *Justification of evidences:* The definition of ACM002 was applied. *Conclusion:* The baseline has been determined according to the methodology ACM002, version 11.0.	/PDD/ /ACM002/	OK	OK

Checklist Item (incl. guidance for the validation team)	**Validation Team Comments** (justification and substantiation of information, data and evidences)	**Ref.**	**Draft Concl.**	**Final Concl.**
B.3.5. Has any plausible alternative scenario been excluded? (EB 55 Annex 1, § 83) *Describe how it is validated that no plausible alternative scenario has been excluded.*	*Not applicable, as the baseline is given by the methodology*.	/PDD/ /ACM002/	N/A	N/A
B.3.6. Is the identified baseline scenario reasonable and has the baseline scenario been determined using conservative assumptions where possible, including relevant references and sources? (EB 55 Annex 1, §§ 84–86(a) –(c)) *Describe whether the choice of the identified baseline scenario is reasonable by validating the key assumptions, calculations and rationales used in the PDD. Describe whether these are listed, relevant and conservatively interpreted in the PDD.*	*Not applicable, as the baseline is given by the methodology*.	/PDD/ /ACM002/	N/A	N/A
B.3.7. Does the baseline scenario sufficiently take into account relevant national and/or sectoral policies, macro-economic trends and political aspirations? (EB 55 Annex 1, §§ 85, 87(d))	*Not applicable, as the baseline is given by the methodology.*	/PDD/ /ACM002/	N/A	N/A

Checklist Item (incl. guidance for the validation team)	**Validation Team Comments** (justification and substantiation of information, data and evidences)	**Ref.**	**Draft Concl.**	**Final Concl.**
Describe whether the PP has shown that all relevant policies and circumstances have been identified and correctly considered in the PDD in accordance with the guidance by the Board. Pl. consider the guidance EB 22 annex 3 (regarding E+ and E- policies).				
B.3.8. Is the baseline scenario determination compatible with the available data and are all literature and sources clearly referenced? (EB 55 Annex 1, § 87(a)–(c)) *Describe whether the documents and sources referred to in the PDD are correctly quoted and clearly referenced.*	*Not applicable, as the baseline is given by the methodology.*	/PDD/ /ACM002/	N/A	N/A
B.3.9. Does the PDD contain 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. (EB 55 Annex 1, § 86)	*Not applicable, as the baseline is given by the methodology.*	/PDD/ /ACM002/	N/A	N/A

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
B.4. Additionality Determination *The assessment of additionality will be validated with focus on whether the project itself is not a likely baseline scenario.*				
B.4.1. Methodology				
B.4.1.1. Does the PDD describe how the project is additional and does the additionality justification follow the requirements of the applied methodology and/or methodological tools? (EB 55 Annex 1, §§ 67(d), 94–95) *Describe how it is validated that additionality justification is carried out in accordance with the applied methodology and/or applied methodological tools. Further focus your assessment on the reliability and credibility of data, rationales and assumptions, justifications and documentations provided by the PP.*	*Description:* Yes, the sequence utilized by the PP to demonstrate the additionality of the project has followed the step-wise approach described in version 5.2 of the "Tool for the demonstration and assessment of additionality". The additionality is demonstrated by benchmark analysis calculating Project IRR. Nevertheless, CLs B3 and B6 have been raised. *Justification of evidences:* The PDD was reviewed in detail and supporting evidences cross-checked. However, several CARs and CLs indicated below in this section have to be closed out to allow a final and conclusive assessment by the Validation Team. *Conclusion:* Refer to findings raised below in this section. **(CL B3)** In section B.5, the text in the beginning of the section before the '**Analysis of additionality of the project'** is not related to demonstration of additionality, thus please	/PDD/ /ACM002/ /MT/	~~CL B3~~ ~~CL B6~~	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	move it to section B.4 or remove it altogether. **(CL B6)** In section B.5, please clearly document the outcome of each step. In addition please rephrase 2nd paragraph of page 20 as it is not precise.			
B.4.2. Consideration of CDM before project start				
B.4.2.1. Is the project starting date reported in accordance with the CDM glossary of terms? (EB 55, Annex 1, § 104(a)) *Assess why the chosen starting date can be considered as the earliest date at which either the implementation or construction or real action of a project has begun or will begin.* *Check that no other activities related to the project that happened before the identified start date can be considered as start date. In this context please also take into consideration infrastructural expenses if they are relevant (in terms of costs and importance for the project implementation) in the specific context of the project activity.*	*Description:* No, hence CAR C1 and CL B2 have been raised. *Justification of evidences:* The starting date stated at the PDD and evidences were checked against the definition of the Glossary of Terms and were considered not OK. So, CAR C1 and CL B2 were raised. *Conclusion:* **(CAR C1)** The starting date reported in section C.1.1 is 31/07/2010, which was the expected date of signature of the contract with the turbines supplier. However, it was detected by the validation team that the first major financial commitment of project owner was the deposit of the Bid Price Guarantee, corresponding to 5% of the total investment of the project, required by the government as pre-requisite for granting the official authorization for project implementation according to the rules set out in the energy	/PDD/ /PSD/ /GT/ /IM01/	~~CL B2~~ ~~CAR C1~~	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	Auction Edict, at which the project bid for energy price was a winner. Hence, please revise the starting date in section C.1.1 as it is not in line with the definition of the CDM Glossary of Terms/GT/. **(CL B2)** In section B.5, the starting date reported in the Draft PDD is not correct according to the Glossary of Terms/GT/(see CAR C1). In addition and with reference to the /GCP/, the timeline of events leading to the project implementation and CDM consideration clearly showing the dates of each event and the corresponding supporting evidence, preferably in table format, is missing. Please indicate the appropriate management decision, e.g. the Bid Price in the Energy Auction, and the investment decision, i.e. the deposit of the Bid Price Guarantee, i.e. 5% of total project investment according to Auction Edict.			
B.4.2.2. In case the project start date is on or after 2nd August 2008 has the PP informed the DNA and UNFCCC about the intension to seek CDM status? (EB 55 Annex 1, §§ 99–101) *Describe whether such a notification has been provided by the project participants within six months of the project activity start date; if NOT it shall be determined that the*	*Description:* The project starting date is after 02/08/2008. Therefore, it was sent a formal notification of the intention to proceed with the project implementation both for the local DNA and UNFCCC on 03-02-2010, which is even before the investment decision on 26-03-2010. *Justification of evidences:* During the site visit it was provided the proof of receipt of the letter sent to the local DNA and reply letter from DNA and also the UNFCCC website was consulted confirming the formal communication to this	/PDD/ /IM01/ /PSD/ /unfccc/	OK	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
CDM was not seriously considered.	organization. *Conclusion:* The intention to seek CDM status was correctly communicated to the UNFCCC and the local DNA.			
B.4.2.3. In case the project start date is before commencing of validation and 2nd August 2008, was the incentive from the CDM seriously considered and are details given in the PDD? (EB 55 Annex 1, §§ 100, 102) *Describe whether the evidence to support such consideration is adequately and transparently described in the PDD.*	*Not applicable as the project starting date is in 2010.*		N/A	N/A
B.4.2.4. How and when was the decision to proceed with the project taken? *Describe the steps taken to validate the starting date.*	*Description: :* The decision to proceed with the project was taken on 14/12/2009 exactly the date when the bid price was offered establishing the acceptance of all conditions and price to operate the wind farm and generate energy. The decision was then confirmed with the deposit of Bid Price Guarantee, i.e., investment decision, on 26-03-2010. *Justification of evidences:* During the site visit, the validation team has evidenced that the bid price is indeed the exact moment when the PP has truly decided to proceed with the project and that decision was later confirmed when the PP made the deposit of the guarantee, which corresponds to 5%	/PDD/ /PSD/ /IM01/	OK	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	of estimated total investment. *Conclusion:* The management decision was on 2009-12-14, followed by the first major financial commitment was on 2010-03-26.			
B.4.2.5. Is the project start date consistent with the available evidences? (EB 55 Annex 1, § 102) *Describe the evidence assessed regarding the prior consideration of the CDM (if necessary). Describe whether the evidence to support such consideration is adequately and transparently described in the PDD.*	*Please refer to checklist question B.4.2.1 and B.4.2.4 above.*	/PDD/ /PSD/ /GT/	~~CL B2~~ ~~CAR C1~~	OK
B.4.2.6. Was the decision to proceed with the project taken by a person which has the authority to do so? (EB 55 Annex 1, § 102(a)) *Describe the steps taken to validate this issue.*	*Description:* Yes, the bid price was offered for a qualified and authorized person. *Justification of evidences:* All documents from Ministry of Mines and Energy and ANEEL with the ratification of the auction and the permit for operation have been submitted and verified by the validation team. *Conclusion:* The decision has been taken by a person with the authority to do so.	/PDD/ /PSD/ /IM01/	OK	OK
B.4.2.7. How was the CDM involved in the decision making process?	*Description:* As described in Step 4 in section B.5, no wind farm in Brazil of similar scale to the project activity has been	/PDD/ /PSD/	~~CL B2~~ ~~CL~~	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
(EB 55 Annex 1, § 102) *Describe why CDM was a decisive factor in the decision making process.*	developed without the incentives of the PROINFA program. As PROINFA has not been available for the project activity, and the project is not financially attractive as described in Step 2 of section B.5, the CDM benefits are necessary to improve the IRR and hence the financial attractiveness of the project. *Justification of evidences:* Representatives of the PP state that CDM benefits have been essential for the calculation of the winning bid price made by the PP in the auction, at which the project was running against projects with other sources which were not wind energy. However, CL B2 and CL B11 were raised. *Conclusion:* **(CL B2)** In section B.5, the starting date reported in the Draft PDD is not correct according to the Glossary of Terms/GT/(see CAR C1). In addition and with reference to the /GCP/, the timeline of events leading to the project implementation and CDM consideration clearly showing the dates of each event and the corresponding supporting evidence, preferably in table format, is missing. Please indicate the appropriate management decision, e.g. the Bid Price in the Energy Auction, and the investment decision, i.e. the deposit of the Bid Price Guarantee, i.e. 5% of total project investment according to Auction Edict. **(CL B11)** In section B.5, please:	/IM01/	~~B11~~	

