VERIFICATION REPORT
VEJU SPEKTRAS,UAB

SECOND PERIODIC VERIFICATION OF THE RUDAICIAI WIND POWER PARK PROJECT

MONITORING PERIOD:
1 JANUARY 2009 TO 31 DECEMBER 2009

REPORT NO. LITHUANIA- VER #/0005/2010

REVISION NO. 02

BUREAU VERITAS CERTIFICATION

Report No: LITHUANIA- VER #/0005/20

VERIFICATION REPORT

Date of first issue: 20/05/2010	Organizational unit: Bureau Veritas Certification Holding SAS
Client: VEJU SPEKTRAS UAB	Client ref.: Alvydas Naujekas, director

Summary:

Bureau Veritas Certification has carried out the 2nd periodic verification of the JI Track II project "Rudaiciai wind power project" based on UNFCCC criteria for the JI, as well as criteria given to ensure consistent project operations, monitoring and reporting. UNFCCC criteria refer to Article 6 of the Kyoto Protocol, the JI rules and modalities and the subsequent decisions by the JI Supervisory Committee, as well as the host country criteria.

The verification scope is defined as a periodic independent review and ex post determination by the Accredited Independent Entities of the monitored reductions in GHG emissions during defined verification period, and consisted of the following three phases: i) desk review of the monitoring report, project design document including its monitoring plan; ii) follow-up interviews with project stakeholders; iii) resolution of outstanding issues and the issuance of the final verification report and opinion. The overall verification, from Contract Review to Verification Report & Opinion, was conducted using Bureau Veritas Certification internal procedures.
The first output of the verification process is a list of Clarification Requests, Corrective Actions Requests, Forward Actions Requests (CL, CAR and FAR), presented in Appendix A.

In summary, Bureau Veritas Certification confirms that the GHG emission reduction is calculated without material misstatements. Our opinion relates to the project's GHG emissions and resulting GHG emissions reductions reported and related to the valid and registered project baseline and monitoring, and its associated documents.

Reporting period: From 01/01/2009 to 31/12/2009.

Baseline emissions	:	35945	t CO2 equivalents
Project emissions:	:	0	t CO2 equivalents
Project leakage:	:	0	t CO2 equivalents
Emission Reductions	:	35945	t CO2 equivalents

Report No.: LITHUANIA- VER #/0005/20	Subject Group: JI	
Project title: RUDAICIAI WIND POWER PROJECT		
Work carried out by: Team Leader : Tomas Paulaitis		
Work verified by: Ashok Mammen – Internal technical reviewer		
Date of this revision: 27/05/2010	Rev. No.: 02	Number of pages: 30

Indexing terms

Climate Change, Kyoto Protocol, JI, Emission Reductions, Verification

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Abbreviations

AIE	Accredited Independent Entities
CAR	Corrective Action Request
CL	Clarification Request
CO2	Carbon Dioxide
ERU	Emission Reduction Units
FAR	Forward Action Request
GHG	Green House Gas(es)
IETA	International Emissions Trading Association
JI	Joint Implementation
MP	Monitoring Plan
MR	Monitoring report
PCF	Prototype Carbon Fund
PDD	Project Design Document
UAB	Joint stock company (in Lithuanian language)
UNFCCC	United Nations Framework Convention for Climate Change

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1 INTRODUCTION

VEJU SPEKTRAS,UAB has commissioned Bureau Veritas Certification to verify the emission reductions of its JI project "Rudaiciai wind power project" (hereafter called "the project") located in in the territory of villages Kiauleikiai, Kveciai and Rudaiciai, Kretinga district, Lithuania. The order comprises the second periodic verification and is related to emission reductions achieved during 1 January 2009 to 31 December 2009.

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

1.1 Objective

The purpose of this verification is a 2nd periodic verification.

The objective of the periodic verification is the review and ex post determination by an AIE of the GHG emission reductions. It includes the verification of the data given in the monitoring report by checking the monitoring records and the emissions reduction calculation.

1.2 Scope

The verification of this project is based on the Project Design Document, the Monitoring Report (covers January 1, 2009 to Dec 31, 2009), the monitoring plan as set out in the PDD, supporting documents made available to Bureau Veritas Certification, and information obtained through the on-site interviews and on-site assessment. The documents and information are reviewed against Kyoto Protocol requirements, UNFCCC rules and associated interpretations.

Bureau Veritas Certification, based on the recommendations in the Validation and Verification Manual (IETA/PCF), has employed a risk-based approach in the verification, focusing on the identification and reporting of significant risks and on reliability of project monitoring and generation of Emission Reductions Units (ERU).

The information in these documents is reviewed against Kyoto Protocol requirements, UNFCCC rules and associated interpretations.

The verification is not meant to provide any consulting towards the Client. However, stated requests for forward actions and/or corrective actions may provide input for improvement of the project monitoring towards reductions in the GHG emissions.

1.3 GHG Project Description

Rudaiciai wind power park project has been developed by UAB Veju spektras, a Lithuanian wind power company. 15 wind turbines with the total capacity of 30MW (2MW x 15) have been installed throughout 2006-2007 in the western part of Lithuania.
The Letters of Approvals (LoA) have been issued by the Ministry of the Environment of the Republic of Lithuania on 05.04.2007 and by the designated focal point of Netherlands SenterNovem on 16.05.2007.

