



Industrie Service

Choose certainty.
Add value.

Verification Report

SIA E Kvotas

First Periodic Verification JI Track 2 of the Rudaiciai Wind Power Park Project in Lithuania

Report No. 600500233

August 9, 2009

TÜV SÜD Industrie Service GmbH
Carbon Management Service
Westendstr. 199 - 80686 Munich - GERMANY



Report No.	Date of first issue	Version	Date of this revision	Certificate No.
600500233	2009-05-05	2.0	09-08-2009	

Subject:	Periodic Verification
Executing Operational Unit:	
TÜV SÜD Industrie Service GmbH, Carbon Management Service Westendstrasse 199 - 80686 Munich, Federal Republic of Germany	
Project Participant:	
UAB Veju Spektras, Dvaro 4a, Kretinga, Lithuania	
Registration number / Project Title	Project 0025: "Rudaiciai Wind Power Park Project"
Monitoring period:	01-01-2008 to 31-12-2008
First Monitoring Report (version/date)	Version 01 / 29-01-2009
Final Monitoring Report (version/date)	Version 02 / 20-03-2009
Sectoral scope/Technical area	1/1.1 (wind energy)
Summary: TÜV SÜD Industrie Service GmbH has performed the periodic verification for 2008 of the registered JI Track 2 project: "Rudaiciai Wind Power Park Project". The project consists of 15 units of Enercon E-70 type wind turbines and transformer station which are installed in Kretinga district (Lithuania) in the territory of villages Kiauleikiai, Kveciai and Rudaičiai. The management of UAB Veju Spektras is responsible for the preparation of the GHG emissions data and the reported GHG emission reductions. A document review, followed by a site visit was conducted to verify the information submitted by the project participant regarding the present verification period. Based on the assessment carried out, the verifier confirms: • that the project has been implemented and operated in accordance with the description given in the registered PDD (version PDD 05 April 2008, registration date 28-07-2008). • that the project is completely implemented as described in registered PDD. • that the monitoring plan complies with the applied methodology (described in PDD) and the monitoring has been carried out as exactly following the monitoring plan. Installed equipments essential for generating emission reductions run reliably and the meters are calibrated appropriately. The project is generating emission reductions as a JI project. The verifier can confirm that the GHG emission reductions are calculated without material misstatements. Our opinion refers to the project's GHG emissions and resulting GHG emission reductions reported, both determined due to the valid and registered project's baseline, its monitoring plan and its associated documents. Based on the information we have seen and evaluated we confirm that the implementation of the project resulted in 44.934 t CO₂e of emission reductions during the verification period 01-01-2008 to 31-12-2008.	



Industrie Service

Verification team: • ATL Thomas Kleiser • Auditor Robert Mitterwallner • Auditor Madis Maddison • Trainee Georgios Agrafiotis	Internal Quality Control: Rachel Zhang (Deputy Head of Certification Body “climate and energy”)
---	--



Industrie Service

Abbreviations

AAU	Assigned Amount Unit
ACM	Approved Consolidated Methodology
AIE	Accredited Independent Entity (also verifier)
CAR	Corrective Action Request
ER	Emissions reduction
ERU	Emission Reduction Unit
FAR	Forward Action Request
GHG	Greenhouse Gas
IETA	International Emission Trading Association
IVC	Initial Verification Checklist
KP	Kyoto Protocol
MP	Monitoring Plan
MR	Monitoring Report
PDD	Project Design Document
PP	Project Participant
PVC	Periodical Verification Checklist
SD	Sustainable Development
SIA	Joint Stock Company (in Latvia)
TÜV SÜD	TÜV SÜD Industrie Service GmbH, Carbon Management Service
UAB	Joint Stock Company (in Lithuania)
UNFCCC	UN Framework Convention on Climate Change
VER	Verified Emission Reductions
VVM	Validation and Verification Manual
VP	Verification Protocol
VST	Joint Stock company "VST", power distribution company
WPP	Rudaiciai Wind Power Park Project (Rudaiciai, Lithuania)



Main Documents (referred to in this report)

Methodology (name / version)	N/A	
Registered PDD:	Version PDD 05 April 2008, registration date 28.07.2008	
Revised Monitoring Plan:	N/A	
	Version	Date
Published Monitoring Report	02	20-03-2009
Revised Monitoring Report	02	20-03-2009
Project documentation link:	http://ji.unfccc.int/JI_Projects/DB/418NI844TLJY2WWPJBYEGIKOJVHLSU/Determination/TUEV-SUED1198257066.35/viewDeterminationReport.html	

Table of Contents

1. INTRODUCTION.....	5
1.1 Objective	5
1.2 Scope	5
1.3 GHG Project Description.....	6
2 METHODOLOGY	6
2.1 Verification Process	6
2.2 Verification Team	6
2.3 Review of Documents	7
2.4 On-site Assessment and follow-up Interviews	8
2.5 Quality of Evidence to Determine Emission Reductions	8
2.6 Resolution of Clarification and Corrective and Forward Action Requests	9
2.7 Internal Quality Control	9
3 VERIFICATION RESULTS	10
3.1 FARs from Previous Verification	10
3.2 Project Implementation in accordance with the registered Project Design Document....	11
3.3 Compliance of the Monitoring with the Monitoring Plan	11
3.4 Assessment of Data and Calculation of Greenhouse Gas Emission Reductions	12
4 SUMMARY OF FINDINGS.....	13
5 VERIFICATION STATEMENT	14

Annex 1: Verification Protocol

Annex 2: Information Reference List

1. INTRODUCTION

1.1 Objective

SIA E Kventas from Lithuania has ordered an independent periodic verification services for the Rudaiciai Wind Power Park Project by TÜV SÜD.

The objective of the verification work is to check the compliance of the project with the requirements of paragraph 62 of the CDM Modalities and Procedures. According to this assessment TÜV SÜD shall:

- ensure that the project activity has been implemented and operated as per the registered PDD “Rudaiciai Wind Power Park Project” Version PDD 05 April 2008, and that all physical features (technology, project equipment, monitoring and metering equipment) of the project are in place,
- ensure that the published MR and other supporting documents provided are complete and verifiable and in accordance with applicable JI requirements,
- ensure that actual monitoring systems and procedures comply with the monitoring systems and procedures described in the monitoring plan and the approved methodology,
- evaluate the data recorded and stored as per Monitoring Plan described in PDD.
- The official link to the published documents is:
- <http://ji.unfccc.int/JIITLProject/DB/TIQWJIJGI9DO877CGWWJF8UAU1OIV3/details>

1.2 Scope

The verification scope is defined as an independent and objective review and ex-post determination of the monitored reductions in GHG emissions by the Accredited Independent Entity. The verification is based on the submitted monitoring report, the determined project design documents including its monitoring plan and determination report, initial and first periodic verification report, the applied monitoring methodology, relevant decisions, clarifications and guidance from the CMP and the JISC and any other information and references relevant to the project activity's resulting emission reductions. These documents are reviewed against the requirements of the Kyoto Protocol, the CDM Modalities and Procedures and related rules and guidance.

TÜV SÜD has, based on the requirements in the VVM applied a rule-based approach. The principles of accuracy and completeness, relevance, reliability and credibility were combined with a conservative approach to establish a traceable and transparent verification opinion.

The verification considers both quantitative and qualitative information on emission reductions.

The verification is not meant to provide any consultancy towards the client. However, stated requests for clarifications, corrective and/or forward actions may provide input for improvement of the monitoring activities.

1.3 GHG Project Description

Project activity: "Rudaiciai Wind Power Park Project"
UNFCCC registration number: LT2000002 Reference Number: 0025
Project Participants: Alvydas Naujekas, UAB Veju Spektras, Kaunas
Vidmantas Kniuksta, UAB Veju Spektras, Kaunas
Arturas Strolia, SIA E Kvotas
Location of the project: GPS coordinates N 55.92063 x E 21.13753
Starting date of the crediting period: 01-01-2008

The main feature of the Project is the energy production by wind turbines partially substituting power production in other power plants of Lithuania that run on fossil fuel. By replacing fossil fuel power generation GHG emissions in Lithuania are reduced. The Project consists of 15 units of Enercon E-70 type wind turbines and transformer station which are installed in Kretinga district (Lithuania) in the territory of villages Kiauleikiai, Kveciai and Rudaiciai. The project is constructed and operated by Enercon GmbH, the manufacturer of the wind turbines was Energa. The project is connected to the national grid (operated by Lietuvos Energija) with the 110 kV high-voltage transmission line for supply of generated energy and with 380 V line for back-up feed. There is a 20/110 kV transformer installed with capacity of 31.5 MVA. At the time of the verification the project was fully operational.