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	a. Fill up sub-step 1b as per the title, being clear about the consistency with mandatory laws and regulations; b. Discuss the serious consideration of CDM in the decision making.			
B.4.2.8. Do the evidences provided doubtlessly prove that continuous and real actions were taken in order to secure the CDM status? (EB 55 Annex 1, § 102; EB 49 Annex 22, § 7)	*Description*: Indeed. The starting date of the project activity is in March 2010, the DNA and UNFCCC were notified of the intention to seek CDM status on 03/02/2010; the validation contract with TUV was done on 05/03/2010 and signed on 08/07/2010. *Justification of evidences:* The starting date of the project activity is after 02 August 2008 and the notifications were sent within the 6 months of the project starting date required by EB49, Annex 22. All related documents have been checked. *Conclusion*: The project is in accordance with the requirements of EB49, Annex 22.	/PDD/ /PSD/ /IM01/ /unfccc/	OK	OK
B.4.2.9. Is the gap of documented evidences to secure the CDM status less than 3 years and are the evidences relevant for substantiating the action taken, credible, reliable and complete? (EB 49 Annex 22, §8)	*Description:* Yes, see comment just above. *Justification of evidences:* See comment above. All evidences are credible. *Conclusion:* The gaps between the project starting date and important CDM milestones are just of a few months and the evidences are credible.	/PDD/ /PSD/ /IM01/	OK	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
B.4.2.10. Did implementation of the project ceased after its commencement and did implementation recommence after consideration of the CDM? (EB 51 Annex 58, §7) *Describe the reasons for ceasing the project and explain why the incentive from CDM was necessary to recommence the implementation.*	*Not applicable to project activity.*		N/A	N/A
B.4.2.11. Can the CDM involvement in the decision assessed as serious? *Describe whether or not the project would have been undertaken without the incentive of the CDM.* (EB 55 Annex 1, § 104(b)–(c))	*Description:* If there was no possibility of CDM benefits, it is reasonable to assume that the price would not be the one which was the bid price (winning price), and probably the auction result would be different, i.e. the project would not be winner, which means no long term PPA for a fixed price would be available which in turn would make project finance rather unlikely, as without a reasonably reliable cash flow, it would be very difficult to obtain finance for the project. In addition, without CDM incomes it has been demonstrated that the project is not financially attractive as its IRR is below the benchmark. *Justification of evidences:* The financial spreadsheet and corresponding supporting evidences were reviewed in detail and the IRR of the project without CDM is low for the project to be considered attractive. No project of the similar scale has been developed in Brazil without the incentive of the PROINFA Program and/or CDM. It can be reasonably	/PDD/ /PSD/ /IM01/	OK	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	assumed that CDM income was essential for the calculation of the lowest energy price offered in the energy auction, which was fundamental to be a winner and then be entitled to sign a long term PPA (20 years) with the government, which reduces significantly project risks and allows bank finance of largest part of total investment. *Conclusion:* The CDM involvement in the decision is considered as serious and important.			
B.4.3. Identification of alternatives Step 1 (in case of SSC projects pl. Skip steps 1 and 2)				
B.4.3.1. Does the list of alternatives contain the status-quo situation, the project not undertaken as a CDM project as well as all other viable means of supplying the outputs or sevices that are to be supplied by the proposed CDM project activity? (EB 55 Annex 1, §§ 105–107) *Describe the steps taken to validate this issue on the basis of your local and sectoral knowledge.*	*Description:* The list of alternatives contains the status-quo situation, the project activity not undertaken as a CDM project, the same power generation by power plants using fossil fuels and the same power generation by power plants using other renewable sources (like a SHPP). *Justification of evidences:* The PDD presents all alternatives. *Conclusion:* The list of alternatives contains the status-quo and the project activity not undertaken as a CDM project, in addition with the same power generation by the use of other sources. Without CDM benefits, the PPs states that the project could not be developed.	/PDD/ /ACM002/ /MT/	OK	OK
B.4.3.2. Have all realistic alternatives been	*Description:* As the baseline is directly given by the	/PDD/	OK	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
identified to the project? (EB 55 Annex 1, §§ 105–107) *Describe whether the list of alternatives is credible and complete. Describe how it is validated that the alternatives are realistic.*	methodology ACM 0002 (version 11.0), the selection of alternatives is not required, otherwise all possible market alternatives for the generation of electricity would have to be listed such as hydraulic, biomass, fossil fuel based thermo electric power plants, etc. The PPs considered all alternatives but as the generation of power by the use of fossil fuel is not their core business and due to the size of the project activity, hydropower plants could only be a viable alternative if there was either a group of mini hydropower plants or a large one, they were not considered as realistic for the project activity. *Justification of evidences:* The PDD presents all alternatives and justifications. In addition the applied methodology was checked *Conclusion:* The realistic alternatives are the status-quo and the project activity not undertaken as a CDM project.	/ACM002/		
B.4.3.3. Do all identified alternatives comply with enforced legislations? (EB 55 Annex 1, §§ 106(c)) *Describe the steps taken to validate this issue. Refer to the legislations.*	*Description:* All alternatives described in the PDD are in line with mandatory laws and regulations. *Justification of evidences:* The regulations of ANEEL, IMA and CONAMA have been checked. *Conclusion:* All alternatives described in the PDD comply with mandatory laws and regulations.	/PDD/ /aneel/ /ima/ /conama/ /EL/	OK	OK
B.4.4. Investment analysis Step 2				

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
In case the investment analysis as per step 2 is chosen to justify the additionality Annex 2 "Assessment of Financial Parameters" has to be used to provide additonal details of the the calculation parameters..				
B.4.4.1. Does the PDD provide evidence that the project would not be the most economically or financially attractive alternative or economically / financially feasable without the revenues from the sale of CERs? (EB 55 Annex 1, §108)	*Description:* At the PDD, a benchmark analysis is the basis of additionality determination and Project IRR is the financial indicator chosen. According to the Draft PDD, the IRR is below the benchmark, and hence not the most financially attractive alternative. However, one finding has been raised and needs to be closed before forming an opinion. *Justification of evidences:* The finding raised needs to be closed to form an opinion. *Conclusion:* Refer to all findings raised in this section.	/PDD/ /FD/	~~Not yet OK~~	OK
B.4.4.2. Is an appropriate analysis method chosen for the project (simple cost analysis, investment comparison analysis or benchmark analysis)? (EB 55 Annex 1, § 108; EB 39 Annex 10) *Describe why the selected analysis method is appropriate under consideration of potential revenues and costs, potential project alternatives and potential available benchmark values.*	*Description:* The chosen approach for demonstrating the additionality of the project is the Benchmark Analysis (Option III) which is considered appropriate. *Justification of evidences:* The project activity generates economic benefits with the sale of energy, therefore the simple cost analysis (Option I) cannot be used. Benchmark analysis (Option III) is appropriate and the best method to demonstrate additionally for a project implemented with the sole purpose of energy generation for commercialization. The PDD was checked against the applied tool.	/PDD/ /MT/	OK	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	Conclusion: Benchmark Analysis has been appropriately chosen as method of analysis.			
B.4.4.3. Is a clear, viewable and unprotected Excel spreadsheet available for the investment calculation? (EB 55 Annex 1, § 110; EB 51, Annex 58, § 8) *Describe the steps taken to validate this issue.*	*Description:* A viewable and unprotected excel spreadsheet document was made available to validation team and was reviewed about clarity and access of calculation and data. However CL B4 was raised. *Justification of evidences:* See CL B4 below. *Conclusion:* **(CL B4)** The financial parameters in the PDD do not match with those in the excel sheet provided to the validation team. In addition, the appropriateness of the SELIC rate as the chosen benchmark shall be revised.	/PDD/ /FD/	~~CL B4~~	OK
B.4.4.4. Does the period chosen for the investment analysis reflect the technical lifetime of the project activity or in case a shorter period is chosen, is the fair value of the project activity's assets at the end of the investment analysis period (as a cash inflow) included? (EB 55 Annex 1, § 109; EB 51 Annex 58 § 3 – 4)	*Description:* The period of investment analysis considers 20 years, which is the length of the contract for generation of energy and the expected lifetime of the turbines indicated by the equipment supplier (Vestas) which is the expected operational lifetime of the project activity. *Justification of evidences:* According to the Brazilian accounting regulations the assets will be fully depreciated before the end of the analysis period. Moreover, the lifetime of wind turbines of 20 years is indicated by the supplier Vestas. The	/PDD/ /FD/ /TD/ /fazenda/	OK	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
Describe how the technical lifetime / period chosen for calculating financial parameter(s) is reviewed and which documents were utilized in the course of review. Describe furthermore the approach used to check the inclusion of a potential fair value.	regulations of the Federal Revenue Bureau and technical data provided by Vestas have been checked. *Conclusion:* The period of assessment is 20 years and it reflects the technical lifetime of wind turbines being in line with the long term PPA to be signed for the project.			
B.4.4.5. Is the (remaining) technical lifetime of existing or project equipment defined in accordance with the guidance of the *Tool to determine the remaining lifetime of equipment*? (EB 50 Annex 15)	*Not applicable to the project activity.*		N/A	N/A
B.4.4.6. Is the fair value calculated in accordance with local accounting regulations (where available) or international best practice? (EB 55 Annex 1, § 109; EB 51 Annex 58, § 4) *State the accounting regulations applied for calculating the fair value and describe why these are applicable under the project specific circumstances. Describe potential mismatches between regulations and the approach applied for calculating the fair value.*	*Description:* The period of analysis is conservative (20 years), and in line with EB51 Annex 58. All assets will be fully depreciated before the end of the 20 years period, so the book value will be zero according to local accounting regulations and thus no fair value was considered. *Justification of evidences:* According to Brazilian accounting regulations, the assets will be fully depreciated before the end of the analysis period, therefore no fair value is to be considered. *Conclusion:* Fair value is in line with accounting regulations. However, please see CL B10 just below.	/PDD/ /FD/	~~CL B10~~	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
B.4.4.7. Is the book value as well as the expectation of the potential profit or loss included in the fair value calculation? (EB 55 Annex 1, § 109; EB 51 Annex 58 §4)	*Description*: The period of analysis is conservative (20 years), and in line with EB51 Annex 58. All assets will be fully depreciated before the end of the 20 year period, so book value will be zero according to local accounting regulations and thus no fair value was considered. However, CL B10 was raised below. *Justification of evidences:* The regulations of the Federal Revenue Bureau were checked. Nevertheless, CL B10 was raised. *Conclusion:* **(CL B10)** As assets will be fully depreciated at the end of the analysis period, the book value will be zero, no fair value was considered in the financial analysis. Nevertheless, please justify adequately why it can be reasonably assumed that there is no expectation of potential profit on the realization of the assets at the end of the period, or conservatively include a fair value in the cash flow and calculation of IRR.	/PDD/ /FD/ /fazenda/	~~CL B10~~	OK
B.4.4.8. Are depreciation and other non-cash related items added back to net profits for the purpose to calculate the financial indicator? (EB 55 Annex 1, § 109; EB 51 Annex 58 §5)	*Description:* Not applicable as the project uses vain (assumed) profit for calculation of income tax, additional income tax and social contribution. *Justification of evidences:* In line with tax legislation, the above mentioned taxes are calculated based on an assumed profit of total revenues; therefore depreciation does not impact the cash flow, as the taxes are calculated based on gross sales.	/PDD/ /FD/ /fazenda/	N/A	N/A