Rudaiciai wind power park project has been approved by an accredited independent entity (AEI) and has been granted final determination. PDD is available on the UNFCCC website under project reference number 0025.

The project reduces greenhouse gas emissions by partially substituting power production in other power plants of Lithuania that run on fossil fuel.

2 METHODOLOGY

The verification is as a desk review and field visit including discussions and interviews with selected experts and stakeholders.

In order to ensure transparency, a verification protocol was customized for the project, according to the Validation and Verification Manual (IETA/PCF) a verification protocol is used as part of the verification. The protocol shows, in a transparent manner, criteria (requirements), means of verification and the results from verifying the identified criteria. The verification protocol serves the following purposes:

- It organises, details and clarifies the requirements the project is expected to meet; and
- It ensures a transparent verification process where the verifier will documents how a particular requirement has been verified and the result of the verification;

The verification protocol consists of one table under Initial Verification checklist (applicable only for initial verification) and four tables under Periodic verification checklist. The different columns in these tables are described in Figure 1.

The overall verification, from Contract Review to Verification Report & Opinion, was conducted using Bureau Veritas Certification procedures.

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

Initial Verification Protocol Table 1			
Objective	**Reference**	**Comments**	**Conclusion (CARs/FARs)**
The requirements the project must meet	Gives reference to where the requirement is found.	Description of circumstances and further comments on the conclusion	This is either acceptable based on evidence provided (OK), or a Corrective Action Request (CAR) of risk or non-compliance of the stated requirements. Forward Action Request (FAR) indicates essential risks for further periodic verifications.

Periodic Verification Checklist Protocol Table 2: Data Management System/Controls		
Identification of potential reporting risk	**Identification, assessment and testing of management controls**	**Areas of residual risks**
The project operator's data management system/controls are assessed to identify reporting risks and to assess the data management system's/control's ability to mitigate reporting risks. The GHG data management system/controls are assessed against the expectations detailed in the table.	A score is assigned as follows: • Full - all best-practice expectations are implemented. • Partial - a proportion of the best practice expectations is implemented • Limited - this should be given if little or none of the system component is in place.	Description of circumstances and further commendation to the conclusion. This is either acceptable based on evidence provided (OK), or a Corrective Action Request (CAR) of risk or non compliance with stated requirements. The corrective action requests are numbered and presented to the client in the verification report. The Initial Verification has additional Forward Action Requests (FAR). FAR indicates essential risks for further periodic verifications.

Periodic Verification Protocol Table 3: GHG calculation procedures and management control testing		
Identification of potential reporting risk	**Identification, assessment and testing of management controls**	**Areas of residual risks**
Identify and list potential reporting risks based on an assessment of the emission estimation procedures, i.e. ➢ the calculation methods, ➢ raw data collection and sources of supporting documentation, ➢ reports/databases/information systems from which data is obtained. Identify key source data. Examples of source data include metering	Identify the key controls for each area with potential reporting risks. Assess the adequacy of the key controls and eventually test that the key controls are actually in operation. Internal controls include (not exhaustive): ➢ Understanding of responsibilities and roles ➢ Reporting, reviewing and formal management approval of data; ➢ Procedures for ensuring	Identify areas of residual risks, i.e. areas of potential reporting risks where there are no adequate management controls to mitigate potential reporting risks Areas where data accuracy, completeness and consistency could be improved are highlighted.

records, process monitors, operational logs, laboratory/analytical data, accounting records, utility data and vendor data. Check appropriate calibration and maintenance of equipment, and assess the likely accuracy of data supplied. Focus on those risks that impact the accuracy, completeness and consistency of the reported data. Risks are weakness in the GHG calculation systems and may include: ➢ manual transfer of data/manual calculations, ➢ unclear origins of data, ➢ accuracy due to technological limitations, ➢ lack of appropriate data protection measures. For example, protected calculation cells in spreadsheets and/or password restrictions.	data completeness, conformance with reporting guidelines, maintenance of data trails etc. ➢ Controls to ensure the arithmetical accuracy of the GHG data generated and accounting records e.g. internal audits, and checking/ review procedures; ➢ Controls over the computer information systems; ➢ Review processes for identification and understanding of key process parameters and implementation of calibration maintenance regimes ➢ Comparing and analysing the GHG data with previous periods, targets and benchmarks. When testing the specific internal controls, the following questions are considered: 1. Is the control designed properly to ensure that it would either prevent or detect and correct any significant misstatements? 2. To what extent have the internal controls been implemented according to their design; 3. To what extent have the internal controls (if existing) functioned properly (policies and procedures have been followed) throughout the period? 4. How does management assess the internal control as reliable?	