2 METHODOLOGY

2.1 Verification Process

The verification process is based on the approach depicted in the Validation and Verification Manual.

Standard auditing techniques have been adopted. The verification team performs first a desk review, followed by an on-site visit which results in a protocol including all the findings. The next step is to close out the findings through direct communication with the PPs and finally prepare the verification report. This verification report and other supporting documents then undergo an internal quality control by the CB "climate and energy" before submission to the JISC under Track 2.

2.2 Verification Team

The appointment of the team takes into account the coverage of the technical areas, sectoral scopes and relevant host country experience for verifying the ER achieved by the project activity in the relevant monitoring period for this verification.



The verification team was consisting of the following members:

Name	Qualification	Coverage of scope	Coverage of technical area	Host country experience
Thomas Kleiser	ATL	☒	☒	☒
Robert Mitterwallner	GHG-A	☒		
Madis Maddison	GHG-A	☒		☒
Georgios Agrafiotis	GHG-T	☒		

Mr. Thomas Kleiser now holding the position of the Head of the Certification Body is also a lead auditor for CDM and JI projects at TÜV SÜD Industrie Service GmbH. In the auditor position he is responsible for the implementation of verification and certification processes for GHG mitigation projects. He has received extensive training in the CDM and JI validation processes and participated already in many CDM and JI project assessments.

Madis Maddison is specialized in auditing of greenhouse gas emission reduction projects. This experience he has gained (in co-operation with TÜV Süd Industrie Service) in determination and verification of Joint Implementation (JI) projects in Estonia, Lithuania, Poland, Romania and Bulgaria.

Robert Mitterwallner is a GHG-Auditor with a background as auditor for environmental management systems (according to ISO 14001), as expert in environmental permit procedures for industrial plants and as expert for environmental impact studies assessment. He is located at TUV SÜD Industrie Service in Munich since 1990. He has received training in the JI determination as well as CDM validation process and applied successfully as GHG Auditor for the scopes energy industries, manufacturing industries, chemical industries, transport, mining/mineral production, metal production, solvent use and waste handling / disposal.

Georgios Agrafiotis is environmental engineer with M.Sc. in Sustainable Resource Management. He has work experience in the field of industrial environmental technology and protection and also in technical environmental projects. As GHG trainee he has been appointed scopes 1, 5 and 13 as per UNFCCC definition. Currently he is involved in more than 15 on-going validation and verification projects.

2.3 Review of Documents

The Monitoring Report version 01 was submitted by the PP which was made publicly available on the UNFCCC website before the verification activities started. The published MR was assessed based on all the relevant documents as listed earlier. The aim of the assessment in the desk review was to verify the completeness of the data and the information presented in the MR. The compliance check of the MR with respect to the monitoring plan depicted in the registered PDD and the applied methodology was carried out. Particular attention to the frequency of measurements, the quality of the metering equipment including calibration requirements, and the quality assurance and quality control procedures was paid. The evaluation of data management and the

quality assurance and quality control system in the context of their influence on the generation and reporting of emission reductions was also carried out. A complete list of all documents reviewed is available in Paragraph 6 "References" of this report.

2.4 On-site Assessment and follow-up Interviews

During 30-03-2009, TÜV SÜD performed a physical site inspection and on-site interviews with project stakeholders to:

- confirm the implementation and operation of the project,
- review the data flow for generating, aggregating and reporting the monitoring parameters,
- confirm the correct implementation of procedures for operations and data collection,
- cross-check the information provided in the MR documentation with other sources (raw data),
- check the monitoring equipments against the requirements of the PDD and the approved methodology, including calibrations, maintenance, etc.,
- review the calculations and assumptions used to obtain the GHG data and ER,
- Identify if the quality control and quality assurance procedures are in place to prevent or correct errors or omissions in the reported parameters.

The following persons were interviewed during this verification activity:

1. Alvydas Naujėkas, UAB Veju Spektras, Kaunas
2. Vidmantas Kniuksta, UAB Veju Spektras, Kaunas
3. Romas Vanagas, Enercon Service Engineer

2.5 Quality of Evidence to Determine Emission Reductions

Among many others the following relevant and reliable evidences have been used by the audit team during the verification process:

1. Reports on produced electricity (printouts from SCADA, IRL #2-4);
2. Copies of monthly power dispatch documents (for both: sold and consumed energy) signed by UAB Veju Spektras and AB Lietuvos Energija (IRL #2-2);
3. Copies of monthly power dispatch documents (for consumed energy) signed by UAB Veju Spektras and AB VST (IRL #2-3);
4. Invoices of electricity sold to the grid (IRL #1-5);
5. Invoices of electricity bought from the grid (IRL #1-6)

Sufficient evidence covering the full verification period in the required frequency is available to validate the figures stated in the final MR. The source of the evidences will be discussed in chapter 3 of this report. Specific cross-checks have been done in cases that further sources were available. All figures in the monitoring report were cross-checked by the audit team against the raw data. The data collection system meets the requirements of the monitoring plan as per the methodology.

2.6 Resolution of Clarification and Corrective and Forward Action Requests

The objective of this phase of the verification process was to resolve any outstanding issues which needed to be clarified for TÜV SÜD's positive conclusion on the GHG emission reduction calculation. The findings raised as Forward Action Requests (FARs) (if any) indicated in previous reports (validation/verification) were clarified during communications between the PP and TÜV SÜD.

To guarantee the transparency of the verification process, the concerns raised, based on the desk review and subsequent on-site audit assessment and follow up interviews, together with the responses given are documented in Annex 1 (verification protocol).

A Corrective Action Request is raised where TÜV SÜD identifies:

- non-conformities in monitoring and/or reporting with the monitoring plan and/or methodology;
- that the evidence provided is not sufficient to prove conformity;
- mistakes in assumptions, data or calculations that impair the ER;
- FARs stated during validation that are not solved until the on-site visit.

A Clarification Request is raised where TÜV SÜD does not have enough information or the information is not clear in order to confirm a statement or data.

A Forward Action Request is raised where TÜV SÜD identifies that monitoring and/or reporting required special attention or adjustments for the next verification period.

Information or clarifications provided as response to a CAR, CL or FAR could also lead to a new CAR.

2.7 Internal Quality Control

As an ultimate step of verification the final documentation including the verification report and the protocol have to undergo an internal quality control by the Certification Body (CB) "climate and energy", i.e. each report has to be finally approved either by the Head of the CB or the Deputy. In case one of these two persons is part of the assessment team the approval can only be given by the other one. If the documents have been satisfactorily approved, the Request for Issuance is submitted to the JISC along with the relevant documents.

3 VERIFICATION RESULTS

In the following sections the results of the verification are stated. The verification results relate to the project performance as documented and described in the final Monitoring Report (20-03-2009, version 02). The verification findings for each verification subject are presented below:

3.1 FARs from Previous Verification

One of the verification tasks is to check remaining issues from the previous determination, verification or issues which are clearly defined for the assessment in the PDD. The Initial and First Periodic Verification Report "Rudaiciai Wind Power Park Project, Lithuania", report no. 1244022, dated 13.05.2009 contained three Forward Action Requests. These FARs were checked and solved. The details are described below.

Forward Action Request #1:

An over-all internal documented procedure for Quality Management shall be introduced and documented in the Quality Management Manual. Responsibilities of all the persons shall be shown.

Response:

The over-all Quality Management Manual (IRL #2-5) was put together in the end of 2008 (after initial verification) and finalized in January 2009.

Conclusion:

The QM Manual exists and is followed by the personnel. Therefore this issue is considered to be solved.

Forward Action Request #2:

There is a need to create an internal documented procedure for the data management system, including raw data archiving and protection measures, data transfer, data processing, work instruction for ERU calculation formulae.

Response:

The procedures KP-GM-01...05 (developed by Project Owner (IRL #2-5)) describe the raw data archiving (paper and digital copies).

Conclusion:

The procedure is described and followed by the personnel. Therefore this issue is considered to be solved.