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	The regulations of the Federal Revenue Bureau were checked. *Conclusion:* Not applicable as the depreciation does not have any impact on the cash flow and on the IRR calculation. In addition, the benchmark is the pre-tax IRR.			
B.4.4.9. Is taxation excluded in the investment analysis or is the benchmark intended for post tax comparisons? (EB 55 Annex 1, § 109; EB 51 Annex 58 §5)	*Description:* The taxation is excluded in the investment analysis. *Justification of evidences:* The IRR calculation spreadsheet has been checked. For further details about the benchmark, see assessment in Table A-3, Annex 3. *Conclusion:* Taxation is excluded and the benchmark is appropriate for pre-tax analysis.	/PDD/ /TD/ /IRR/	OK	OK
B.4.4.10. Were the input values used in the investment analysis valid and applicable at the time of the investment decision? (EB 55 Annex 1, § 109, 112; EB 51 Annex 58 §6) *In case the basis for input values is a Feasibility Study Report (FSR) describe how it has been ensured that the period in time between the finalization of the FSR and the investment decision is sufficiently short so that it is unlikely that input values would have materially changed. Further confirm the consistency of values in FSR and PDD.*	*Description:* Yes, all input data were valid at the time of management decision, marked by the date of the energy auction when the Bid Price was given by project owners. *Justification of evidences:* All input data is clearly referenced in excel sheet. The IRR calculation spreadsheet and all referenced documents of the Financial Data have been checked. *Conclusion:* All input data in excel sheet were valid at the time of management decision and consistent. See Table A-3 Annex 3. However, CL B4 was raised as the information in	/PDD/ /FD/ /IRR/	~~CL B4~~	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	the PDD was not in line with spreadsheet and supporting evidences submitted to validation team. **(CL B4)** The financial parameters in the PDD do not match with those in the excel sheet provided to the validation team. In addition, the appropriateness of the SELIC rate as the chosen benchmark shall be revised.			
B.4.4.11. Is the plant load factor (PLF) chosen in a conservative manner, taking into account that the PLF may be different in the framework of demonstrating additionality and calculating the ex-ante ER? (EB 48, Annex 11)	*Description:* The PLF has been determined by a certification of third party/PLF/. *Justification of evidences:* As the PLF has been determined by a certification of a third party, in accordance with EB 48, Annex 11, and this value has been used for the management decision for defining the price. The Certification of Anemometric Measurements and Certification of the Annual Production of Energy was verified. *Conclusion:* PLF has been chosen in line with EB 48, Annex 11.	/PDD/ /IRR/ /PLF/ /unfccc/	OK	OK
B.4.4.12. In case of project IRR: Are the costs of financing expenditures (loan repayments and interests) excluded from the calculation of project IRR? (EB 55 Annex 1, § 109; EB 51 Annex 58 §9)	*Description:* Yes, the costs of financing expenditures are excluded from the calculation of project IRR. *Justification of evidences:* The IRR calculations have been checked. *Conclusion:* The IRR calculation has been properly	/PDD/ /IRR/	OK	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	elaborated.			
B.4.4.13. In cases where a post-tax benchmark is applied please ensure that actual interest payable is taken into account in the calculation of income tax. (EB 51 Annex 58 §11) *As per the guidance it is recommended to select a pre tax benchmark in order to Describe the steps taken in assessing this requirment.*	*Not applicable as a pre-tax benchmark is applied.*		N/A	N/A
B.4.4.14. In case of equity IRR: Is the part of the investment costs, which is financed by equity considered as net cash outflow and is the part financed by debt excluded in net cash outflow? (EB 55 Annex 1, § 109; EB 51 Annex 58 §10)	*Not applicable as project IRR was chosen by project participant as financial indicator.*		N/A	N/A
B.4.4.15. Is the type of benchmark chosen appropriate for the type of IRR calculated (e.g. local commercial lending rates or weighted average costs of capital for project IRR; required/expected returns on equity for equity IRR)? (EB 55 Annex 1, § 109; EB 51 Annex 58 §§12 – 15)	*Description:* SELIC rate + the country risk classification are the chosen benchmark and were considered not appropriate, so CL B4 was raised. *Justification of evidences:* As verified at Central Bank of Brazil's website, the SELIC rate is short term rate, so CL B4 was raised.	/PDD/ /FD/ /bcb/	~~CL B4~~	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
In case risk premiums are applied precisely describe its suitability to reflect the risks associated with the project activity, considering the project type and market situation.	*Conclusion:* Refer to CL B4 above in B.4.4.10.			
B.4.4.16. Is the benchmark value suitable for the project activity and is it reasonable to assume that no investment would be made at a rate of a lower return than the benchmark? (EB 55 Annex 1, § 109; EB 51 Annex 58, §§13–15) *Describe whether it is reasonable to assume that a lower rate of return would consequently result in the baseline scenario.*	*Description:* Although the SELIC rate can be considered as a conservative rate and it is the basis for all interest rates in Brazil, the SELIC is a short term rate and so deemed not fully adequate benchmark for a long term investment analysis. So, CL B4 was raised. *Justification of evidences:* As verified at Central Bank of Brazil's website, the SELIC rate is a short term rate and so not adequate for the comparison. See CL B4 above. *Conclusion:* Refer to CL B4 above in B.4.4.10.	/PDD/ /FD/ /bcb/	~~CL B4~~	OK
B.4.4.17. Is it ensured that the project cannot be developed by other developers than the PP? (EB 55 Annex 1, § 109; EB 51 Annex 58 §§ 13–14) *Describe why the benchmark does not include the subjective profitability expectations or risk profile of the project developer. If applicable assess the past financial behavior of the entity during at least the last 3 years in relation to similar projects.*	*Description:* As described in B.4.4.15, the chosen benchmark was SELIC which is the basic rate of the Brazilian economy, from which all other interest rates derive. The source of the SELIC rate is the Central Bank of Brazil and country risk premium is a worldwide known way to measure the investment risk in each country, hence the benchmark does not include the subjective profitability expectations or risk profile of the project developer. Nevertheless, CL B4 was raised. *Justification of evidences:* Central Bank of Brazil's website and the benchmark analysis were checked. In addition, interviews	/PDD/ /bcb/ /IM01/	~~CL B14~~	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	have been performed to assess this issue. So, CL B4 was raised. *Conclusion:* The chosen benchmark does not include the subjective profitability expectations or risk profile of the project developer. Refer to CL B4 above in B.4.4.10.			
B.4.4.18. Was the benchmark consistently used in the past for similar projects with similar risks? (EB 55 Annex 1, § 112(c))	*Description:* The benchmark has been consistently used in the past. However CL B4 has been raised because as a short term rate, the SELIC was deemed not fully adequate benchmark for a long term investment analysis. *Justification of evidences:* As verified at Central Bank of Brazil's website, the SELIC rate is short term rate and so not adequate for the comparison. So, CL B4 was raised. *Conclusion:* Refer to CL B4 above	/PDD/ /bcb/	~~CL B4~~	OK
B.4.4.19. Does the PDD and related spreadsheets contain a sensitivity analyis and does the same contain variation of parameters which may vary throughout the project lifetime, (EB 55 Annex 1, §§ 109 – 110(e); EB 51 Annex 58, §17–18) *Describe relevance of parameters used in the sensitivity analysis as well as their likeliness to vary during the project's lifetime.*	*Description:* Yes, a sensitivity analysis is included in the PDD and financial spreadsheet. Key parameters which may vary throughout the project lifetime were included: Price of Electricity, O&M Costs, Total Investment Cost, Plant Load Factor and TUSD - Transmission Cost. Nevertheless, CL B12 was raised. *Justification of evidences:* PDD and spreadsheet were reviewed in detail. For more details of assessment of each financial	/PDD/ /FD/	~~CL B12~~	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
Parameters which are fixed on the basis of contracts, PPAs etc. may not be subject to variation and not adequate.	parameter, please refer to Table A-3 Annex 3. *Conclusion:* A proper sensitivity analysis has been carried out, but CL B12 was raised to enforce it. **(CL B12)** Sensitivity Analysis: a. Please, include both variations (positive and negative) for all chosen variables; b. Please include a 'Breakeven Analysis' to assess the benchmark crossing and why the benchmark will most likely not be crossed; c. Include a graph to demonstrate this analysis.			
B.4.4.20. Were only variables that constitute more than 20% of either total project costs or total project revenues subjected to reasonable variation? (EB 55 Annex 1, § 109; EB 51 Annex 58, § 17)	*Description:* Yes, see comment above. All parameters above the 20% threshold were included and subject to a reasonable variation (up to 10%). *Justification of evidences:* PDD and excel spreadsheet were reviewed in detail. Although the parameters may vary during the project´s lifetime, a +-10% variation is deemed appropriate for sensitivity analysis. *Conclusion:* The parameters included and the variation applied are reasonable and in line with EB 51 Annex 58 §17. For more details of assessment of each financial parameter, please refer to Table A-3 Annex 3.	/PDD/ /FD/	OK	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
B.4.4.21. Have parameters, constituting less than 20% of total project costs or revenues, been identified with potential material impact on the financial parameter? (EB 55 Annex 1, § 109; EB 51 Annex 58, § 17) *Describe whether those parameters are considered in the sensitivity analysis?*	*Description:* Yes, the O&M Costs represent less than 20% but were also included in the sensitivity analysis. No other parameters with material impact were identified. *Justification of evidences:* PDD and excel spreadsheet were reviewed in detail. *Conclusion:* O&M Costs represent less than 20% but were also included in the sensitivity analysis	/PDD/ /FD/	OK	OK
B.4.4.22. Is the range of variation reasonable in the specific context of the project activity, taking into consideration historic trends in the business sector? (EB 55 Annex 1, § 109; EB 51 Annex 58, § 18) *Describe whether the range of variation is appropriate with focus on historic developments, e.g. price of oil / labour etc., energy potential in the region in question.*	*Description:* Yes, the range of variation applied was + 10% to -10% and it is deemed appropriate by the validation team, considering that the input values applied are deemed adequate and conservative, as described in the assessment of each financial parameter in Table A-3 Annex 3. *Justification of evidences:* PDD and spreadsheet were reviewed in detail. Each financial parameter was reviewed and validated carefully considering submitted evidences, public available sources of information and the local expertise of the validation team. The variation is in line with latest EB guidance. Registered CDM projects were checked and the variation is in line with other similar registered CDM projects. *Conclusion:* The variation applied is considered appropriate in the context of the project activity, taking in consideration historic trends in the business sector.	/PDD/ /FD/	OK	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
B.4.5. **Barrier analysis Step 3 or SSC additionality assessment**				
B.4.5.1. Are there any barriers given which have a clear and direct impact on the financial returns of the project? (EB 55 Annex 1, §§ 115, 134, 137) *In case of LSC projects those issues cannot be considered as barriers and shall be assessed in the investment analysis. In case of SSC projects the same fundamentals as for LSC projects shall apply, i.e. the assessment of the investment barrier according to EB 51 Annex 58.*	*Not chosen.*	-	N/A	N/A
B.4.5.2. Are the barriers described risk related (e.g technology failure, other performance related risks)? (EB 55 Annex 1, §§ 116, 134, 137) *Are there other barriers or barriers due to prevailing practice existent which would have led to higher emissions?*	*Not chosen.*	-	N/A	N/A
B.4.5.3. Has the unavailabilty of means of finance for the project been described and adequately substantiated? Do evidences doubtlessly prove that the financing of the project was assured only due to the benefit	*Not chosen.*	-	N/A	N/A