Periodic Verification Protocol Table 4: Detailed audit testing of residual risk areas and random testing		
Areas of residual risks	**Additional verification testing performed**	**Conclusions and Areas Requiring Improvement (including Forward Action Requests)**
List the residual areas of risks. Table 2 where detailed audit testing is necessary. In addition, other material areas may be selected for detailed audit testing.	The additional verification testing performed is described. Testing may include: 1. Sample cross checking of manual transfers of data 2. Recalculation 3. Spreadsheet 'walk throughs' to check links and equations 4. Inspection of calibration and maintenance records for key equipment ➢ Check sampling analysis results ➢ Discussions with process engineers who have detailed knowledge of process uncertainty/error bands.	Having investigated the residual risks, the conclusions should be noted here. Errors and uncertainties should be highlighted. Errors and uncertainty can be due to a number of reasons: ➢ Calculation errors. These may be due to inaccurate manual transposition, use of inappropriate emission factors or assumptions etc. ➢ Lack of clarity in the monitoring plan. This could lead to inconsistent approaches to calculations or scope of reported data. ➢ Technological limitations. There may be inherent uncertainties (error bands) associated with the methods used to measure emissions e.g. use of particular equipment such as meters. ➢ Lack of source data. Data for some sources may not be cost effective or practical to collect. This may result in the use of default data which has been derived based on certain assumptions/conditions and which will therefore have varying applicability in different situations. The second two categories are explored with the site personnel, based on their knowledge and experience of the processes. High risk process parameters or source data (i.e. those with a significant influence on the reported data, such as meters) are reviewed for these uncertainties.

Verification Protocol Table 5: Resolution of Corrective Action and Clarification Requests			
Report clarifications and corrective action requests	**Ref. to checklist question**	**Summary of project owner response**	**Verification conclusion**
If the conclusions from the Verification are either a Corrective Action Request or a Clarification Request, these should be listed in this section.	Reference to the checklist question number in Tables 2, 3 and 4 where the Corrective Action Request or Clarification Request is explained.	The responses given by the Client or other project participants during the communications with the verification team should be summarized in this section.	This section should summarize the verification team's responses and final conclusions. The conclusions should also be included in Tables 2, 3 and 4, under "Final Conclusion".

Figure 1 Verification protocol tables

2.1 Review of Documents

The Monitoring Report (MR) submitted by VEJU SPEKTRAS, UAB and additional background documents related to the project design and baseline, i.e. country Law, Project Design Document (PDD), Approved methodology, Kyoto Protocol, Clarifications on Verification Requirements were reviewed by AIE.
The verification findings presented in this report relate to the project as described in the PDD Version 05 and Project Monitoring Report Version 1.

2.2 Follow-up Interviews

On 13/04/2010 Bureau Veritas Certification performed interviews with project stakeholders to confirm selected information and to resolve issues identified in the document review. Representatives of VEJU SPEKTRAS, UAB and local community were interviewed (see References). The main topics of the interviews are summarized in Table 1.

Table 1 Interview topics

Interviewed organization	Interview topics
VEJU SPEKTRAS, UAB	Implementation of project, monitoring of electricity supplied to the grid, calibration and maintenance of the electric power meters, responsibilities and legal requirements, quality management requirements, reporting.
Head of the local community (Kretingos kaimiskoji seniunija)	Local community comments

2.3 Resolution of Clarification, Corrective and Forward Action Requests

The objective of this phase of the verification is to raise the requests for corrective actions and clarification and any other outstanding issues that needed to be clarified for Bureau Veritas Certification positive conclusion on the GHG emission reduction calculation.

Findings established during the initial verification can either be seen as a non-fulfilment of criteria ensuring the proper implementation of a project or where a risk to deliver high quality emission reductions is identified.

Corrective Action Requests (CAR) are issued, where:
i) there is a clear deviation concerning the implementation of the project as defined by the PDD;
ii) requirements set by the MP or qualifications in a verification opinion have not been met; or
iii) there is a risk that the project would not be able to deliver (high quality) ERUs.

Forward Action Requests (FAR) are issued, where:
iv) the actual status requires a special focus on this item for the next consecutive verification, or
v) an adjustment of the MP is recommended.

The verification team may also use the term Clarification Request (CL), which would be where:
vi) additional information is needed to fully clarify an issue.

To guarantee the transparency of the verification process, the concerns raised are documented in more detail in the verification protocol in Appendix A.

3 SECOND PERIODIC VERIFICATION FINDINGS

3.1 Remaining issues, CAR's, FAR's from previous verification

There are no remaining issues from first periodic verification.

3.2 Completeness of Monitoring

3.2.1 Discussion

Monitoring routines have been checked. It can be stated that monitoring routines are implemented in accordance with the monitoring plan, except of CAR 1.

Internal and external data are clearly demonstrated in the monitoring report.

3.2.2 Findings

Corrective action No 1

Another wind power park (LIEPYNE wind power park, operated by Vejo gusis, UAB) was connected to the transformer station in December 2009 and the main commercial meter T-101 is used now to account the amount of power produced and consumed jointly for RUDAICIAI and LIEPYNE wind power parks.

Please, describe power monitoring changes in the monitoring report and procedures KP-GM-01, KP-GM-02.

Response

New 9,13 MW wind park LIEPYNE operated by Vejo gusis, UAB was connected to the transmission grid through Veju spektras, UAB transformer station in December 2009. Since then the main commercial meter T-101 is used to account the amount of power produced and consumed jointly for RUDAICIAI and LIEPYNE wind power parks (the producers). The amount of power produced and consumed by each company is calculated and divided by special algorithm set in the Electric Energy Purchase-Sales Agreement with AB Lietuvos energija No. 104-10, dated February 26, 2010 (appendix No.4), i.e. according to the total data of the 4 control meters the proportion (%) of each producer is calculated; then according to these proportions the power production and consumption data of the main commercial meter T-101 is divided between the producers.