Forward Action Request #3:

The reading of the back-up meter on the 380 V line should be established through a monthly routine. Even if there was no reported use of power, the malfunctioning of the meter could be discovered earlier.

Response:

The procedure of reading of the back-up meter on the 380 V line is described in standard procedure KP-GM-04 (IRL #2-5).

Conclusion:

The procedure includes manual inspection of the meter and consumed power is declared on-line (via internet) on VST's homepage. The procedure has been followed. Therefore this issue is solved.

3.2 Project Implementation in accordance with the registered Project Design Document

The project is fully implemented according to the description presented in the PDD. The verifier confirms, through the visual inspection that all physical features of the proposed JI project activity including data collecting systems and storage have been implemented in accordance with the registered PDD. The project activity is completely operational and the same has been confirmed on-site.

No data and/or variables presented in the MR differ significantly from the stated in the registered PDD, which would to cause an increment of the ER in this period or in future periods in relation to the estimates in the registered PDD.

3.3 Compliance of the Monitoring with the Monitoring Plan

The monitoring has been carried out in accordance with the monitoring plan contained in the registered PDD. All parameters were monitored and determined as per the Monitoring Plan.

The verification of the parameters required by the monitoring plan is provided as follows:

Data / Parameter:	P_{WPP}
Data unit:	MWh
Description:	Net annual power production at Rudaiciai wind power park project
Source of data used:	P_{WPP} is the difference between produced and consumed power. The calculation is based on the invoices the company send out to the costumer and invoices received from electricity suppliers. Three documents are used as a raw source data origin: • Electricity supplied by the 110 kV line to the grid (IRL #1-5) • Electricity consumed by the 110 kV line from the grid (IRL #1-6) • Electricity consumed by the 380 V line from the distribution network

	(back-up feed) (IRL #1-5) The invoices are based on meter readings. There are installed two 110 kV meters (one main meter and another control meter) and one 380 V meter on back-up feed line, see Annex 1 tables 3.2. Monitoring Instrumentation. All three meters are fully functional and properly calibrated. The data from invoices is transferred manually to ER calculation tool.
Means of verification/Comments:	The amount of electricity delivered to the 110 kV grid and consumed from the 110 kV grid was verified by checking these data on the monthly invoices and confirmed also by monthly power dispatch documents. The amount of electricity consumed via back-up 380 V line was during the monitoring period equal to zero. This was confirmed by visual inspection the meter reading during on-site visit (IRL #2-1 and 2-3).
Cross-check	The power production of the Wind power park was cross-checked by comparing it to the Reports on produced electricity (printouts from SCADA) (IRL #2-4).

3.4 Assessment of Data and Calculation of Greenhouse Gas Emission Reductions

All data has been available and all the parameters have been monitored in accordance with the registered monitoring plan.

The reported data has been cross-checked against other sources when available as explained above in chapter 3.4.

The verifier confirms that the methods and formulae used to obtain the baseline, project and leakage emissions are appropriate. The same have been done in accordance with the methods and formulae described in the registered monitoring plan and applicable methodology.

The verifier confirms that all the emission factors and default values (ex-ante values from PDD) have been correctly justified.

4 SUMMARY OF FINDINGS

The verifier can confirm that the published MR and related documents are complete and verifiable in accordance with the JI requirements. All the findings raised by the verification team, the responses by the PPs and the conclusion from the team are presented in Annex 1, the means of verification and resulting changes in the MR or related documents are stated as follows:

The following CARs are numbered continuously from the previous verification report, so they could be identified uniquely.

CAR#6, means of verification
The signed copies (PDF) of Monitoring Report and printout of underlying ERU calculation tool were delivered to the audit team. Signature of director general Mr. Alvydas Naujėkas was identified on both documents.
CAR#6, changes in the MR or related documents
No change was required in MR or any other document.

CAR#7, means of verification
It was established by audit team that the KP-GM-05 procedure was amended by the requirement of signature the Monitoring Report.
CAR#7, changes in the MR or related documents
No change was required in MR or any other document.

5 VERIFICATION STATEMENT

TÜV SÜD Industrie Service GmbH has performed the periodic verification of the JI project: "Rudaiciai Wind Power Park Project". The verification is based on the currently valid documentation of the UN Framework Convention on Climate Change (UNFCCC).

The management of UAB Veju Spektras is responsible for the preparation of the GHG emissions data and the reported GHG emission reductions on the basis set out within the project's Monitoring Plan indicated in the registered PDD version PDD 05 April 2008 and the applied methodology.

The verifier can confirm that:

- the development and maintenance of records and reporting procedures are in accordance with the registered monitoring plan;
- the project is operated as planned and described in the validated and registered project design document;
- that the installed equipment being essential for generating emission reduction runs reliably and is calibrated appropriately;
- that the monitoring system is in place and generates GHG emission reductions data;
- that the GHG emission reductions are calculated without material misstatements;
- that the monitoring plan in Monitoring Report is as per the registered PDD;
- that the monitoring plan in registered PDD is as per the applied methodology.

Our opinion refers to the project's GHG emissions and resulting GHG emission reductions reported both determined due to the valid and registered project's baseline, its monitoring plan and its associated documents.

Based on the information we have seen and evaluated, we confirm the following statement:

Reporting period: From 01-01-2008 to 31-12-2008

Verified emissions in the above reporting period:

Baseline emissions:	44 934	t CO _{2e}
Project emissions:	0	t CO _{2e}
Leakage emission:	0	t CO _{2e}
Emission reductions:	44 934	t CO _{2e}

Munich, 09-08-2009



Rachel Zhang
Deputy Head of Certification body "climate and energy"

Munich, 09-08-2009



Thomas Kleiser
Assessment Team Leader

Periodic Verification
of Rudaiciai Wind Power Park in Lithuania



Industrie Service

Annex 1

Verification Protocol

Verification Protocol

Project Title: Rudaiciai Wind Power Park Project

Date of Completion: 09.08.2009

Number of Pages: 41



Industrie Service

Input by audit team in blue colour

Table of Contents

- 1. Project Activity Implementation
 - 1.1. Technology
 - 1.2. Organization
 - 1.3. Quality Management System
 - 1.4. Remaining FARs from previous Verifications (or forwarded issues of validation report)
- 2. Data Management System
 - 2.1. Description
 - 2.2. Raw Data Archiving and Protection measures
 - 2.3. Data transfer
 - 2.4. Data Processing
- 3. Monitoring Plan Implementation
 - 3.1. List of Parameter to be monitored
 - 3.2. Monitoring Instrumentation
 - 3.2.1. Power meter 1
 - 3.2.2. Power meter 2
 - 3.2.3. Power meter 3
 - 3.3. Sampling Information
 - 3.3.1. Sampling Point i
- 3.4. Accounting information
 - 3.4.1. Account 1
 - 3.4.2. Account 2
 - 3.4.3. Account 3
- 3.5. External Data
- 3.6. Others
- 4 Data Verification
 - 4.1 Internal Review
 - 4.2 Usage of default values
 - 4.3 Reproducibility
 - 4.4 Peculiarities
 - 4.5 Reliability and Plausibility
 - 4.5 Completeness and Correctness
- 5 Additional requirements
- 6 Data Reporting
- 7 Compilation and Resolutions of CARs, CRs and FARs

Verification Protocol

Project Title: Rudaiciai Wind Power Park Project

Date of Completion: 09.08.2009

Number of Pages: 41



Industrie Service

1. Project Activity Implementation

1.1. Technology

PDD	Verified Situation	Conclusion						
Location (s) <i>add additional sites if necessary</i>								
Description / Address:	<i>The address of the Veju Spektras office is: Dvaro 4a, Kretinga, Lithuania</i>	☒						
GSP coordinates:	<i>GSP coordinates of the main transformer site are: N 55.92063 x E 21.13753</i>	☒						
Technical Equipment – Main Components <i>add additional components if necessary</i>								
<i>Component 1: Enercon E-70 type wind turbines (15 units)</i> <i>Description</i>	<i>15 units of Enercon E-70 type wind turbines are installed Kretinga district in the territory of villages Kiauleikiai, Kveciai and Rudaiciai. There are access roads built to all the generators.</i>	☒						
<i>Component 1: Enercon E-70 type wind turbines (15 units)</i> <i>Technical Features</i>	<i>15 units of Enercon E-70 type wind turbines have each capacity of 2,0 MW. Turbines are manufactured by German company Enercon GmbH. Average monthly production during year 2007 of one turbine was 345 MWh/month and the whole wind farm was 5 174 MWh/month.</i> <i>Installation works were carried out by Enercon GmbH. Turbines were put into operation in 13 sequences: starting from 10.10.2006 until 16.02.2007.</i> <i>Generators started to generate electricity when the commissioning has started. So the start of operation should be considered the start day of commissioning.</i> <table> <tr> <th>WT No</th><th>Serial No</th><th>Start of Commissioning</th></tr> <tr> <td>1</td><td>78907</td><td>12.10.2006</td></tr> </table>	WT No	Serial No	Start of Commissioning	1	78907	12.10.2006	☒
WT No	Serial No	Start of Commissioning						
1	78907	12.10.2006						