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
of the CDM? (EB 55 Annex 1, §§ 116, 137, EB 50 Annex 13, § 9)				
B.4.5.4. How is it justified and evidenced that the barriers given in the PDD are real? (EB 55 Annex 3, § 116 (a))	*Not chosen*.	-	N/A	N/A
B.4.5.5. How is it justified that one or a set of real barriers prevent(s) the implementation of the project activity and do not prevent the implementation of at least one of the alternatives? (EB 55 Annex 1, § 116 (b))	*Not chosen*.	-	N/A	N/A
B.4.5.6. Does the review of relevant background information on the nature of the company(ies) and entitiy(ies) involved in the financing and implementation of the project sufficiently justify that the barriers related to the lack of access to capital, technologies and skilled labour are real? (EB 50 Annex 13, §4)	*Not chosen*.	-	N/A	N/A
B.4.5.7. Has it been demonstrated in an objective way how the CDM alleviates each of the	*Not chosen*.		N/A	N/A

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
identified barriers to a level that the project is not prevented anymore from occurring by any of the barriers? (EB 50 Annex 13, §5)				
B.4.5.8. Would provision of additional financial means lead to the mitigation of the barrier(s) demonstrated? (EB 50 Annex 13, §7) *Describe why provision of additional financial means would not lead to mitigation of the barrier(s) demonstrated and hence analyzing the project's additionality within the framework of an investment analysis is inappropriate. .*	*Not chosen*.		N/A	N/A
B.4.6. Common practice analysis Step 4 (in case of SSC projects skip this step)				
B.4.6.1. Is the defined region for the common practice analysis appropriate for the technology/industry type? (EB 55 Annex 1, § 120 (a)) *Describe why the project activity is not common practice in a transparent and unambiguous manner. If a region other than the entire host country is chosen, describe why this region is more*	*Description:* Yes, the defined region is Brazil and it is appropriate as it is possible to check the situation of wind farms in the whole country. *Justification of evidences:* ANEEL's regulations have been checked *Conclusion:* The choice of the whole country is justified as the	/PDD/ /aneel/	OK	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
appropriate.	ANEEL's regulations are the same for the whole country.			
B.4.6.2. To what extent similar projects have been undertaken in the relevant region? (EB 55 Annex 1, § 120 (b))	*Description:* It is not possible to identify how many projects are similar to the project activity because Tables 11 and 12 are not consistent. So CL B5 was raised. Moreover, CL B6 was raised to clarify which projects are similar to the project activity. *Justification of evidences:* ANEEL's and Eletrobrás's websites were checked *Conclusion:* **(CL B5)** In section B.5, Table 12 giving references and checking names and power of the wind farms does not match with the information presented at Table 11. **(CL B6)** In section B.5, please clearly document the outcome of each step. In addition please rephrase 2nd paragraph of page 20, as it is not precise.	/PDD/ /aneel/ /unfccc/ /eletrobras/ /ACM002/	~~CL B5~~ ~~CL B6~~	OK
B.4.6.3. In case similar projects are identified, are there any key differences between the proposed project and existing or ongoing projects and what kind of differences are observed?	*See comments above.*	/PDD/ /aneel/ /unfccc/	~~CL B5~~ ~~CL B6~~	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
(EB 55 Annex 1, § 120 (c))		/eletrobras/ /ACM002/		
B.5. Ex-Ante Calculation of GHG Emission Reductions *It is assessed whether the ex-ante calculations of project emissions, baseline emissions, leakage emissions are stated according to the methodology and whether the argumentation for the choice of default factors and values – where applicable – is justified. Furthermore calculation of emission reductions shall be assessed.*				
B.5.1. Are the equations applied correctly according to the applied approved methodology? (EB 55 Annex 3 §§ 67(c), 89-90, 92) *Describe clearly the steps taken to assess whether the methodology has been applied correctly to calculate project emissions, baseline emissions, leakage and emission reductions. Further take into consideration that all estimates of the baseline emissions can be replicated using the data and parameter values provided in the PDD.*	☐ The equations applied for calculation are correctly applied according to the approved methodology. ☒ The following mistakes have been identified in this context: *Description:* CL B7 has been raised. *Justification of evidences:* The PDD and applied methodology were cross-checked. *Conclusion:* **(CL B7)** In section B.6.1, please correct the equation and	/PDD/ /ACM002/	~~CL B7~~	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	description of parameters of BE as the correct is EG_{PJ} and not (EG_y-$EG_{baseline}$). In addition, please revise Step 3 in page 23 as the DNA of Brazil uses Dispatch Data as method for the determination of the Operating Margin.			
B.5.2. In case the methodology allows for different methodological choices, are the equations applied properly justified and have they been used reflecting the other methodological choices (i.e. baseline identification)? (EB 55 Annex 1 §§ 90–91) *Assess the correct selection and application of methodological choices. Describe whether proper justification has been provided (based on the choice of the baseline scenario, context of the project activity and other evidence provided) and whether the correct equations have been used reflecting the relevant methodological choices.*	*Not applicable as the methodology does not allow such choices.*	-	N/A	N/A
B.5.3. Have conservative assumptions been used when calculating the project emissions? (EB 55 Annex 1 §§ 90–91) *Describe clearly the steps taken to assess whether all the assumptions and data used by the PP are listed in the PDD including references and sources and are conservatively*	*Description:* The baseline emissions are calculated based on the net energy generated multiplied by the combined margin emission factor (EF) calculated according to the Tool to Calculate the emission factor for an electric system (version 2.2.0) and data published by the Brazilian DNA. The data used is the EF value publicly available and calculated by the Ministry of Science and Technology and published by the	/PDD/ /dna/ /PLF/ /IM01/ /MT/	~~CL B13~~	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
interpreted in the PDD.	Brazilian DNA and the energy generation is calculated used the PLF certified by a specialized third party. Nevertheless, CL B13 was raised. *Justification of evidences:* The Brazilian DNA's website, the PLF study were checked. In addition, performed interviews have been used to check this issued. Nevertheless, CL B13 was raised *Conclusion:* **(CL B13)** Section B.6.3: for the ex-ante calculation of emission reductions, please clarify why a 3 years weighted average has been used for determining the operating margin emission factor as per the Tool to calculate the emission factor for an electricity system, a 3 years weighted average is only applicable when applying simple OM, simple adjusted OM or average OM, but not dispatch data analysis.			
B.5.4. Does the implementation of the project activity lead to GHG emissions within the project boundary which are expected to contribute more than 1% of the overall expected average annual emission reductions, which are not addressed by the methodology? (EB 55 Annex 1, § 77)	*Description:* No, as no other emission sources than those described in the methodology have been identified. *Justification of evidences:* The applied methodology, site visit and performed interviews have been used to check this issue. *Conclusion:* No other emission sources than those described in the methodology have been identified.	/PDD/ /ACM002/ /IM01/	OK	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
B.5.4.1. Has a plant load factor (PLF) been defined ex-ante and considered for determination of baseline emissions? (EB 48 Annex 11, §§ 1, 3, 4) *Describe why the PLF is conservative in the framework of calculating emissions reductions and whether the PLF is the same in the framework of demonstrating additionality by applying the investment analysis. Note, in order to be conservative in both cases the PLF may be different.*	*Description:* Although the energy generated will be monitored ex-post, an ex-ante value has been defined. *Justification of evidences:* A Certification of Anemometric Measurements and Certification of the Annual Production of Energy study has been done by a third party defining the PLF. *Conclusion:* The PLF has been estimated ex-ante.	/PDD/ /PLF/	OK	OK