CO2 emission reduction calculation of year 2009 is performed by UAB Vėjų spektras, in January 2010. Power production data quality is assured

by AB Lietuvos energija who is responsible for the calibration of the commercial power metering devices.

Monitoring report version 2 has been issued, where monitoring changes are described.
Procedures KP-GM-01 and KP-GM- has been revised accordingly.

Conclusion of verification team

The amount of power delivered to grid by Veju spektras, UAB on December 2009 was verified additionally in view of algorithm set in the Electric Energy Purchase-Sales Agreement with AB Lietuvos energija No. 104-10, dated February 26, 2010 (appendix No.4) and found acceptable. Procedures KP-GM-01, KP-GM-02 procedures also have been adjusted properly.

Hence CAR 1 is closed. However, to ensure completeness of the monitoring requirements FAR 2 is issued:

Forward action request No 2: Please revise monitoring plan (taking into account that monitoring is changed when LIEPYNE wind power park was connected to the transmission grid through Veju spektras, UAB) and submit it for the determination by the accredited independent entity until the next verification.

Corrective action No 2

CAR 2: Please, identify in the monitoring report Table 2 additional control meters used for power monitoring since December 2009 ant provide calibration documents for these meters. This CAR is related with CAR1.

Response

Table 2 and Figure 3 have been revised as requested in the monitoring report version 2. Calibration records of the additional control meters have been provided to verification.

Conclusion of verification team

Additional control meters used in the monitoring since 2009 is clearly identified. Calibration status of all these meters was verified and was found valid.

Hence, CAR 2 is closed.

3.2.3 Conclusions

Bureau Veritas confirms that:

- CAR 1, CAR 2 was implemented efficiently;
- The monitoring is in accordance with the monitoring plan of the approved PDD, however, to ensure completeness of the monitoring requirements FAR 2 is issued;
- The monitoring report (version 2) is transparent and complete.

3.3 Accuracy of Emission Reduction Calculations

3.3.1 Discussion

Calculations of the emission reductions presented in the monitoring report have been checked.

3.3.2 Findings

Clarification action request No 1

3 additional meters (LN KIAULEIKIAI, LN KVECIAI, LN RUDAICIAI) are dedicated to RUDAICIAI wind power park and 1 meter (L-107) is dedicated to LIEPYNE wind power park, because of the changes in the power monitoring system, see CAR1. Please explain how the amount of power supplied and consumed will be separated between Vejo gusis, UAB and Vejo spektras, UAB in case of these meter failure.

Response

In this case „Electric energy supply and consume rules", approved by Lithuanian Minister of Economy on 7 October 2005 (clause 96.4), will be used.

Conclusion of verification team

According guidelines provided in the „Electric energy supply and consume rules" clause 96.4, comparative analysis method should be used and agreed between parties in this case.

This information was found sufficient, hence CL1 is closed.

3.3.3 Conclusions

Bureau Veritas confirms that emission reduction calculations are carried our according to the monitoring plan of the approved PDD without mistakes and misstatements.

3.4 Quality Evidence to Determine Emission Reductions

3.4.1 Discussion

The calculation of emission reductions was based on internal data (the external emission factor has a fixed value for all monitoring period).

Internal data (the net hourly electricity supplied to the grid) declared in the monitoring report (version 1) is in accordance with the data declared in electric power dispatch reports and financial documents.

3.4.2 Findings

None.

3.4.3 Conclusions

Bureau Veritas confirms that the monitoring report (version 2) is in conformity with requirements to the quality of evidence.

3.5 Management System and Quality Assurance

3.5.1 Discussion

The quality assurance procedures are documented and implemented effectively as a result of the initial verification findings. However, these procedures have not been revised when commercial meter T-101 is started to account the amount of power produced and consumed jointly for RUDAICIAI and LIEPYNE wind power parks.

3.5.2 Findings

Forward action request No 1

Responsibilities and requirements for monitoring report preparation (including requirements for monitoring report content) might also be described in the KP-GM-05.

Response

Procedure KP-GM-05 has been revised accordingly.

Conclusion of verification team

Responsibilities and requirements for monitoring report preparation is clearly described in the Procedure KP-GM-05 version 3. Hence FAR1 is closed.

3.5.3 Conclusions

Bureau Veritas confirms that the monitoring is in accordance with the PDD requirements for the management system and operational control.

4 PROJECT SCORECARD

Risk Areas		Conclusions			Summary of findings and comments
		Baseline Emissions	Project Emissions	Calculated Emission Reductions	
Completeness	Source coverage/ boundary definition	✓	✓	✓	Relevant sources are covered by the monitoring plan. Boundaries of the project are defined transparently and correctly.
Accuracy	Physical Measurement and Analysis	✓	✓	✓	Physical measurements and analysis are reliable.
	Data calculations	✓	✓	✓	Data are calculated correctly.
	Data management & reporting	✓	✓	✓	Data management and reporting are reliable.
Consistency	Changes in the project	✓	✓	✓	There are no changes in the project; results are consistent to underlying raw data.