Verification Protocol

Project Title: Rudaiciai Wind Power Park Project

Date of Completion: 09.08.2009

Number of Pages: 41



Industrie Service

PDD	Verified Situation	Conclusion
	2 78908 10.10.2006 3 78909 10.10.2006 4 78910 10.11.2006 5 78911 09.11.2006 6 78912 15.11.2006 7 78913 24.11.2006 8 78914 20.11.2006 9 78915 24.11.2006 10 78916 20.12.2006 11 78917 11.12.2006 12 78918 31.01.2007 13 78919 18.01.2007 14 78920 23.01.2007 15 78921 16.02.2007	
<i>Component 2: Transformer station Description</i>	<i>Transformer station is situated in Kiauleikiai village near turbines ## K1 – K3.</i>	☒
<i>Component 2: Transformer station Technical Features</i>	<i>Transformer station with incoming voltage of 20 kV and outgoing voltage of 110 kV has 31.5 MVA capacity.</i> <i>Installation works were carried out by Enercon GmbH (for WF's part) and ETS (for Lietuvos Energa's part). Transformer station was commissioned 11.12.</i>	☒
Operation Status during verification <i>add additional sites if necessary</i>		
<i>Approvals / Licenses</i>	<i>Commissioning Acts (which also serve as Use Permits according to Lithuanian com-</i>	☒

Verification Protocol

Project Title: Rudaiciai Wind Power Park Project

Date of Completion: 09.08.2009

Number of Pages: 41



Industrie Service

PDD	Verified Situation	Conclusion
N/A	<i>mon practice) exist for all the components of the WF. Permits for electricity generation issued by Lithuanian Ministry of Economy.</i>	
Actual Operation Status N/A	Under construction ☐ In operation ☒ Out of operation ☐ Reason (when out of operation):	☒
Remarks to Special Operational Status During the Verification Period	<i>No shutdowns or failures occurred during the verification period (RD# 1-7 and RD# 2-4).</i>	☒

Verification Protocol

Project Title: Rudaiciai Wind Power Park Project

Date of Completion: 09.08.2009

Number of Pages: 41



Industrie Service

1.2. Organization

PDD	Verified Situation	Conclusion
Project Participant (s) <i>add additional participants if necessary</i>		
Entity / Responsible person:	<i>UAB Veju Spektras is the project owner, represented by Mr. Alvydas Naujekas.</i> <i>The buyer is SIA "E kvotas", settled in Rezekne, Latvia (Rigas str. 1), represented by Mr. Arturas Stroila.</i> <i>UAB "ENERCON Services Lietuva" represented by Mr. Rainer Splieth, Managing Director, is responsible for the operation and maintenance of Rudaiciai Wind Park Project. The person responsible on site is Mr. Romas Vanagas.</i> <i>The Monitoring Report has been compiled by consultant UAB COWI Baltic.</i>	☒
JI Project management:	<i>UAB Veju Spektras (Mr. Alvydas Naujekas) is responsible for the JI project management.</i>	☒

Verification Protocol

Project Title: Rudaiciai Wind Power Park Project

Date of Completion: 09.08.2009

Number of Pages: 41



Industrie Service

1.3. Quality Management System

PDD	Verified Situation	Conclusion
Quality Management Manual:	<i>The Quality Management Manual (RD# 2-5) exists and includes following Procedures and documents:</i> • <i>KP-ADM-01: Contract Signature Procedure</i> • <i>KP-GM-01: Power Production-Consumption Document Signature Procedure with Lietuvos Energija</i> • <i>KP-GM-02: Power Production Document Signature Procedure with Lietuvos Energija</i> • <i>KP-GM-03: Power Consumption Document Signature Procedure with Lietuvos Energija</i> • <i>KP-GM-04: Power Production-Consumption Document Signature Procedure with VST</i> • <i>KP-GM-05: CO2 ERU Calculation</i> • <i>Job Descriptions for every worker and</i> • <i>Work safety instructions.</i>	☒
Responsibilities:	<i>Responsibilities are shown in the Procedure descriptions</i>	☒
Qualification and Training:	<i>No training was performed during 2008</i>	☒
Implementation of QM-system	<i>The over-all Quality Management Manual (RD# 2-5) was put together in the end of 2008 (after initial verification) and finalized in January 2009. However the individual procedures existed before and were followed by the personnel.</i>	☒

Verification Protocol

Project Title: Rudaiciai Wind Power Park Project

Date of Completion: 09.08.2009

Number of Pages: 41



Industrie Service

1.4. Remaining FARs from previous Verifications (or forwarded issues of validation report)

Forward Action Requests by audit team	Summary of project owner response	Audit team conclusion
<u>FAR#1</u> <i>An over-all internal documented procedure for Quality Management shall be introduced and documented in the Quality Management Manual. Responsibilities of all the persons shall be shown.</i>	<i>The over-all Quality Management Manual was put together in the end of 2008 (after initial verification) and finalized in January 2009. (RD# 2-5)</i>	<i>The QM Manual exists and is followed by the personnel. Therefore this issue is considered to be solved.</i> ☑
<u>FAR#2</u> <i>The amount of data is small at the present. But for the future there is a need to create an internal documented procedure for the data management system, including raw data archiving and protection measures, data transfer, data processing, work instruction for ERU calculation formulae.</i>	<i>The procedures KP-GM-01...05 describe the raw data archiving (paper and digital copies). (RD# 2-5)</i>	<i>The procedure is described and followed by the personnel. Therefore this issue is considered to be solved.</i> ☑
<u>FAR#3</u> <i>The reading of the back-up meter on the 380 V line should be established through a monthly routine. Even if there was no reported use of power, the malfunctioning of the meter could be discovered earlier.</i>	<i>The procedure of reading of the back-up meter on the 380 V line is described in standard procedure KP-GM-04 (RD# 2-5).</i>	<i>The procedure includes manual inspection of the meter and consumed power is declared on-line (via internet) on VST's homepage. The procedure has been followed. Therefore this issue is considered to be solved.</i> ☑

Verification Protocol

Project Title: Rudaiciai Wind Power Park Project

Date of Completion: 09.08.2009

Number of Pages: 41



Industrie Service

2. Data Management System

2.1. Description

Structure of raw data archiving				
Describe all the different data collection systems				
Type	Name	Responsible	Procedures	Comments
Manual 1	Monthly power dispatch confirmation form (Procedures KP-GM-01, KP-GM-02 and KP-GM-03 (RD# 2-2 and RD# 2-5)).	Project Manager, UAB Veju Spektras	An inspector from AB Lietuvos energija, together with a representative from UAB Veju spektras checks the commercial power metering device and writes down the dispatched power quantity on the dispatch confirmation document.	Signed by Managing director of Veju Spektras, Monthly ☒
Manual 2	Monthly power consumption confirmation form (Procedure KP-GM-04 (RD# 2-3 and RD# 2-5)).	Project Manager, UAB Veju Spektras	The back-up meter (380 V) is checked once in 1 month by representative of Veju Spektras. This reading is declared to VST (the distribution company) on-line via Internet.	☒
Accounting 1	Monthly invoice of electricity delivered to the grid to Lietuvos Energija (Procedure KP-GM-02 (RD# 1-5 and RD# 2-5)).	Chief Accountant, UAB Veju Spektras	Monthly invoices of electricity delivered to the grid are issued.	Signed by Managing director of Veju Spektras Monthly ☒
Accounting 2	Monthly invoice of	Lietuvos Energija	Monthly invoices of electricity	Monthly