B.5.5. Are all data sources and assumptions appropriate and parameters which remain fixed throughout the crediting period correct, applicable to the project and will lead to a conservative estimation of emission reductions? (EB 55 Annex 1, § 91) *Describe clearly the steps taken to assess whether the values used for the fixed parameters are considered reasonable, correct and applicable in the context of the project activity. Check esp. chapter 6.2 of the PDD.*	*Description:* No, so CAR B1 was raised. *Justification of evidences:* The PDD (especially sections B.6.2 and B.7.1) and the applied methodology were checked. *Conclusion:* **(CAR B1)** As the emission factor published for the DNA of Brazil is calculated based on Dispatch Data, the ex-ante option is not possible, therefore, please remove parameter EF from section B.6.2 and include $EF_{OM,y}$, $EF_{BM,y}$ and $EF_{grid,BM,y}$ in section B.7.1. In addition, please revise text about the ex-ante approach in section B.7.2.	/PDD/ /ACM002/ /dna/	~~CAR B1~~	OK
B.5.6. Are all ex-ante calculation values for monitoring parameters (as defined as per	☐ All “Values of data to be applied for the purpose of calculating expected emissions reductions” are	/PDD/	~~CAR B1~~	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
chapter B.7.1) reasonable? (EB 55 Annex 1, § 91) *Describe clearly the steps taken to assess whether the values used for the monitoring parameters are considered reasonable, applicable and conservative in the context of the project activity*	considered to be reasonable, applicable and conservative. ☒ The following mistakes have been identified in this context: CAR B1 has been raised (see B.5.5 above).	/XLS/ /dna/		
B.5.7. Are the emission reductions real, measurable and give long-term benefits related to the mitigation of climate change. *Describe the steps taken to validate this issue.*	*Description:* CAR B1 has been raised in this section and has to be closed out before forming an opinion. *Justification of evidences:* See comment above. *Conclusion:* Please refer to the CAR B1 raised above.	/PDD/ /XLS/	~~CAR B1~~	OK
B.6. Monitoring of Emission Reductions *It is assessed whether the monitoring plan is appropriate for the project activity and in line with the applied methodology.*				
B.6.1. Are all monitoring parameters required by the applied methodology contained in the monitoring plan? (EB 55 Annex 1, §§ 67(e), 121, 123(a), 124) *Assess whether all applicable parameters listed in the*	*Description:* Please refer to CAR B1 and CL B8 and check list question B.5.5. above. *Justification of evidences:* See CAR B1 and CL B8 *Conclusion:* See CAR B1 and CL B8	/PDD/ /ACM002/	~~CAR B1~~ ~~CL B8~~	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
methodology are included in the monitoring plan. *Pl. check further whether the selection of parameters not to be monitored (section B.6.2) is appropriate and in line with the applied methodology.* *In case of different approaches can be chosen acc. to the methodology assess whether the selection of parameters is justified and correct.*	**(CAR B1)** As the emission factor published for the DNA of Brazil is calculated based on Dispatch Data, the ex-ante option is not possible, therefore, please remove parameter EF from section B.6.2 and include $EF_{OM,y}$, $EF_{BM,y}$ and $EF_{grid,BM,y}$ in section B.7.1. In addition, please revise text about the ex-ante approach in section B.7.2. **(CL B8)** In section B.7.1, please: 1. include parameters $EF_{OM,y}$, $EF_{BM,y}$ and $EF_{grid,BM,y}$ (see CAR B1); 2. for parameter EGy, please indicate: a. How many meters; b. Function (main, back-up); c. Type (uni-bidirectional); d. Accuracy class or max error range of meters; e. Calibration frequency (at least every 2 years according to ONS regulations); f. Clarify/confirm that it will be possible to cross-check the net energy delivered to the grid with the			

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	electricity sales receipts, i.e. the receipts will state the net energy. Otherwise, revise the QA/QC procedures including robust cross-check with information from purchaser, i.e. CCEE information.			
B.6.2. Are the means of monitoring of all parameters contained in the monitoring plan feasible and in accordance with the requirements of the applied methodology? (EB 55 Annex 1, § 123(a)–(b), 124) *Assess whether the provided information for all parameters w.r.t.* *a) Label (name of the data / parameter)* *b) data unit* c) *description* d) *source of data* e) *measurement equipment / method / procedure* f) *monitoring frequency* g) *QA/QC procedures*	*CL B8 has been raised. See above.*	/PDD/ /ACM002/	~~CL B8~~	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
are appropriately described and in compliance with the requirements of the methodology..				
B.6.3. Have all means of implementing the monitoring plan, e.g. equations necessary for ex-post emission reduction calculation, been described clearly and in line with the methodology? (EB 55 Annex 1, §§ 123(b), 124) *Check whether all necessary equations have been provided in the PDD. Pl. consider that ex-post and ex-ante calculations might be different.* *Please consider that additional equations might be necessary to calculate auxiliary parameters.*	*Description:* Yes, all equations necessary to ex-post emission reduction calculation are clearly defined. *Justification of evidences:* The PDD was cross-checked with the applied methodology. *Conclusion:* The project fulfills this requirement.	/PDD/ /ACM002/	OK	OK
B.6.4. Is it likely that the monitoring arrangements described in the PDD can properly be implemented in the context of the project activity? (EB 55 Annex 1, § 124 (c)) *Assess whether the described monitoring arrangements are sufficient and realistic to enable a thorough monitoring. Pl. consider also special monitoring conditions, e.g. downtimes of monitoring equipment etc.*	*Description:* The monitoring arrangements described in the PDD can be properly implemented, but CL B8 and CL B9 were raised for further clarifications. *Justification of evidences*: The PDD was cross-checked with the applied methodology. *Conclusion:* **(CL B8)** In section B.7.1, please:	/PDD/ /ACM002/	~~CL B8~~ ~~CL B9~~	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	1. include parameters $EF_{OM,y}$, $EF_{BM,y}$ and $EF_{grid,BM,y}$ (see CAR B1); 2. for parameter EGy, please indicate: a. How many meters; b. Function (main, back-up); c. Type (uni-bidirectional); d. Accuracy class or max error range of meters; e. Calibration frequency (at least every 2 years according to ONS regulations); f. Clarify/confirm that it will be possible to cross-check the net energy delivered to the grid with the electricity sales receipts, i.e. the receipts will state the net energy. Otherwise, revise the QA/QC procedures including robust cross-check with information from purchaser, i.e. CCEE information. **(CL B9)** In section B.7.2, please include a simplified wiring diagram including all turbines, meters, substations, tension transformations and delivery point. As it is anticipated that a new project activity might be			

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	developed next to the project activity, please clarify whether it would use the same transmission line to the delivery point (Substation Salitre III) and whether this would in the future affect the precision of the measurement of the project activity, i.e. difficult to provide precise information of net energy delivered to grid by each project.			
B.6.5. Are the QA/QC procedures appropriate sufficient to ensure the emission reductions achieved from the project activit can be reported ex-post and verified? (EB 55 Annex 1, § 124 (b)) *Please consider the description given in section B.7.2. Describe which QA/QC provisions are considered. Address Quality Management System provisions, calibration and maintenance of equipment. Address further any review procedures.*	*Description:* It is still necessary to include some parameters and robust QA/QC procedures as described in CL B8. *Justification of evidences:* The PDD was cross-checked with the applied methodology. *Conclusion:* See CL B8 above.	/PDD/ /ACM002/	~~CL B8~~	OK
B.6.6. Are procedures identified for data management? (EB 55 Annex 1, 124 (b)) *Check whether appropriate provisions are considered for data management including responsibilities, what records to keep, storage area of records and how to process performance documentation*	*Description:* Yes, procedures, type of data and responsibilities are identified and provisions for data archiving are made. *Justification of evidences:* There are identified procedures for data management system and an operational and management structure for monitoring in the PDD, which have been confirmed by interviews. *Conclusion:* The procedures for data management are	/PDD/ /IM01/	OK	OK

Checklist Item (incl. guidance for the validation team)	**Validation Team Comments** (justification and substantiation of information, data and evidences)	**Ref.**	**Draft Concl.**	**Final Concl.**
Check further the data archiving provisions for the project activity and ensure that provisions are made to archive data for the whole crediting period + 2 years.	properly identified.			
C. Duration of the Project/ Crediting Period *It is assessed whether the temporary boundaries of the project are clearly defined.*				