5 SECOND PERIODIC VERIFICATION STATEMENT

Bureau Veritas Certification has performed the 2nd periodic verification of the project "Rudaiciai wind power project". The verification is based on the currently valid documentation of the United Nations Framework Convention on the Climate Change (UNFCCC).

The management of VEJU SPEKTRAS, UAB is responsible for the preparation of the GHG emissions data and the reported GHG emissions reductions of the project on the basis set out within the project Monitoring and Verification Plan indicated in the final PDD version 05. The development and maintenance of records and reporting procedures in accordance with that plan, including the calculation and determination of GHG emission reductions from the project is the responsibility of the management of the project.

Bureau Veritas Certification verified the Project Monitoring Report v02 for the reporting period as indicated below.

Bureau Veritas Certification can confirm that the GHG emission reduction is calculated without material misstatements. Our opinion relates to the project's GHG emissions and resulting GHG emissions reductions reported and related to the valid and approved project baseline and monitoring, and its associated documents. Based on the information we have seen and evaluated we confirm the following statement:

Reporting period: From 01/01/2009 to 31/12/2009

Baseline emissions	:	35945	t CO_2 equivalents.
Project emissions	:	0	t CO_2 equivalents.
Project leakage:	:	0	t CO_2 equivalents.
Emission reductions	:	35945	t CO_2 equivalents.

6 REFERENCES

Category 1 Documents:
Documents provided by VEJU SPEKTRAS, UAB that relates directly to the GHG components of the project.

/1/	PDD ”Rudaiciai wind power park project”, version 05 April 2008
/2/	First Periodic Verification Report No. 600500233, issued on 09 August 2009 by TÜV SÜD Industrie Service GmbH
/3/	Rudaiciai wind power park project MONITORING REPORT, version 1, issued on 11 February 2010
/4/	Rudaiciai wind power park project MONITORING REPORT, version 2, issued on 30 April 2010
/5/	Excel spreadsheet “Rudaiciai_CO2_reduction_2009_v01”.

Category 2 Documents:
Background documents related to the design and/or methodologies employed in the design or other reference documents.

/1/	Electric power dispatch reports and invoices, signed by VEJU SPEKTRAS, UAB and Lietuvos energija, AB, year 2009
/2/	Power dispatch reports and invoices, signed by VST, UAB and Veju Spektras (January 2009, December 2008)
/3/	Technical passports with calibration records for electric power meters
/4/	Excel spreadsheat “Rudaiciai_CO2_reduction_2009_v01”
/5/	Quality Assurance procedures: • KP-ADM-01: Contract Signature Procedure • KP-GM-01: Power Production-Consumption Document Signature Procedure with Lietuvos Energija • KP-GM-02: Power Production Document Signature Procedure with Lietuvos Energija • KP-GM-03: Power Consumption Document Signature Procedure with Lietuvos Energija • KP-GM-04: Power Production-Consumption Document Signature Procedure with VST • KP-GM-05: CO2 Emission Reduction Calculation
/6/	Electric power distribution report, signed by VEJU SPEKTRAS, UAB and VEJO GUSIS, UAB, on 11 January 2010.
/7/	Electric power meters photos

Persons interviewed:

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

/1/ Alvydas Naujekas, director

/2/ Jurate Dociuvienė, business coordinator

/3/ Antanas Gedminas, head of the local community (Kretingos kaimiškoji seniūnija)

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APPENDIX A: PROJECT VERIFICATION PROTOCOL

Table 1: Data Management System/Controls

The project operator's data management system/controls are assessed to identify reporting risks and to assess the data management system's/controls' ability to mitigate reporting risks. The GHG data management system/controls are assessed against the expectations detailed in the table. A score is assigned as follows:

- Full - all best-practice expectations are implemented.
- Partial - a proportion of the best practice expectations is implemented.
- Limited - this should be given if few or none of the system components are in place.

Expectations for GHG data management system/controls	Score	Verifiers Comments (including Forward Action Requests)
1. Defined organisational structure, responsibilities and competencies		
1.1. Position and roles Position and role of each person in the GHG data management process is clearly defined and implemented, from raw data generation to submission of the final data. Accountability of senior management must also be demonstrated.	Full	The responsibilities and roles for monitoring and reporting are stated in the monitoring plan (generally) and in the following Quality Assurance procedures (in detail): • KP-ADM-01: Contract Signature Procedure • KP-GM-01: Power Production-Consumption Document Signature Procedure with Lietuvos Energija • KP-GM-02: Power Production Document Signature Procedure with Lietuvos Energija • KP-GM-03: Power Consumption Document Signature Procedure with Lietuvos Energija • KP-GM-04: Power Production-Consumption Document Signature Procedure with VST • KP-GM-05: CO2 Emission Reduction Calculation Quality assurance procedures have been prepared and finalized in 2009 according to FAR's of the previous verifications. Director of the Veju spektras, UAB (Mr. Alvydas Naujekas) is responsible for the JI project management and clearly demonstrated his accountability and awareness during the on-site visit.
1.2. Responsibilities Specific monitoring and reporting tasks and responsibilities are included in job descriptions or special instructions for employees.	Full	See 1.1. above.
1.3. Competencies needed Competencies needed for each aspect of the GHG determination process are analysed. Personnel competencies are assessed and training programme implemented as required.	Full	The monitoring of power production is carried out by the business coordinator and director, both of them have the necessary competence and skills. No training was performed during 2009, the necessity of training programmes is not identified.
2. Conformance with monitoring plan		