Verification Protocol

Project Title: Rudaiciai Wind Power Park Project

Date of Completion: 09.08.2009

Number of Pages: 41



Industrie Service

	<i>electricity consumed from the grid of Lietuvos Energija (Procedure KP-GM-03 (RD# 1-6 and RD# 2-5).</i>		<i>consumed from the grid are recieved.</i>	☒
<i>Accounting 3</i>	<i>Monthly invoice of electricity consumed from the distribution network of VST.</i>	<i>VST UAB</i>	<i>Monthly invoices of electricity consumed from the distribution network are received.</i>	<i>Monthly. As no consumption through this meter has yet occurred – no invoices have been received, which can be seen from reading confirmation (RD# 2-3).</i> ☒
Key Reporting Risks: <i>The risk of material misstatement is minimal as both power companies (Lietuvos Energija and VST) are nationwide operating companies and invoicing is strongly standardised. As the manual reading of back-up meter is done monthly now there is a very low risk of misstatement of data.</i> Risk Classification: <i>The risk of misstatement of production and consumption data is low.</i> Further Remarks: <i>No further remarks.</i>				

2.2. Raw Data Archiving and Protection measures

Name	Description of data archiving and protection measures	Risks and comments	Concl.
<i>Form a</i>	<i>All power dispatch confirmation forms, reading declaration forms and invoices are archived in the Veju Spektras's book keeping archive. No separate ERU calculation archive exist.</i>	<i>The amount of data by the second verification period is not large and the risk for losing the data is low.</i>	☒
<i>Computer a</i>	<i>After power dispatch document is signed by both parties, a repre-</i>	<i>See the comment above.</i>	☒

Verification Protocol

Project Title: Rudaiciai Wind Power Park Project

Date of Completion: 09.08.2009

Number of Pages: 41



Industrie Service

	<i>representative of UAB Veju Spektras transfers manually the figures of dispatched power into the monitoring sheet in the office computer of Veju Spektras.</i>		
Key Reporting Risks: <i>The procedure for archiving the data is not described, which can evoke a misstatement risk, however the amount of data is small and can be easily retrieved from archives of power companies.</i>			☒
Risk Classification: <i>The risk of misstatement of production data is low.</i>			
Further Remarks: <i>No further remarks.</i>			

Verification Protocol

Project Title: Rudaiciai Wind Power Park Project

Date of Completion: 09.08.2009

Number of Pages: 41



Industrie Service

2.3. Data transfer

Description of data transfer from raw data archiving to calculation tool			
Name	Description and responsibilities	Risks and comments	Concl.
<i>Form a</i>	<i>After it is signed by both parties, a representative of UAB Veju Spektras transfers the figures from signed power dispatch document the monitoring sheet.</i>	<i>There is a small risk when transferring manually the production and consumption data to the monitoring sheet. However it can be easily double-checked by comparing totals on Lietuvos Energija and VST web-sites.</i>	☒
Key Reporting Risks: <i>The calculation formulas are protected and no further risk exists.</i> Risk Classification: <i>The risk of manual transfer of data is low. It can be easily double-checked by comparing totals on Lietuvos Energija and VST web-sites</i> Further Remarks: <i>No further remarks.</i>			☒

2.4. Data Processing

Description of data processing from transferred data to final results in the calculation tool			
Step	Description	Risks and comments	Concl.
Consistency	<i>All the column headings are consistent with PDD and Methodology and are easily traceable to the raw data</i>	<i>Units of Net annual power production shall be MWh.</i>	☒

Verification Protocol

Project Title: Rudaiciai Wind Power Park Project

Date of Completion: 09.08.2009

Number of Pages: 41



Industrie Service

Calculation Tool description	<i>In general the calculation tool is transparent and easy to understand. The issuing date and revision number are missing. For every month the Power produced (column B), Power supplied to the grid (column C) and Power received from the grid (column D) via main 110 kV meter are inserted. Then the balance between Power supplied to the grid and Power received from the grid (column C minus column D) is calculated in column E. Following the Emission reduction in tonnes of CO2 is calculated by multiplying the balance in column E by fixed emission factor 0.626 tCO2/MWh in column G. (RD No: 1-3)</i>		☒
Transformation from transferred data to useable data	<i>All the data transferred to the sheet is directly useable</i>		☒
Elimination of not plausible data	<i>N/A</i>		☒
Transformation from useable data to input data for further calculation	<i>N/A</i>		☒
Ex-ante data	<i>Ex-ante fixed emission factor 0.626 tCO2/MWh is used.</i>		☒
Default parameter	<i>N/A</i>		☒
Formulae check	<i>Yes</i>		☒
Rounding functions	<i>N/A, no rounding formulae are included</i>		☒
Calculation tool changes and pro-	<i>The formulas are protected in calculation tool</i>		☒

Verification Protocol

Project Title: Rudaiciai Wind Power Park Project

Date of Completion: 09.08.2009

Number of Pages: 41



Industrie Service

tection measures			
Key Reporting Risks: <i>There are no significant risks in data processing.</i>			☒
Risk Classification: <i>The calculation tool is very easy to calculate and crosscheck, therefore the risk is low</i>			
Further Remarks: <i>No further remarks.</i>			

Verification Protocol

Project Title: Rudaiciai Wind Power Park Project

Date of Completion: 09.08.2009

Number of Pages: 41



Industrie Service

3. Monitoring Plan Implementation

3.1. List of Parameter to be monitored

ID-PDD	ID-Meth.	ID-Internal	Description	Conclusion
Instrumentation <i>insert all components that are metered by instruments as necessary due to PDD and applied methodology version</i>				
P_{WPP}	-	-	Net annual power production at Rudaiciai wind power park project. P_{WPP} is the difference between produced and consumed power at Rudaiciai wind power park project in MWh.	☒
-	-	-	Electricity supplied by the 110 KV line to the grid	<u>Go to table</u> <u>Go to table</u> ☒
-	-	-	Electricity consumed by the 110 kV line from the grid	<u>Go to table</u> <u>Go to table</u> ☒
-	-	-	Electricity consumed by the 380 V line from the distribution network (back-up feed)	<u>Go to table</u> ☒
-				
Sampling <i>not applicable</i>				
-				
Accounting <i>insert all components that are accounted as necessary due to PDD and applied methodology version</i>				
-	-	Invoice to AB Lietuvos energija	Invoice issued by Vejo Spektras (RD# 1-5).	☒
		Invoice from AB Lietuvos	Invoice issued by Lietuvos Energija (RD# 1-6).	☒

Verification Protocol

Project Title: Rudaiciai Wind Power Park Project

Date of Completion: 09.08.2009

Number of Pages: 41



Industrie Service

ID-PDD	ID-Meth.	ID-Internal	Description	Conclusion
		<i>energija</i>		
-		<i>Invoice from VST</i>	<i>Invoice issued by VST. As no consumption through this meter has yet occurred – no invoices have been received (RD# 2-3).</i>	☒
External Data <i>not applicable</i>				
-				
Others <i>not applicable</i>				
-				

Verification Protocol

Project Title: Rudaiciai Wind Power Park Project

Date of Completion: 09.08.2009

Number of Pages: 41



Industrie Service

3.2. Monitoring Instrumentation

3.2.1. Power meter 1

[Back to 3.1.](#) [List of Parameter to be monitored](#)

PDD	Verified Situation	Conclusion
Instrumentation Information <i>list all different instruments which have been used during the monitoring period; use a separate table for each single instrument</i>		
ID-PDD:	Main meter. Metering of electricity supplied and consumed by the 110 KV line	☑
ID-Internal: T-101	Metering of electricity supplied and consumed by the 110 KV line	☑
Data to be Measured:	electricity supplied and consumed by the 110 KV line	☑
Data Logging:	-	☑
Archiving of Raw Data:	The data is daily recorded on the Lietuvos Energija's dispatcher centre server in Vilnius via direct optical cable system.	☑
Measurement Principle:	Two directional	☑
Period of Operating Time:	Begin: 02.10.2006. End: until now	☑
Instrument Type:	Electronic	☑
Serial Number:	289135	☑
Manufacturer Model Nr.:	ELGAMA ELECTRONIKA, EPQS 113.09.04 (made in Lithuania) (RD No: 2-10).	☑
Specific Location:	Separate board at the territory of transformer station	☑
Measurement Range:	Current threshold 0,1 % I_{ref}	☑
Measurement Unit:	MWh	☑
Calibration:	Calibrated 29.09.2005	☑