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
C.1. Is the project's starting date clearly defined and evidenced? (EB 55 Annex 1, § 99) *Check whether the starting date is correct. Apply the definition of the project starting date as per the "Glossary of CDM terms".*	*Description:* The reported starting date in section C.1.1 of the PDD refers to the estimated date of signature with the turbine supplier (which has not yet happened). This is not correct according to the definition in the CDM Glossary of Terms. See CAR C1 below. *Justification of evidences:* The first major financial commitment of the project owner was the deposit of the Bid Price Guarantee corresponding to 5% of total investment according to the rules set out in the Energy Auction Edict which happened on March 26th, 2010 which could be verified by the confirmation of deposit of the bid price guarantee of 5%. So, CAR C1 was raised. *Conclusion:* **(CAR C1)** The starting date reported in section C.1.1 is 31/07/2010, which was the expected date of signature of the contract with the turbines supplier. However, it was detected by the validation team that the first major financial commitment of project owner was the deposit of the Bid Price Guarantee, corresponding to 5% of the total investment of the project, required by the government as pre-requisite for granting the official authorization for project implementation according to the rules set out in the energy Auction Edict, at which the project bid for energy price was a winner.	/PDD/ /PSD/ /GT/	~~CAR C1~~	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	Hence, please revise the starting date in section C.1.1 as it is not in line with the definition of the CDM Glossary of Terms/GT/.			
C.2. Is the project's operational lifetime clearly defined and evidenced? *Check whether the project lifetime is correctly defined. Consider the guidance on the assessment of investment analysis (annex to the additionality tool).* *Check in case of phased implementation this has been reflected throughout the whole PDD incl. the financial assessment, if applicable.*	*Description:* The operational lifetime is clearly defined as 20 years in section C.1.2. *Justification of evidences:* It is clearly defined at the PDD and in line with the estimated lifetime given by turbine supplier Vestas. *Conclusion:* Operational lifetime is clearly defined and evidenced by the technical documents provided by Vestas.	/PDD/ /TD/	OK	OK
C.3. Is the start of the crediting period clearly defined and reasonable? *Check whether the envisaged starting date of the crediting period is realistic, taking into consideration the times needed for validation and registration.*	*Description:* The starting date of the crediting period is clearly defined at section C.2.1.1 as 01/01/2012. *Justification of evidences:* Reported in section C.2.1.1 of PDD and realistic considering time needed for validation and beginning of operation of project activity, which is expected for 01/01/2012. *Conclusion:* Starting date of the crediting period is clearly defined and realistic.	/PDD/ /IM01/	OK	OK
D. Environmental Impacts *Documentation on the analysis of the environmental*				

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
impacts will be assessed, and if deemed significant, an EIA should be provided to the DOE.				
D.1.1. Are there any Host Party requirements for an Environmental Impact Assessment (EIA)? (EB 55 Annex 1, §§ 131–133) *Check the host party regulations, regarding EIA.*	*Description:* For this type of project, the host party requires a RAS - Simplified Environmental Report/EIA/ which was prepared by a third party and submitted to the state environmental authority to start the licensing process. *Justification of evidences:* The RAS was reviewed, as well as the federal and state legislation concerning environmental licensing process applicable for wind projects. *Conclusion:* The project complies with the host party legislation regarding EIA.	/PDD/ /EIA/ /IM01/ /IM02/ /EL/	OK	OK
D.1.2. In case an Environmental Impact Assessment (EIA) is requested by the host party, has it been carried out and if applcable duly approved? (EB 55 Annex 1, §§ 131–133) *Check the EIA and its approval, if applicable.*	*Description:* As explained above, a RAS (which is similar to an EIA) was conducted by a third party and dully approved by host party. *Justification of evidences:* The host party approved the RAS and issued the Preliminary License for the project, which was reviewed by the validation team. *Conclusion:* The EIA (RAS in this case) was properly carried out and approved by the host party.	/PDD/ /EIA/ /IM01/ /IM02/ /EL/	OK	OK

Checklist Item (incl. guidance for the validation team)	**Validation Team Comments** (justification and substantiation of information, data and evidences)	**Ref.**	**Draft Concl.**	**Final Concl.**
D.1.3. Has an analysis of the environmental impacts of the project activity been sufficiently described and in line with the host party environmental legislation? (EB 55 Annex 1, §§ 130–132) *Check the PDD (section D). Check whether the project will create any adverse environmental effects.* *Check the relevant national environmental legislation.*	*Description:* Yes, although there are no significant environmental impacts envisaged for this project, for all impacts identified corresponding mitigation measures were prescribed and are listed in section D.1 of the PDD. *Justification of evidences:* The PDD and the Simplified Environmental Report were checked. However, the final approval from environmental authority will be obtained just after the construction of the wind farm is finished and hence FAR D1 was raised. *Conclusion:* **(FAR D1)** At moment of validation it consists of a greenfield project, therefore, there is no environmental license yet. The operating license issued by the environmental authority shall be requested during the first verification to ensure that the project complies with all environmental requirements of the host country.	/PDD/ /EIA/ /IM01/ /IM02/ /EL/	FAR D1	FAR D1
D.1.4. Are transboundary environmental impacts considered in the analysis? (EB 55 Annex 1, §§ 131–133) *Check the documents and local official sources / expertise regarding transboundary environmental impacts.*	*Not applicable, since no transboundary environmental impacts are envisaged for such type of project.*	/PDD/ /EIA/	N/A	N/A

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
E. Stakeholder Comments *The DOE should ensure that stakeholder comments have been invited with appropriate media and that due account has been taken of any comments received.*				
E.1. Have relevant local stakeholders been invited to consultation prior to the publication of the PDD? (EB 55 Annex 1, § 128) *Check by means of document review and interviews with local stakeholders if and when a local stakeholder consultation process has been carried out.*	*Description:* Yes, as described in section E.1, several relevant stakeholders have been invited for the consultation prior to the publication of the PDD: I. Town Hall of Sobradinho; II. City Hall of Sobradinho; III. SEMA – Secretary of State of Environment (Bahia); IV. CONAMA – National Environment Council; V. Municipal Secretary of Agriculture and Environment (Sobradinho) VI. IMA – Environmental Institute (Bahia); VII. FBOMS - Forum of Brazilian NGOs; VIII. State Attorney for Public Interest (Bahia); IX. State Attorney for Public Interest (Federal).	/PDD/ /SHCP/ /co2/	OK	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	Justification of evidences: Invitations and confirmations of receipt have been presented to the validation team. *Conclusion:* Relevant stakeholders have been invited to consultation prior to the publication of PDD for GSC.			
E.2. Can the local stakeholder consultation process be assessed as adequate? (EB 55 Annex 1, § 129(a) – (c)) *Describe what assessment steps have been undertaken to assess the adequacy of the stakeholder consultation process. Give a final opinion on the adequacy.* *Please consider the following requirements in this context:* *(a) Comments by local stakeholders that can reasonably be considered relevant for the proposed CDM project activity, have been invited;* *(b) The summary of the comments received as provided in the PDD is complete;* *(c) The project participants have taken due account of any comments received and have described this process in the PDD.*	*Description:* All relevant stakeholders have been invited to consultation following host country DNA rules (Resolution 1 and 7) prior to the publication of PDD for GSC and according to PP there was no negative comment received to date. Moreover, it has been observed during the site visit that the construction of the wind farm will not cause any significant adverse environmental impact and it is located in a sparsely populated rural area. No community is directly affected by the project or construction works. So, the local SHC can be assessed as adequate and has observed all Brazilian DNA's rules *Justification of evidences:* Invitations letters and confirmations of receipt were evidenced. The website indicated in the PDD was checked and the Portuguese version of the PDD as well as the ANNEX describing the contribution of the project to the sustainable development were both available, confirming compliance with the host country DNA rules for CDM local SHC.	/PDD/ /SHCP/ /co2/	OK	OK

Checklist Item (incl. guidance for the validation team)	**Validation Team Comments** (justification and substantiation of information, data and evidences)	**Ref.**	**Draft Concl.**	**Final Concl.**
	Conclusion: The local SHC process is assessed as adequate.			

ANNEX 2: ASSESSMENT OF BASELINE IDENTIFICATION

Table A-2: Assessment of Baseline Identification (EB 55 Annex 3, §§83 – 86)

☒	Baseline is not identified (i.e. it is given by the baseline methodology)
☐	Assessment of baseline see below

Baseline Alternatives identified	In line with the Methodology?	Eliminated	Reasons for elimination / non-elimination from list of alternatives	Evidence used	DOE Assessment	
					Appropriateness of elimination	Assessment of validation team (results and means of assessment)
	☐	☐			☐	

ANNEX 3: ASSESSMENT OF FINANCIAL PARAMETERS

Table A-3: Assessment of Financial Parameters (EB 55 Annex 3, §§111, 112, 114/ in case financial parameters stem from FSR §113)

☐	No financial parameters are used for additionality justification
☒	Assessment of all financial parameters see below