Expectations for GHG data management system/controls	Score	Verifiers Comments (including Forward Action Requests)
2.1. Reporting procedures Reporting procedures should reflect the monitoring plan content. Where deviations from the monitoring plan occur, the impact of this on the data is estimated and the reasons justified.	Full	Reporting requirements are described in the monitoring plan (PDD section D.3 and PDD Annex 3). Reporting requirements are more detailed in the procedure KP-GM-05 “CO2 Emission Reduction Calculation”. The implementation of the monitoring plan has been investigated and the following monitoring practice was found in place: The reporting is based on the monitoring of: • the power dispatch confirmation documents (for produced and consumed power) signed with Lietuvos energija, AB; • power dispatch confirmation documents signed with VST, UAB (for back-up feeding). Another wind power park (LIEPYNE wind power park, operated by Vejo gusis, UAB) was connected to the transformer station in December 2009 and the main commercial meter T-101 is used now to account the amount of power produced and consumed jointly for RUDAICIAI and LIEPYNE wind power parks. Monitoring results are transferred in the Excel spreadsheet and emission reduction in tonnes of CO2 is calculated by multiplying the balance of supplied and consumed power in MWh by emission factor 0.626 tCO2/MWh. Mayor monitoring change related with LIEPYNE wind power park connection to the transformer station is not reflected in the monitoring plan. Therefore CAR 1 is issued (see 2.2 below). Few minor deviations from the monitoring plan requirements has been found also: - Excel spreadsheet table columns are not completely correspond to monitoring report table columns provided in the PDD Annex 3; - Consulting company is not contracted to revise the monitoring reports. Therefore FAR 1 is issued: FAR 1: Responsibilities and requirements for monitoring report preparation (including requirements for monitoring report content) might also be described in the KP-GM-05. The verification team checked the monitoring data and calculation completely; no mistakes or misstatements were found. Emission reduction (35 945 tCO2) is significantly lower than estimated in PDD (46 231 tCO2) and lower than in 2008 (44934 tCO2). The lower emission reduction level is explained by the lower average wind speed in 2008.
		The lower emission reduction level is explained by the lower average wind

Expectations for GHG data management system/controls	Score	Verifiers Comments (including Forward Action Requests)
2.2. Necessary Changes Necessary changes to the monitoring plan are identified and changes are integrated in local procedures as necessary.	Partial	CAR1: Another wind power park (LIEPYNE wind power park, operated by Vejo gusis, UAB) was connected to the transformer station in December 2009 and the main commercial meter T-101 is used now to account the amount of power produced and consumed jointly for RUDAICIAI and LIEPYNE wind power parks. Please, describe power monitoring changes in the monitoring report and procedures KP-GM-01, KP-GM-02.
3. Application of GHG determination methods		
3.1. Methods used There are documented descriptions of the methods used to determine GHG emissions and justification for the chosen methods. If applicable, procedures for capturing emissions from non-routine or exceptional events are in place and implemented.	Partial	CL1: 3 additional meters (LN KIAULEIKIAI, LN KVECIAI, LN RUDAICIAI) are dedicated to RUDAICIAI wind power park and 1 meter (L-107) is dedicated to LIEPYNE wind power park, because of the changes in the power monitoring system, see CAR1. Please explain how the amount of power supplied and consumed will be separated between Vejo gusis, UAB and Vejo spektras, UAB in case of these meter failure.
3.2. Information/process flow An information/process flow diagram, describing the entire process from raw data to reported totals is developed.	Partial	The information/process flow is described in the monitoring plan and Quality Assurance procedures and is followed according to these requirements. However, these requirements should be corrected according to CAR1.
3.3. Data transfer Where data is transferred between or within systems/spreadsheets, the method of transfer (automatic/manual) is highlighted - automatic links/updates are implemented where possible. All assumptions and the references to original data sources are documented.	Full	Not applicable, there is no data transfer between or within systems/spreadsheets.
3.4. Data trails Requirements for documented data trails are defined and implemented and all documentation is physically available.	Full	All documents with primary data are available and were provided for verification: • month power dispatch confirmation documents; • month power dispatch invoices. Power dispatch confirmation documents and invoices are stored by the business coordinator according to Quality Assurance procedures.
4. Identification and maintenance of key process parameters		

<table>
<tr><th>Expectations for GHG data management system/controls</th><th>Score</th><th>Verifiers Comments (including Forward Action Requests)</th></tr>
<tr><td>4.1. Identification of key parameters
The key physical process parameters that are critical for the determination of GHG emissions (e.g. meters, sampling methods) are identified.</td><td>Full</td><td>CAR 2: Please, identify in the monitoring report Table 2 additional control meters used for power monitoring since December 2009 ant provide calibration documents for these meters. This CAR is related with CAR1.</td></tr>
<tr><td>4.2. Calibration/maintenance
Appropriate calibration/maintenance requirements are determined.</td><td>Full</td><td>Lietuvos energija, AB is responsible for the calibration and maintenance of commercial electric power meters.

