
VERIFICATION REPORT AND CERTIFICATION STATEMENT

Red Hills Wind Project, L.L.C.

Red Hills 123 MW Wind Power Project

SGS Climate Change Programme
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Date of Issue:		Project Number:	
29/07/2010		CCP.VOL0399	
Project Title:			
Red Hills 123MW wind power project			
Organisation:		Client:	
SGS United Kingdom Limited		Red Hills Wind Project, L.L.C.	
Publication of Monitoring Report :			
Monitoring Period:		From 11/11/2008 to 31/05/2009	
First Monitoring Report Version and Date:		Version 01, 03/05/2010	
Final Monitoring Report Version and Date:		Version 02, 04/06/2010	
Summary:			
SGS United Kingdom Ltd has performed the verification of Red Hills Wind Power Project (VCS ref. No.288) for its first monitoring period from 11/11/2008 to 31/05/2009. The verification includes an assessment of the monitoring plan of the registered Project Description Ref. No.288 (also referred to as VCS PD hereinafter) and the application of the monitoring methodology as per ACM0002v9: Consolidated methodology for grid-connected electricity generation from renewable sources, version 09, dated 11/02/2009. A site visit was conducted during June 2-4, 2010 to verify the data submitted in the monitoring report. The Red Hills 123 MW Wind Power Project consists of the installation of 82 Acciona 1.5 MW turbines to a capacity of 123 MW of wind power on approximately 5,000 acres of agricultural and grazing land. The facility delivers power into the Southwest Power Pool (SPP) with interconnection at the Western Farmers Electric Cooperative. The project generates electricity from renewable sources and therefore displaces electricity that otherwise would have been procured from the more carbon intensive grid in the absence of the Red Hills wind farm. SGS confirms that the project is implemented in accordance with the validated PD. The monitoring system is in place and the emission reductions are calculated without material misstatements. Our opinion relates to the project's GHG emissions and the resulting GHG emission reductions reported and related to the validated project baseline and monitoring and its associated documents. Based on the information seen and evaluated we confirm that the implementation of the project has resulted in 129546 tCO₂e Emission Reductions during period from 11/11/2008 to 31/05/2009. The yearly break-up of the emission reduction for 2008 and 2009 is as follows: November 11, 2008 to December 31, 2008 : 5746 tCO₂ January 1, 2009 to May 31, 2009: 123800 tCO₂			
Subject:			
VCS 2007.1 Project Verification			
Verification Team:			
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Abbreviations

AFOLU	Agriculture, Forestry and Other Land Use
CAR	Corrective Action Request
CL	Clarification Request
CO ₂	Carbon Dioxide
CO ₂ e	Carbon Dioxide Equivalent
DOE	Designated Operational Entity
DRRs	Daily Reading Records
EF	Emission Factor
FAR	Forward Action Request
GCA	Grid Connection Agreement
GHG	Greenhouse Gas(es)
GWP	Global Warming Potential
IPCC	Intergovernmental Panel on Climate Change
MP	Monitoring Plan
MR	Monitoring Report
MRRs	Monthly Reading Records
PP	Project Participant
PPA	Power Purchase Agreement
SGS	Société Générale de Surveillance
SPP	South West Power Pool
UNFCCC	United Nations Framework Convention on Climate Change
VCS	Voluntary Carbon Standard
VCS PD	VCS Project Description
VCU	Voluntary Carbon Unit
VVM	Validation and Verification Manual

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1. Introduction

1.1 Objective

SGS United Kingdom Ltd has been contracted by Acciona to perform an independent verification of Red Hills Wind Power Project, in the state of Oklahoma against Voluntary Carbon Standard. The verifiers reviewed the GHG data collected for the period between 11/11/2008 and 31/05/2009.

The purpose of this verification exercise is, by review of objective evidence, to independently review:

- Whether the project has resulted in emission reductions as declared by GHG project's monitoring report (GHG assertion);
- The data reported are accurate, complete, consistent, transparent and free of material error or omission.

1.2 Scope and Criteria

This engagement covers verification of emission reductions from anthropogenic sources of greenhouse gases included within the project boundary of 'Red Hills Wind Power Project'.

Our approach is risk-based, drawing on an understanding of the risks associated with reporting GHG emissions data and the controls in place to mitigate these. Our examination includes assessment, on a test basis, of evidence relevant to the amounts and disclosures in relation to the project's GHG emission reductions for the defined reporting period.

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

1.3 VCS project Description

The Red Hills Wind Power Project involves 82 sets of 1.5 MW wind turbines with a total installed capacity of 123MW. The commencement of commercial operations is evidenced by the date when the Commissioning Certificate was signed (Dated 11/11/2008). All the wind turbines have been put into operation since 18/12/2008 as evidenced from the commissioning certificates.

1.4 Level of assurance

The level of assurance of the verification report is reasonable assurance engagements.