Parameter	Value applied	Unit	Source of Information (please indicate document and page)	Reference	DOE ASSESSMENT		
					Correctness of value applied	Appropriateness of information source	Comment
Wind Turbine	7,262,064	R$/turbine	Vestas' Proposal 20610-PR-GES-V90-3-80m – page 9	/FD/ /change/	☒	☒	*Description:* the investment is given by the supplier's proposal (€ 2,820,000 – turbine, transportation, installation, commission and taxes, converted to R$ by the time of the management decision). *Justification of Evidences:* the investment in wind turbines represents more than 60% of total investment and it is demonstrated by the Vestas' proposal. *Conclusion:* the investment in turbines has been properly evidenced by the supplier's proposal and it is at market price.
Total Investment	134,529,582.71	R$	- Investment Calculation presented at Excel sheet - Comparison Analysis	/XLS/ /FD/	☒	☒	*Description:* total investment cost reported is composed of several cost items. All items have been described and supporting evidences have been submitted to the validation team

			of some Brazilian Wind Farms ○ *http://cdm.unfccc.int/Projects/Validation/DB/XYRSB92C541AXM5SWKCGKIA6IEW0KE/view.html;* ○ *http://www.lukor.com/not-neg/empresas/0604/18133622.htm;* ○ *http://www.evwind.com/noticias.php?id_not=6742;* ○ *http://www.bnamericas.com/news/electricpower/BNDES_okays_US*35,5mn_for_Pedra_do_Sal_wind_farm* - Supplier's proposals: . Idom's proposal for geotechnical study; . Arruda's proposal for construction roads and the execution of foundations; . Próxima Engineering's proposal for topography services; . Eólica Technology's proposal for complementary road service; . Doisa's proposal for access implementation; . WEG's commercial proposal; . Sercol's contract mapping and				along with the financial analysis of the project. *Justification of Evidences:* the total investment has been properly evidenced as follows: - Civil infrastructure: R$ 28,931,372 (Idom's proposal for geotechnical study; Arruda's proposal for construction roads and the execution of foundations; Próxima Engineering's proposal for topography services; Eólica Technology's proposal for complementary road service and Doisa's proposal for access implementation); - Electrical infrastructure: R$ 20,202,079 (WEG's commercial proposal; Sercol's contract mapping and environmental licenses studies of the transmission line and Martini Engineering's proposal for executive project of electrical network connection); - Machinery and Equipment: R$ 82,223,809 (Vestas' proposal for the turbines and Guide of Brazilian Taxes as the imported turbines are subject to import taxes); - Management: R$ 1,695,726 (Gestamp Eolica's proposal for construction management and GPS's proposal for supervision of the construction); - Others: R$ 1,476,595 (Marsh's estimation for transport and assembly insurance; Ren Telecom's proposal for optical grid and Arruda's proposal for tower and equipment). Further, a total investment of R$

			environmental licenses studies of the transmission line; . Martini Engineering's proposal for executive project of electrical network connection; . Vestas' Proposal 20610-PR-GES-V90-3-80m –page 9; . Gestamp Eolica's proposal for construction management; . GPS's proposal for supervision of the construction; . Marsh's estimation for transport and assembly insurance; . Ren Telecom's proposal for optical grid; . Arruda's proposal for tower and equipment - Guide of Brazilian Taxes				134,529,582.71 corresponding to R$ 4,484,319 per installed MW. The value was cross-checked with a comparison analysis of some wind farm projects that was carried out by the validation team: a. a CDM registered project - #603 with an investment of R$ 14,076,100 per each of the 50 installed MW; b. Rio do Fogo Wind Farm with an investment of R$ 3,509,128 per each of the 49.3 installed MW; c. Bom Jardim and Agua Doce Wind Farm with an investment of R$ 5,341,715 per each of the 222 installed MW – with 70% of the investment with an official bank (Caixa Econômica Federal) loan; d. Pedra do Sal Wind Farm with an investment of R$ 5,755,396 per each of the 18 installed MW. – with 70% of the investment with an official bank (BNDES) loan; By this comparison, the average value of total investment in wind farms in Brazil is around R$ 7,000,000 per installed MW Therefore, the total investment presented is assessed as adequate by the validation team. *Conclusion:* the total investment cost is consistent with supporting evidences provided and the value of total investment per installed capacity has been further cross-checked with public available data and other CDM projects (registered and under validation) resulting in

							the conclusion that the value is adequate to the project type context.
Equivalent hours	3,321	h/y	Evaluation of Wind Resources – Barlovento Recursos Naturales S.L. – page 50, Table 15 and page 51	/PLF/	☒	☒	*Description:* equivalent hours represent the total hours expected the wind farm to produce energy. *Justification of Evidences:* the certification of wind potential has been developed and represents the basis for the whole project. *Conclusion:* the developed study has been done by a third party , in accordance with EB 48, Annex 11, par. 3b and the value is deemed reasonable by the validation team for the project type and location.
Plant Load Factor	37.91	%	Calculation of Equivalent hours divided by Total hours of the year	/PLF/ /XLS/	☒	☒	*Description:* plant load factor is the value certified as a guarantee percentage of energy that will be generated. *Justification of Evidences:* it is calculated by the equation: Equivalent hours (3,321) / Total hours of the year (8,760). *Conclusion:* the value is consistent since the certification has been made by a third party and thus it is in line with EB 48, Annex 11.
Energy Generation	99,630	MWh	Calculation of Equivalent hours multiplied by Total capacity of the plant	/PLF/ /XLS/	☒	☒	*Description:* the value is the total energy that will be generated by the wind power plant. *Justification of Evidences:* it has been calculated by the equation: Equivalent hours (3,321) X Total Power Capacity (30MW). *Conclusion:* the value is consistent since the certification has been made by a third party.

Price of energy	152.27	R$/MWh	- Ratifying Bid Price Term – Process # 48500.002227/2009-21 - Print Screen ANEEL website – price of energy *(http://www.aneel.gov.br/aplicacoes/editais_geracao/documentos/032009-Resultado por vendedores.pdf)*	/FD/	☒	☒	*Description:* it is the price in R$ of 1 MWh generated. *Justification of Evidences:* the price is the bid price offered at the auction which is clearly defined at the Ratifying Bid Price Term and publication of the auction results at ANEEL website. *Conclusion:* it is a fixed price that has been determined by the bid price and it is clear and official and valid for 20 years.
O&M costs (wind turbines)	3.0	%	- Vestas' Proposal 20610-PR-GES-V90-3-80m - Gestamp's letter with the estimative of costs based in its experience - Study of Operation and Maintenance Costs of Wind Generated Power – Wind Energy - The Facts (WindFacts) – 5th paragraph *(http://www.wind-energy-the-facts.org/en/part-3-economics-of-wind-power/chapter-1-cost-of-on-land-wind-power/operation-and-maintenance-costs-of-wind-generated-power.html)* Costs & Prices – Wind Energy - The Facts - Volume 2 – by Poul Erik Morthorst – page 100	/FD/ /XLS/	☒	☒	*Description:* estimate of operational and maintenance cost of the turbines that will be done by their supplier. *Justification of Evidences:* these costs are calculated by the maintenance costs included at the proposal of Vestas, and considering the experience of the PP in other projects. The values that were used for the estimates are as follows: - Operation and maintenance of each turbine per year: R$ 116,000 – Vestas' proposal. - Operation and maintenance of the wind farm (except turbines): R$ 5.00 per MWh – experience of Gestamp as wind farm operations. - Insurance costs: R$ 250,000 – experience of Gestamp as wind farm operations. - Other costs: 2% of the net income – experience of Gestamp as wind farm

			(http://www.ewea.org/fileadmin/ewea_documents/documents/publications/WETF/Facts_Volume_2.pdf) - Article "Breaking down the cost of wind turbine maintenance", by David Milborrow – Wind Power Monthly – 4th and 5th paragraphs and graph. *(http://www.windpowermonthly.com/news/1010136/Breaking-down-cost-wind-turbine-maintenance/)* - Article "Economics of Wind Farms in Brazil", by J. P. Molly – DEWI Magazin # 25 *(http://www.dewi.de/dewi/fileadmin/pdf/publications/Magazin_25/11.pdf)*				operations. - Study of O&M costs (insurance, regular maintenance, repair, spare parts and administration): around € 1.2 to € 1.5 per kWh – based on experiences in Germany, Spain, UK and Denmark of the wind sector. - Article about the O&M costs in wind farms shows the following figures: € 20.6/MWh (Germany); € 18/MWh (UK); € 15/MWh (USA). The article is about the great difficulty to estimate the O&M costs and it states an average cost from € 7-26/MWh, as data from the International Energy Agency. It also states that the simplest way to define the O&M costs is "to assume that the total annual charges represent a percentage of the installed cost, often quoted between 3% and 5%". - Article about the costs of wind farms in Brazil in the beginning of the activities (2004) states that the O&M costs should be estimated in R$ 98/kW/y, based on German experience. In the article, the author considered that this value could be too high, especially because of the lower labor cost in Brazil. *Conclusion:* the assumptions (in percentage) have been cross-checked with publicly available information and studies about maintenance and cost of wind farms in Brazil and other countries resulting in the conclusion that the value is adequate to the project type

							context.
Benchmark	9.526	%	Brazilian government bond rate *http://www.tesouro.fazenda.gov.br/english/public_debt/downloads/informes/Emissao_Global_BRL2028_eng.pdf* Project Risk Premium *http://www.marinemoney.com/forums/RIO10/Presentations/Sept16th/Figueiredo.pdf*	/FD/ /XLS/	☒	☒	*Description:* the chosen benchmark was the sum of a Brazilian government bond rate with a maturity of 21 years and a project risk premium. *Justification of Evidences:* the chosen benchmark is the sum of a Brazilian government bond rate with 21 years maturity, with the most conservative yield for the bond rate – that was issued immediately before or after the management decision (yield of 8.626%) plus a BNDES bond as a project risk premium (with the lowest basic spread required for investments related to renewable energy – 0.9% per year). The total benchmark value is 9.526%. The bond has been issued by the Brazilian National Treasury and the project rate is proposed by BNDES, which is an official and main source for loans for infrastructure projects in Brazil. *Conclusion:* the chosen benchmark is adequate and calculated in line with EB51 Annex 58, paragraphs 13 and 15.
Technical Lifetime	20	years	Vestas Brochure V90-3.0MW – Verified Component Lifetime section – page 12	/TD/	☒	☒	*Description:* technical lifetime is the operational life time given by its supplier (Vestas). *Justification of Evidences:* it is the supplier‘s given technical operational lifetime which is stated in the equipment brochure. *Conclusion:* information given in Vesta’s