The verification team has checked the validity of metrological meters’ test, see the table below:

<table>
<tr><th>Meter ID number</th><th>Description</th><th>Serial number</th><th>Metrological test date</th><th>Test validity</th></tr>
<tr><td>T-101</td><td>Main commercial meter</td><td>289135</td><td>2005.09.29</td><td>O.K.</td></tr>
<tr><td>T-101/D</td><td>Control commercial meter</td><td>289203</td><td>2005.09.29</td><td>O.K.</td></tr>
<tr><td>E-1</td><td>Back-up feed meter</td><td>282688</td><td>2005.09.06</td><td>O.K.</td></tr>
</table>

Metrological tests are valid for all these meters (testing periodicity is 8 years according to Lithuania’s legislation). When the information requested in the CAR2 is provided, the metrological status of additional control meters will be verified.

There was no meter failure in 2009.</td></tr>
<tr><td>5. GHG Calculations</td><td></td><td></td></tr>
<tr><td>5.1. Use of estimates and default data
Where estimates or default data are used, these are validated and periodically evaluated to ensure their ongoing appropriateness and accuracy, particularly following changes to circumstances, equipment etc. The validation and periodic evaluation of this is documented.</td><td>Full</td><td>The default value of the emission factor has been already described in the PDD and has been confirmed in the determination report.</td></tr>
</table>

Expectations for GHG data management system/controls	Score	Verifiers Comments (including Forward Action Requests)
5.2. Guidance on checks and reviews Guidance is provided on when, where and how checks and reviews are to be carried out, and what evidence needs to be documented. This includes spot checks by a second person not performing the calculations over manual data transfers, changes in assumptions and the overall reliability of the calculation processes.	Full	The amount of power delivered/consumed is controlled sufficiently by responsible persons from Lietuvos energija, UAB and VST, UAB when power dispatch confirmation documents are signed.
5.3. Internal verification Internal verifications include the GHG data management systems, to ensure consistent application of calculation methods.	Full	The emission reduction calculation process is quite simple and has been fully checked by the verifier; therefore internal verification is not needful.
5.4. Internal validation Data reported from internal departments should be validated visibly (by signature or electronically) by an employee who is able to assess the accuracy and completeness of the data. Supporting information on the data limitations, problems should also be included in the data trail.	Full	Power dispatch documents and invoices are validated by the Director of Vejo spektras, UAB. Emission reduction calculations are also validated by the Director signing the monitoring report.
5.5. Data protection measures Data protection measures for databases/spreadsheets should be in place (access restrictions and editor rights).	Full	Not applicable for databases, no databases are used. The Monitoring Excel spreadsheet is used only by the Business coordinator in her personal computer and is protected by a password.
5.6. IT systems IT systems used for GHG monitoring and reporting should be tested and documented.	Full	Not applicable, no IT systems are used for GHG monitoring and reporting.

Table 2: GHG calculation procedures and management control testing

Identification of potential reporting risk	Identification, assessment and testing of management controls	Areas of residual risks
Misstatement of the electricity supplied to the grid/consumed from the grid	Invoicing with grid operator Lietuvos energija, UAB is standardized in contracts and controlled sufficiently by representatives from Lietuvos energija, AB and VST, UAB.	The risk for misstatements to identify the amount of electricity supplied/consumed is created by the fact that another wind power park (LIEPYNE wind power park, operated by Vejo gusis, UAB) was connected to the transformer station in December 2009 and the main commercial meter T-101 is used now to account the amount of power produced and consumed jointly for RUDAICIAI and LIEPYNE wind power parks (see CAR1).
Misstatement of the electricity consumed for back-up feeding	Invoicing with distribution network operator VST, UAB is standardized and controlled sufficiently, moreover, the back-up feeding is seldom and temporary activity is ensured with low power consumption.	Residual risk level is low.
Failure of the electric power meters, resulting in the loss of data or misstatements	The main power meter (T-101) has a control-meter (T-101/D) which is working simultaneously, data are transferred continuously to Lietuvos energija, AB dispatch centre, therefore data loss or misstatements of the main meter are low.	Residual risk is related to additional meters used for monitoring since December 2009 (see CL1).
Mistakes because of transferring data to monitoring spreadsheet, mistakes in emission reduction calculations and transferring calculation results to monitoring report.	Data transferring and calculation processes are simple, formulas are protected in the calculation Excel spreadsheet. The amount of data and calculations is low, they can be fully verified during the verification.	Residual risk level is low.

Table 3: Detailed audit testing of residual risk areas and random testing

Areas of residual risks	Additional verification testing performed	Conclusions and Areas Requiring Improvement (including Forward Action Requests)
The risk for misstatements to identify the amount of electricity supplied/consumed is created by the fact that another wind power park (LIEPYNE wind power park, operated by Vejo gusis, UAB) was connected to the transformer station in December 2009 and the main commercial meter T-101 is used now to account the amount of power produced and consumed jointly for RUDAICIAI and LIEPYNE wind power parks (see CAR1).	To check the information provided to resolve CAR1, to audit supplied/consumed electricity distribution documents signed between Vejo spektras, UAB and Vejo gusis, UAB.	See verification conclusions in the Table 4.
The residual risk is related to additional meters used for monitoring since December 2009 (see CL1).	To check the information provided to resolve CL1.	See verification conclusions in the Table 4.