Verification Protocol

Project Title: Rudaiciai Wind Power Park Project

Date of Completion: 09.08.2009

Number of Pages: 41



Industrie Service

Required Calibration Frequency:	<i>Lithuanian national requirement for calibration of three-phase meters is 8 years</i>		☒
Uncertainty Level:	$\pm 0.14\%$ power and ± 0.07 s/24h time		☒
Monitoring & Calculation			
Reading Frequency:	<i>Continuously</i>		☒
Recording Frequency:	<i>Monthly</i>		☒
Trouble Shooting:	<i>Occurred troubles will be recorded in the Lietuvos Energija's dispatcher centre, who is also responsible to report all troubles.</i>		☒
Inspection Results During Verification			
Operation of Instrumentation	Method of Verification	Verification Results	Conclusion
Measuring Principle:	<i>According to Monitoring Plan the electricity needs to be re-recorded monthly.</i>	<i>The requirements of the Monitoring Plan are fulfilled. The meter readings are only used for cross-check. The main calculation is based on the invoices the company send out to the customer and invoices received from electricity suppliers.</i>	☒
Installation:	<i>The meter is installed at the separate locked board. Only few people are allowed the access.</i>	<i>The meter is installed properly and is working normal..</i>	☒
Functionality:	<i>The meter is functioning</i>		☒
Quality assurance:	<i>The meter is calibrated and sealed.</i>	<i>The calibration certificates have were checked and verified during previous on-site visit. The seals are solid (RD# 2-1).</i>	☒
Maintenance:			☒
Key Reporting Risks: <i>The meter has control-meter (see the next table). The measurements of the meter are controlled by the responsible project manager monthly. Malfunctions of the meter are detected easily through distance control system by</i>			☒

Verification Protocol

Project Title: Rudaiciai Wind Power Park Project

Date of Completion: 09.08.2009

Number of Pages: 41



Industrie Service

<i>Lietuvos Energija.</i> <i>The meter readings are transferred (via optical cable system) to Lietuvos Energija, who sends monthly reports to Veju Spektras. Misreadings can be cross checked and detected easily.</i> Risk Classification: <i>The risk of malfunctioning is low, as the meter is read and monitored on-line constantly and every possible malfunction would be discovered immediately.</i> Further Remarks: <i>No further remarks.</i>	
---	--

Back to 3.1. List of Parameter to be monitored

Verification Protocol

Project Title: Rudaiciai Wind Power Park Project

Date of Completion: 09.08.2009

Number of Pages: 41



Industrie Service

3.2.2. Power meter 2

Back to 3.1. List of Parameter to be monitored

PDD	Verified Situation	Conclusion
Instrumentation Information <i>list all different instruments which have been used during the monitoring period; use a separate table for each single instrument</i>		
ID-PDD:	<i>Control meter (for main meter). Metering of electricity supplied and consumed by the 110 KV line</i>	☒
ID-Internal: T-101/D	<i>Metering of electricity supplied and consumed by the 110 KV line</i>	☒
Data to be Measured:	<i>electricity supplied and consumed by the 110 KV line</i>	☒
Data Logging:	-	☒
Archiving of Raw Data:	<i>The data is daily recorded on the Lietuvos Energija's dispatcher centre server in Vilnius via direct optical cable system</i>	☒
Measurement Principle:	<i>Two directional</i>	☒
Period of Operating Time:	<i>Begin: 02.10.2006, the commissioning date of meters is still unclear. End: until now.</i>	☒
Instrument Type:	<i>Electronic</i>	☒
Serial Number:	<i>289203</i>	☒
Manufacturer Model Nr.:	<i>ELGAMA ELECTRONIKA, EPQS 113.09.04 (made in Lithuania) (RD No: 2-10)</i>	☒
Specific Location:	<i>Separate board at the territory of transformer station</i>	☒
Measurement Range:	<i>Current threshold 0,1 % I_{ref}</i>	☒
Measurement Unit:	<i>MWh</i>	☒
Calibration:	<i>Calibrated 29.09.2005.</i>	☒

Verification Protocol

Project Title: Rudaiciai Wind Power Park Project

Date of Completion: 09.08.2009

Number of Pages: 41



Industrie Service

Required Calibration Frequency:	<i>Lithuanian national requirement for calibration of three-phase meters is 8 years</i>		☒
Uncertainty Level:	$\pm 0.15\%$ power and ± 0.09 s/24h time		☒
Monitoring & Calculation			
Reading Frequency:	<i>Continuously</i>		☒
Recording Frequency:	<i>Monthly</i>		☒
Trouble Shooting:	<i>Occurred troubles will be recorded in the Lietuvos Energija's dispatcher centre, who is also responsible to report all troubles.</i>		☒
Inspection Results During Verification			
Operation of Instrumen- tation	Method of Verification	Verification Results	Conclusion
Measuring Principle:	<i>According to Monitoring Plan the electricity needs to be re- corded monthly.</i>	<i>The requirements of the Monitoring Plan are fulfilled. The meter readings are only used for cross-check of main meter.</i>	☒
Installation:	<i>The meter is installed at the separate locked board. Only few people are allowed the access.</i>	<i>The meter is installed properly and is working normal.</i>	☒
Functionality:	<i>The meter is functioning</i>		☒
Quality assurance:	<i>The meter is calibrated and sealed.</i>	<i>The calibration certificates have were checked and verified during previous on-site visit. The seals are solid (RD# 2-1).</i>	☒
Maintenance:			☒
Key Reporting Risks: <i>The measurements of the meter are controlled by the responsible project manager monthly. Mal- functions of the meter are detected easily through distance control system by Lietuvos Energija. The meter readings are transferred (via optical cable system) to Lietuvos Energija, who sends monthly reports to Veju Spektras.</i>			☒

Verification Protocol

Project Title: Rudaiciai Wind Power Park Project

Date of Completion: 09.08.2009

Number of Pages: 41



Industrie Service

Misreadings can be cross checked and detected easily.

Risk Classification: *The risk of malfunctioning is low, as the meter is read and monitored on-line constantly and every possible malfunction would be discovered immediately.*

Further Remarks: *No further remarks.*

[Back to 3.1. List of Parameter to be monitored](#)

Verification Protocol

Project Title: Rudaiciai Wind Power Park Project

Date of Completion: 09.08.2009

Number of Pages: 41



Industrie Service

3.2.3. Power meter 3

Back to 3.1. List of Parameter to be monitored

PDD	Verified Situation	Conclusion
Instrumentation Information <i>list all different instruments which have been used during the monitoring period; use a separate table for each single instrument</i>		
ID-PDD:	<i>Back-up feed (emergency) meter. Metering of electricity consumed by the 380 V line from VST distribution network</i>	☒
ID-Internal: Emergency feeding meter	<i>Metering of electricity consumed by the 380 V line from VST distribution network</i>	☒
Data to be Measured:	<i>electricity consumed by the 380 V line</i>	☒
Data Logging:	-	☒
Archiving of Raw Data:	<i>The data is recorded manually once in 6 months by project manager of Veju Spektras</i>	☒
Measurement Principle:	<i>One directional</i>	☒
Period of Operating Time:	<i>Begin: 31.12.2006, the commissioning date of meters is still unclear. End: until now</i>	☒
Instrument Type:	<i>Electronic three-phase meter</i>	☒
Serial Number:	<i>282688</i>	☒
Manufacturer Model Nr.:	<i>ELGAMA ELECTRONIKA, EMT 132.16.6 (made in Lithuania) (RD No: 2-10)</i>	☒
Specific Location:	<i>On the pole near the closest VST line. GPS coordinates: N 55.92021 x E 21.14702</i>	☒
Measurement Range:	<i>Current threshold 0,4 % I_{ref}</i>	☒
Measurement Unit:	<i>kWh</i>	☒
Calibration:	<i>Calibrated 06.09.2005</i>	☒
Required Calibration Frequency:	<i>Lithuanian national requirement for calibration of three-phase meters is 8 years</i>	☒