							brochure. Time period assessed for the investment analysis which is in compliance with the Guidelines on the Assessment of Investment Analysis (EB 51, Annex 58).
Inflation	4.5	%	http://www.bcb.gov.br/?SISMETAS	/FD/	☒	☒	*Description:* the target of inflation proposed for the Brazilian government. *Justification of Evidences:* the value is correct as the inflation target was supplied by the Central Bank of Brazil and it is within the range of recent inflation rates in Brazil. The data was cross-check against the Central Bank website. *Conclusion:* the inflation rate is reasonable and consistent with Brazilian economic targets.
Land cost	5,500	$R/MW/y	Land lease contracts – page 2 – 1st paragraph	/FD/	☒	☒	*Description:* the cost of the lease of the land, where the wind farm is located. *Justification of Evidences:* the cost of the use of the lands is stated at the lease contracts between the project owner and the owner of the land, where the project activity is implemented. It is clearly stated the cost in R$ 5,500.00 per year per installed MW. *Conclusion:* the value is clearly stated in a clause of the lease land contract.
TUSD Cost	0.5	%	Executive Decree #2410 – 1997-11-28 http://www.planalto.gov.br/ccivil_03/decreto/1997/D2410.htm	/FD/	☒	☒	*Description:* it is a fee over the use of the distribution system of energy that is charged in Brazil by the ANEEL. *Justification of Evidences:* the percentage of 0.5% is charged over the total income of the plant and as an official fee regulated by Executive Decree #2410.

							Conclusion: value is correctly applied according to Executive Decree #2410.
Transmission Cost	5.475	R$/kW-month	Electric Energy Fee and Final Price Table – Resolution #806	/FD/	☒	☒	*Description:* it is a fee charged by the state of Bahia over the use of the 69 kV transmission line. The value is charged as kW per month. *Justification of Evidences:* it is an official fee charged by COELBA established by COELBA's Resolution #806. *Conclusion:* value is correctly applied according to Resolution #806.
PIS/PASEP,COFINS	3.65	%	http://www.receita.fazenda.gov.br/legislacao/Leis/2004/lei10865.htm http://www.receita.fazenda.gov.br/Principal/Espanhol/SistemaTributarioBR/TribProtestados.htm	/FD/	☒	☒	*Description:* Brazilian tributes charged over the company's presumed profit (companies with gross revenue below R$ 48 million can apply the modality of tax call "Presumed (vain) tax profit"). *Justification of Evidences:* the presumed profit and the taxes are calculated as follows: - PIS / PASEP (Social Integration Program): 0.65% over the gross profit; - COFINS (Contribution for Financing Social Security): 3% over the gross profit *Conclusion:* correct rates applied according to Brazilian tax law.
Conversion from Dollar to Euro	1.48	US$	http://www.x-rates.com/	/XLS/ /change/	☒	☒	*Description:* conversion of currency from dollar to euro. *Justification of Evidences:* average conversion from dollar to euro for November and December 2009. *Conclus*ion: value from market variation. The

							website exchange rates are based on rates released by a few selected public free sources. Depending on their availability the International Monetary Fund, the European Central Bank, Bank of Canada or the Federal Reserve Bank of New York.
Conversion from Real to Dollar	1.74	R$	http://www.x-rates.com/	//XLS/ /change/	☒	☒	*Description:* conversion of currency from real to dollar. *Justification of Evidences:* average conversion from real to dollar for November and December 2009. *Conclusion:* value from market variation. The website exchange rates are based on rates released by a few selected public free sources. Depending on their availability the International Monetary Fund, the European Central Bank, Bank of Canada or the Federal Reserve Bank of New York.

ANNEX 4: ASSESSMENT OF BARRIER ANALYSIS

Table A-4: Assessment of Barrier Analysis (EB 55 Annex 3, § 118)

☒	No barrier parameters are used for additionality justification
☐	Assessment of barriers see below

Kind of Barrier (invest, tech, other)	Description of Barrier	Evidence used	Assessment of validation team	
			Appropriateness of information source	Explanation of final result
			☐	

ANNEX 5: OUTCOME OF THE GSCP

Table A-5: Outcome of the Global Stakeholder Consultation Process

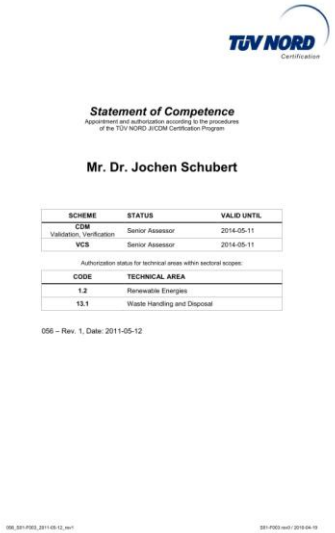
(§§ 40-42 VVM Version 1.2)

☒	No comments were received during the global stakeholder consultation period
☐	Comments were received during the global stakeholder consultation period. The comments (in unedited form) and the consideration/response of the validation team are presented below:

Comment No.:	Comment by:	Inserted on:	Subject	Comment *)	Action taken by the validation team to take due account on the comment *)	Conclusion (incl. CARs CLs or FARs)

*) In case clarifications have been requested by the validation team corresponding rows shall be added

ANNEX 6: STATEMENTS OF COMPETENCE OF ALL INVOLVED PERSONNEL



Statement of Competence

Appointment and authorization according to the procedures of the TÜV NORD JI/CDM Certification Program

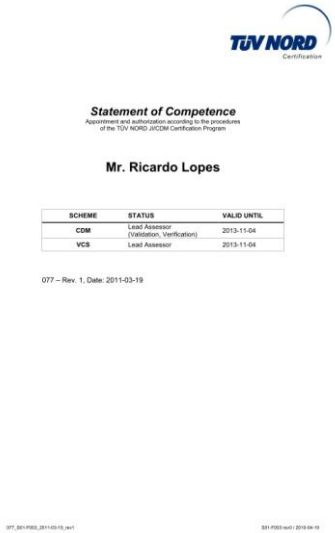
Mr. Dr. Jochen Schubert

SCHEME	STATUS	VALID UNTIL
CDM Validation, Verification	Senior Assessor	2014-05-11
VCS	Senior Assessor	2014-05-11

Authorization status for technical areas within sectoral scopes:

CODE	TECHNICAL AREA
1.2	Renewable Energies
13.1	Waste Handling and Disposal

056 – Rev. 1, Date: 2011-05-12



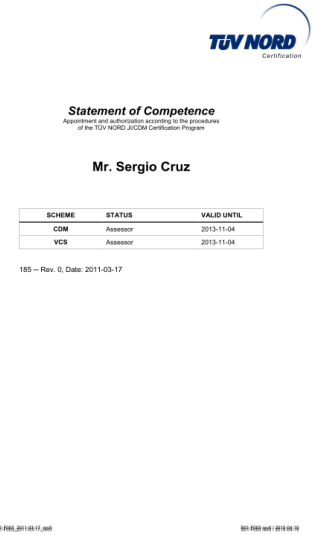
Statement of Competence

Appointment and authorization according to the procedures of the TÜV NORD JI/CDM Certification Program

Mr. Ricardo Lopes

SCHEME	STATUS	VALID UNTIL
CDM	Lead Assessor (Validation, Verification)	2013-11-04
VCS	Lead Assessor	2013-11-04

077 – Rev. 1, Date: 2011-03-19



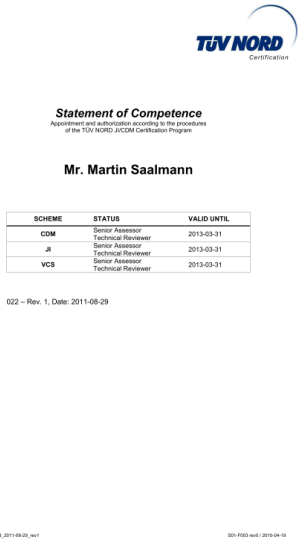
Statement of Competence

Appointment and authorization according to the procedures of the TÜV NORD JI/CDM Certification Program

Mr. Sergio Cruz

SCHEME	STATUS	VALID UNTIL
CDM	Assessor	2013-11-04
VCS	Assessor	2013-11-04

185 – Rev. 0, Date: 2011-03-17



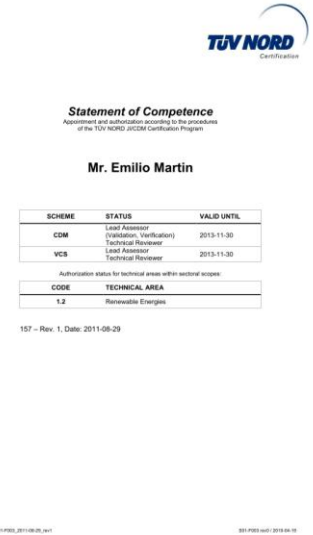
Statement of Competence

Appointment and authorization according to the procedures of the TÜV NORD JI/CDM Certification Program

Mr. Martin Saalmann

SCHEME	STATUS	VALID UNTIL
CDM	Senior Assessor Technical Reviewer	2013-03-31
JI	Senior Assessor Technical Reviewer	2013-03-31
VCS	Senior Assessor Technical Reviewer	2013-03-31

022 – Rev. 1, Date: 2011-08-29



Statement of Competence

Appointment and authorization according to the procedures of the TÜV NORD JI/CDM Certification Program

Mr. Emilio Martin

SCHEME	STATUS	VALID UNTIL
CDM	Lead Assessor (Validation, Verification) Technical Reviewer	2013-11-30
VCS	Lead Assessor Technical Reviewer	2013-11-30

Authorization status for technical areas within sectoral scopes:

CODE	TECHNICAL AREA
1.2	Renewable Energies

157 – Rev. 1, Date: 2011-08-29