Table 4: Resolution of Corrective Action and Clarification Requests

Report clarifications and corrective action requests	Reference to checklist question	Summary of project owner response	Verification conclusion
CAR1: Another wind power park (LIEPYNE wind power park, operated by Vejo gusis, UAB) was connected to the transformer station in December 2009 and the main commercial meter T-101 is used now to account the amount of power produced and consumed jointly for RUDAICIAI and LIEPYNE wind power parks. Please, describe power monitoring changes in the monitoring report and procedures KP-GM-01, KP-GM-02.	2.2.	New 9,13 MW wind park LIEPYNE operated by Vejo gusis, UAB was connected to the transmission grid through Veju spektras, UAB transformer station in December 2009. Since then the main commercial meter T-101 is used to account the amount of power produced and consumed jointly for RUDAICIAI and LIEPYNE wind power parks (the producers). The amount of power produced and consumed by each company is calculated and divided by special algorithm set in the Electric Energy Purchase-Sales Agreement with AB Lietuvos energija No. 104-10, dated February 26, 2010 (appendix No.4), i.e. according to the total data of the 4 control meters the proportion (%) of each producer is calculated; then according to these proportions the power production and consumption data of the main commercial meter T-101 is divided between the producers. CO2 emission reduction calculation of year 2009 is performed by UAB Vėjų spektras, in January 2010. Power production data quality is assured by AB Lietuvos energija who is responsible for the calibration of the commercial power metering devices. Monitoring report version 2 has been	The amount of power delivered to grid by Veju spektras, UAB on December 2009 was verified additionally in view of algorithm set in the Electric Energy Purchase-Sales Agreement with AB Lietuvos energija No. 104-10, dated February 26, 2010 (appendix No.4) and found acceptable. Procedures KP-GM-01, KP-GM-02 procedures also have been adjusted properly. Hence CAR 1 is closed. However, to ensure completeness of the monitoring requirements FAR 2 is issued: FAR 2: Please revise monitoring plan (taking into account that monitoring is changed when LIEPYNE wind power park was connected to the transmission grid through Veju spektras, UAB) and submit it for the determination by the accredited independent entity until the next verification.

Report clarifications and corrective action requests	Reference to checklist question	Summary of project owner response	Verification conclusion
		issued, where monitoring changes are described. Procedures KP-GM-01 and KP-GM- has been revised accordingly.	
CAR 2: Please, identify in the monitoring report Table 2 additional control meters used for power monitoring since December 2009 ant provide calibration documents for these meters. This CAR is related with CAR1.	4.2.	Table 2 and Figure 3 have been revised as requested in the monitoring report version 2. Calibration records of the additional control meters has been provided to verification.	Additional control meters used in the monitoring since 2009 is clearly identified. Calibration status of all these meters was verified and was found valid: Meter position name / Serial No LN Kiauleikiai / 508196 LN Kveciai / 508202 LN Rudaiciai / 508174 L-107 / 649218 Hence, CAR 2 is closed.
CL1: 3 Additional meters are dedicated to RUDAICIAI wind power park and 1 meter is dedicated to LIEPYNE wind power park, because of the changes in the power monitoring system, see CAR1. Please, explain how the amount of power supplied and consumed will be separated between Vejo gusis, UAB and Vejo spektras, UAB in case of control meter failure because these meters do not have control meters.	3.1.	In this case „Electric energy supply and consume rules", approved by Lithuanian Minister of Economy on 7 October 2005 (clause 96.4), will be used.	According guidelines provided in the „Electric energy supply and consume rules" clause 96.4, comparative analysis method should be used and agreed between parties in this case. This information was found sufficient, hence CL1 is closed.
FAR 1: Responsibilities and requirements for monitoring report preparation (including requirements for monitoring report content) might also be described in the KP-GM-05.	2.1.	Procedure KP-GM-05 has been revised accordingly.	Responsibilities and requirements for monitoring report preparation is clearly described in the Procedure KP-GM-05 version 3. Hence FAR1 is closed.
FAR 2: Please revise monitoring plan (taking into account that			To be audited during the next

Report clarifications and corrective action requests	Reference to checklist question	Summary of project owner response	Verification conclusion
monitoring is changed when LIEPYNE wind power park was connected to the transmission grid through Veju spektras, UAB) and submit it for the determination by the accredited independent entity until the next verification.			periodic verification.

APPENDIX B: VERIFICATION TEAM

The verification team consists of the following personnel:

Tomas Paulaitis, M.Sci. (chemical engineering)
Bureau Veritas Certification Climate Change Lead Verifier

Tomas Paulaitis is a lead auditor for the environment and quality management systems and a lead GHG verifier (EU ETS, JI) with over 10 years of experience and was/is involved in the determination/verification of 8 JI projects.

Ashok Mammen
Bureau Veritas Certification Climate Change Internal reviewer

Dr. Mammen is a lead auditor for the environment, safety and quality management systems and a lead verifier for GHG projects with over 20 years of experience in chemical and petrochemical field with a Ph. D. in oils and lubricants. He has been involved in the validation and verification processes of more than 60 CDM/JI and other GHG projects.