Verification Protocol

Project Title: Rudaiciai Wind Power Park Project

Date of Completion: 09.08.2009

Number of Pages: 41



Industrie Service

Uncertainty Level:	± 0.14% power and ± 0.07 s/24h time		☒
Monitoring & Calculation			
Reading Frequency:	Continuously		☒
Recording Frequency:	Semi-annually		☒
Trouble Shooting:	Occurred troubles will be recorded by Veju Spektras, who is also responsible to report all troubles to VST.		☒
Inspection Results During Verification			
Operation of Instrumentation	Method of Verification	Verification Results	Conclusion
Measuring Principle:	According to Monitoring Plan the electricity needs to be recorded monthly.	The requirements of the Monitoring Plan are not completely fulfilled. But this meter is rarely used; during the whole operation period of the WF it has not been used at all.	☒
Installation:	The meter is installed at the separate locked board. Only few people are allowed the access.	The meter is installed properly and is working normal. Single line diagram describing installation of meters.	☒
Functionality:	The meter is functioning	The reading during the site visit was recorded 13255 kWh	☒
Quality assurance:	The meter is calibrated and sealed.	The calibration certificates have been checked and verified during previous on-site visit. The seals are solid (RD# 2-1).	☒
Maintenance:			☒
Key Reporting Risks: The meter does not have a control-meter. The measurements of the meter are controlled by the responsible project manager semiannually. Malfunctions of the meter can be detected visually during the inspection of the meter. The probability that this back-up feed is required is very low. It requires malfunctioning of both 110 kV lines (Rudaiciai WF –			☒

Verification Protocol

Project Title: Rudaiciai Wind Power Park Project

Date of Completion: 09.08.2009

Number of Pages: 41



Industrie Service

Palanga direction and Rudaiciai WF – Sventoj direction). And even then the power supplied through this connection will be used only for the own needs of 20 kV side of control building.

Risk Classification: *The risk of malfunctioning is low, however it would be discovered only during monthly checkup.*

Further Remarks: *No further remarks*

[Back to 3.1. List of Parameter to be monitored](#)

Verification Protocol

Project Title: Rudaiciai Wind Power Park Project

Date of Completion: 09.08.2009

Number of Pages: 41



Industrie Service

3.3. Sampling Information

3.3.1. Sampling Point i

Not applicable

[Back to 3.1. List of Parameter to be monitored](#)

Verification Protocol

Project Title: Rudaiciai Wind Power Park Project

Date of Completion: 09.08.2009

Number of Pages: 41



Industrie Service

3.4. Accounting information

3.4.1. Account 1

Back to 3.1. List of Parameter to be monitored

PDD	Verified Situation	Conclusion
Accounting Information <i>list all significant accounted components which have been used during the monitoring period; use a separate table for each single component</i>		
ID-PDD:	P_{WPP}	☒
ID-Internal:	-	
Description of Accounted Component:	<i>Invoice of electricity delivered to the grid of Lietuvos Energija. (RD No: 1-5)</i>	☒
Accounting Unit:	<i>Veju Spektras's business coordinator is responsible to send out the invoices.</i>	☒
Quality Assurance Measures / System:	<i>Two original invoices are issued: one to Lietuvos Energija, another is stored in the Kretinga office by chief accountant.</i>	☒
Account Archived:	<i>October 2006 ~ today</i>	☒
Account Credible / in Line with PDD:	-	☒
Key Reporting Risks: <i>The risk of material misstatement is minimal as Lietuvos Energija is nationwide operating company and invoicing is based on power dispatch documents.</i> Risk Classification: <i>The risk of misstatement of production data is low.</i> Further Remarks: <i>No further remarks.</i>		☒

Verification Protocol

Project Title: Rudaiciai Wind Power Park Project

Date of Completion: 09.08.2009

Number of Pages: 41



Industrie Service

3.4.2. Account 2

Back to 3.1. List of Parameter to be monitored

PDD	Verified Situation	Conclusion
<i>Accounting Information list all significant accounted components which have been used during the monitoring period; use a separate table for each single component</i>		
ID-PDD:	P_{WPP}	☒
ID-Internal:	-	
Description of Accounted Component:	<i>Invoice of electricity consumed from the grid of Lietuvos Energija. (RD No: 1-6)</i>	☒
Accounting Unit:	<i>Lietuvos Energija is responsible to send out the invoices.</i>	☒
Quality Assurance Measures / System:	<i>The original invoice is stored in the Kretinga office by chief accountant.</i>	☒
Account Archived:	<i>October 2006 ~ today</i>	☒
Account Credible / in Line with PDD:	-	☒
Key Reporting Risks: <i>The risk of material misstatement is minimal as Lietuvos Energija is nationwide operating company and invoicing is strongly standardised.</i> Risk Classification: <i>The risk of misstatement of consumption data is low.</i> Further Remarks: <i>No further remarks.</i>		☒

Verification Protocol

Project Title: Rudaiciai Wind Power Park Project

Date of Completion: 09.08.2009

Number of Pages: 41



Industrie Service

3.4.3. Account 3

Back to 3.1. List of Parameter to be monitored

PDD	Verified Situation	Conclusion
<i>Accounting Information list all significant accounted components which have been used during the monitoring period; use a separate table for each single component</i>		
ID-PDD:	P_{WPP}	☑
ID-Internal:	-	
Description of Accounted Component:	<i>Invoice of net electricity consumed from the grid of VST via back-up feed.</i>	☑
Accounting Unit:	<i>VST is responsible to send out the invoices</i>	☑
Quality Assurance Measures / System:	<i>The original invoice is stored in the Kretinga office by chief accountant.</i>	☑
Account Archived:	<i>As no electricity has been used through this line – no invoices have received yet.</i>	☑
Account Credible / in Line with PDD:	-	☑
Key Reporting Risks: <i>The risk of material misstatement is minimal as VST is nationwide operating company and invoicing is strongly standardised. Now the manual reading of back-up meter is done monthly and there is remaining a very low risk of misstatement of data.</i> Risk Classification: <i>The risk of misstatement of consumption data is low.</i> Further Remarks: <i>No further remarks</i>		☑

Verification Protocol

Project Title: Rudaiciai Wind Power Park Project

Date of Completion: 09.08.2009

Number of Pages: 41



Industrie Service

[Back to 3.1. List of Parameter to be monitored](#)

Verification Protocol

Project Title: Rudaiciai Wind Power Park Project

Date of Completion: 09.08.2009

Number of Pages: 41



Industrie Service

3.5. External Data

Not applicable as no external data is used.

[Back to 3.1. List of Parameter to be monitored](#)

Verification Protocol

Project Title: Rudaiciai Wind Power Park Project

Date of Completion: 09.08.2009

Number of Pages: 41



Industrie Service

3.6. Others

Not applicable

[Back to 3.1. List of Parameter to be monitored](#)

Verification Protocol

Project Title: Rudaiciai Wind Power Park Project

Date of Completion: 09.08.2009

Number of Pages: 41



Industrie Service

4 Data Verification

4.1 Internal Review

Description and performance of internal review			
	Description	Comments	Concl.
Procedure	<i>The procedure is described in standard document KP-GM-05 (RD# 2-5). Additionally for the quality assurance, a consulting company (COWI Baltic) is contracted by buyer SIA Kvotas to revise the monitoring reports. Revision includes the desk review of the documents provided by Veju Spektras.</i>		☒
Documentation	<i>The Monitoring Report is issued and signed by (COWI Baltic).</i>		☒
Responsibilities	<i>Director of Veju Spektras Mr. Alvydas Naujėkas has approved the Monitoring Report.</i>	<i>Although, no written evidence exist. CAR#6. Corrective Action Request The Monitoring Report should be approved in written and evidence presented CAR#7. Corrective Action Request The procedure of signature shall be established in KP-GM-05</i>	CAR#6 CAR#7 ☒
Key Reporting Risks: <i>During internal review the completeness and correctness of the data is crosschecked.</i> Risk Classification: <i>The risk that incorrect data will pass the internal review procedure is low, as review is conducted by independent person.</i> Further Remarks: <i>The Monitoring Report shall be approved in written (CAR#6) and respective procedure developed (CAR#7)</i>			☒

Verification Protocol

Project Title: Rudaiciai Wind Power Park Project

Date of Completion: 09.08.2009

Number of Pages: 41



Industrie Service

Verification Protocol

Project Title: Rudaiciai Wind Power Park Project

Date of Completion: 09.08.2009

Number of Pages: 41



Industrie Service

4.2 Usage of default values

No default values are used.

Verification Protocol

Project Title: Rudaiciai Wind Power Park Project

Date of Completion: 09.08.2009

Number of Pages: 41



Industrie Service

4.3 Reproducibility

Description and performance of the assessment			
	Description	Comments and Results	Concl.
Procedure	<i>The raw data from power dispatch documents and invoices was entered into the calculation sheet.</i>	<i>The same result was achieved as in the Monitoring Report.</i>	☒
Key Reporting Risks: <i>The data can be easily reproduced</i>			☒
Risk Classification: <i>The risk of missing the reproducibility is low</i>			
Further Remarks: <i>No further remarks.</i>			

Verification Protocol

Project Title: Rudaiciai Wind Power Park Project

Date of Completion: 09.08.2009

Number of Pages: 41



Industrie Service

4.4 Peculiarities

Description of Peculiarities and unexpected Daily Events during the verification period			
	Description	Comments and Results	Concl.
Performance	<i>The Wind Park was operating during the verification period without any peculiarities and emergencies.</i>	<i>It was verified by several different sources: interviews with Veju Spektras and Enercon personnel (RD# 1-7.)</i>	
Documentation			☒
Measures			☒
Key Reporting Risks: <i>Reviewed documents and interviews showed clearly that there were no peculiarities during verification period.</i> Risk Classification: <i>The risk of unreported peculiarities is low as existing SCADA system is designed to report any operational peculiarity.</i> Further Remarks: <i>No further remarks.</i>			☒

Verification Protocol

Project Title: Rudaiciai Wind Power Park Project

Date of Completion: 09.08.2009

Number of Pages: 41



Industrie Service

4.5 Reliability and Plausibility

Description of crosschecks and plausibility checks			
	Description	Comments and Results	Concl.
Performance	See 2.2, 2.3, 2.4 and 3.4	<i>The audit team checked the Monitoring Report calculations, the raw data collection, transfer and processing and no mistakes were found.</i> <i>The crosscheck of data calculation was performed and no mistakes were found.</i> <i>The provided emission reductions (tonnes of CO₂) are slightly less than estimated in PDD (for 2008: 44 934 < 46 231).</i>	☒
Key Reporting Risks: <i>The calculation is based on power dispatch documents and invoices, so the possibility of overestimation of electricity generated is low. Data processing is basically simple.</i> Risk Classification: <i>The risk that data would be outside the plausible range is low.</i> Further Remarks: <i>No further remarks.</i>			☒

Verification Protocol

Project Title: Rudaiciai Wind Power Park Project

Date of Completion: 09.08.2009

Number of Pages: 41



Industrie Service

4.5 Completeness and Correctness

Description of completeness and correctness			
	Description	Comments and Results	Concl.
Correctness	<i>The verifier confirms that all the data provided in Monitoring report is correct.</i>	<i>All the data was verified and cross-checked</i>	☒
Completeness	<i>The verifier confirms that all the data provided in Monitoring report is complete.</i>	<i>The data provided is complete as described in project design documents</i>	☒
Further Remarks: <i>No further remarks</i>			

Verification Protocol

Project Title: Rudaiciai Wind Power Park Project

Date of Completion: 09.08.2009

Number of Pages: 41



Industrie Service

5 Additional requirements

Not applicable as there are no additional requirements

Verification Protocol

Project Title: Rudaiciai Wind Power Park Project

Date of Completion: 09.08.2009

Number of Pages: 41



Industrie Service

6 Data Reporting

Description of the Monitoring Report		
	Comments and Results	Concl.
Compliance with UNFCCC regulations	<i>The project is applying a project specific methodology approach. All requirements from the project specific methodology approach are fulfilled. The Monitoring Plan in the PDD and the Monitoring Report are consistent</i> <i>Monitoring report v.02 March 2009 is consistent with the PDD. (RD# 1-4)</i> <i>The verified period is from the beginning of 01.01.2008 until 31.12.2008.</i>	☒
Completeness and Transparency	<i>The project description and implementation is complete and transparently explained in the Monitoring Report.</i>	☒
Correctness	<i>All the reported data is correctly represented in the Monitoring report and Calculation Tool.</i>	☒
Key Reporting Risks: <i>The MR is compiled by employed consultant and project owner is approving it in written (see 4.1)</i> Risk Classification: <i>The risk of misstatement of reported data is low. The collected, calculated and reported data is simple and ordinary.</i> Further Remarks: <i>No further remarks.</i>		☒

Verification Protocol

Project Title: Rudaiciai Wind Power Park Project

Date of Completion: 09.08.2009

Number of Pages: 41



Industrie Service

7 Compilation and Resolutions of CARs, CRs and FARs

Corrective Action Requests by audit team	Summary of project owner response	Audit team conclusion
<u>CAR#6</u> <i>The Monitoring Report should be approved in written and evidence presented</i>	<i>Monitoring report signed by UAB Veju spektras director submitted to TUV SUD.</i>	<i>The document is signed. The issue is considered to be solved.</i>
<u>CAR#7</u> <i>The procedure of signature shall be established in KP-GM-05</i>	<i>The KP-GM-05 procedure updated by establishing the procedure of signing of CO2 calculation sheet. Copy submitted to TUV SUD.</i>	<i>The procedure is described now. The issue is considered to be solved.</i>
Clarification Requests by audit team	Summary of project owner response	Audit team conclusion
Forward Action Requests by audit team	Summary of project owner response	Audit team conclusion

Periodic Verification
of Rudaiciai Wind Power Park in Lithuania



Industrie Service

Annex 2

Information Reference List

Final Report	09-08-2009	Verification of the CDM Project Rudaiciai Wind Power Park Project Information Reference List	Page 1 of 2	 Industrie Service
--------------	------------	--	----------------	--

Ref. No.	Author/Editor/ Issuer	Title/Type of Document. Publication place	Issuance and/or submission date(dd/mm/yyyy)	Additional Information (Relevance in CDM Context)
<u>Category 1 Documents:</u> Documents provided by the Client that relate directly to the GHG components of the project. These have been used as direct sources of evidence for the verification conclusions.				
1-1		PDD "Rudaiciai Wind Power Park Project, version PDD05", dated April 2008		
1-2		Determination Report "Determination of the "Rudaiciai Wind Power Park Project", Lithuania", report no. 872011, TÜV SÜD Industrie Service GmbH, dated 05.05.2008.		
1-3		"Rudaiciai wind power park project MONITORING REPORT for the year 2008, V.01 January 2009". Issued on January 29, 2009; including Rudaiciai_CO2_reduction_2008_v01.xls (Excel-spreadsheet)		
1-4		"Rudaiciai wind power park project MONITORING REPORT for the year 2008, V.02 March 2009". Issued on March 20, 2009.		
1-5		Monthly invoices on electricity sold to the grid (VSK Nr: 10 0053, 10 0055, 10 0060, 10 0063, 10 0066, 10 0073, 10 0075, 10 0077, 10 0079, 10 0081, 10 0084 and 10 0086)		
1-6		Monthly invoices on electricity bought from the grid (LBG Nr: 1277721, 1277772, 1277813, 1277854, 7220369, 7220409, 7220472, 8992170, 8992195, 8992243, 1272666 and 1272701)		
1-7		List of audit participants		
<u>Category 2 Documents:</u> Background documents related to the design and/or methodologies employed in the design or other reference documents. These documents have been used to cross-check project assumptions and confirm the validity of information given in the Category 1 documents been provided to the AIE within first periodic verification.				

Final Report	09-08-2009	Verification of the CDM Project Rudaiciai Wind Power Park Project Information Reference List	Page 2 of 2	 Industrie Service
--------------	------------	--	----------------	--

Ref. No.	Author/Editor/ Issuer	Title/Type of Document. Publication place	Issuance and/or submission date(dd/mm/yyyy)	Additional Information (Relevance in CDM Context)
2-1		Photo report		
2-2		Power dispatch documents between Lietuvos Energija and Veju Spektras (Nr: VJ-1/08/1, VJ-1/08/2, VJ-1/08/3, VJ-1/08/4, VJ-1/08/5, VJ-1/08/6, VJ-1/08/7, VJ-1/08/8, VJ-1/08/9, VJ-1/08/10, VJ-1/08/11 and VJ-1/08/12)		
2-3		Power dispatch documents between VST and Veju Spektras (VST_january_2008 and VST_December_2008)		
2-4		Production reports, (SCADA screen and Excel-spreadsheet)		
2-5		QM Manual (reviewed on site)		