1.5 Project Activity and Period Covered

This engagement covers verification of emission reductions from anthropogenic sources of greenhouse gases included within the project boundary of the following project and period.

Title of Project Activity:	Red Hills Wind Power Project
SGS Reference No:	CCP.VOL0399
Monitoring Period Covered in this Report:	From 11/11/2008 to 31/05/2009
Project Owner:	"Red Hills Wind Project, L.L.C."
Location of the Project Activity:	The project is located 10 miles north of Elk city in western Oklahoma, USA.

2. Methodology

2.1 General Approach

SGS approach to the verification is a two-stage process.

In the first stage, SGS completed a strategic review and risk assessment of the projects activities and processes in order to gain a full understanding of:

- Activities associated with all the sources contributing to the project emissions and emission reductions, including leakage if relevant;
- Protocols used to estimate or measure GHG emissions from these sources;
- Collection and handling of data;
- Controls on the collection and handling of data;
- Means of verifying reported data; and
- Compilation of the Monitoring Report.

At the end of this stage, SGS produced a Verification Checklist which, based on the risk assessment of the parameters and data collection and handling processes for each of those parameters, describes the verification approach and the sampling plan.

Using the Verification checklist, SGS verified the implementation of the Monitoring Plan and the data presented in the Monitoring Report for the period in question. This involved a site visit and a desk review of the Monitoring Report. This verification report describes the findings of this assessment.

2.2 Verification Team for this Assessment

Name	Role
Siddharth Yadav	Team Leader/Lead Assessor
Anshuman Shukla	Assessor (Trainee- VCS Projects)

2.3 Means of Verification

2.3.1 Review of Documentation

The registered PD, the Monitoring Report submitted by the client and additional background documents related to the project performance were reviewed. A complete list of all documents reviewed is attached in section 7 of this report.

2.3.2 Site Visits

As part of the verification, the following on-site inspections have been performed

Location: Project site in Western Oklahoma, US	
Date: 02/06/2010 ~ 04/06/2010,	
Audit Team: Siddharth Yadav, Anshuman Shukla	
Coverage:	Source of Information / Persons Interviewed
1. Assessment of the implementation and operation of the project activity as per the registered PD;	Paz Nachón López, Climate Change Regulation Specialist
2. Review of information flows for generating, aggregating and reporting the monitoring parameters;	Chris Vickery, Settlement Specialist
3. Interviews with relevant personnel to confirm that the operational and data collection procedures are implemented in accordance with the monitoring plan.	Russ Zinter – Lead Wind Turbine Technician Aaron Weippert – Wind Farm Site Manager
4. A cross-check between information provided in the monitoring report and data from other sources such as plant log books and sales receipts;	Chris Vickery, Settlement Specialist
5. A check of the monitoring equipment including calibration performance and observations of monitoring practices against the requirements of the PD and the selected methodology;	Russ Zinter – Lead Wind Turbine Technician Aaron Weippert – Wind Farm Site Manager Chris Vickery, Settlement Specialist
6. Review of calculations and assumptions made in determining the GHG data and emission reductions;	Paz Nachón López
7. Identification of quality control and quality assurance procedures in place to prevent or identify and correct any errors or omissions in the reported monitoring parameters.	Chris Vickery, Settlement Specialist Paz Nachón López, Climate Change Regulation Specialist
8. Onsite Health & Safety	Will Hayes – Director, Operations & Maintenance

2.4 Reporting of Findings

As an outcome of the verification process, the team can raise different types of findings

In general, where insufficient or inaccurate information is available and clarification or new information is required the team shall raise a Clarification Request (CL) specifying what additional information is required.

Where a non-conformance arises the team shall raise a Corrective Action Request (CAR). A CAR is issued, where:

- I. the verification is not able to obtain sufficient evidence for the reported emission reductions or part of the reported emission reductions. In this case these emission reductions shall not be verified and certified;
- II. the verification has identified misstatements in the reported emission reductions. Emission reductions with misstatements shall be discounted based on the verifiers ex-post determination of the achieved emission reductions

The verification process may be halted until this information has been made available to the assessor's satisfaction. Failure to address a CL may result in a CAR. Information or clarifications provided as a result of a CL may also lead to a CAR.

FARs may be raised which are for the benefit of future projects and future verification actors. These have no impact upon the completion of the verification activity.

Corrective Action Requests and Clarification Requests are detailed in Verification Checklist. The Project Developer is given the opportunity to "close" outstanding CARs and respond to CLs and FARs.

2.5 Internal Quality Control

Following the completion of the assessment process and a recommendation by the Assessment Team, all documentation will be forwarded to a Technical Reviewer. The task of the Technical Reviewer is to check that all procedures have been followed and all conclusions are justified. The Technical Reviewer will either accept or reject the recommendation made by the assessment team.

3. Verification Findings

3.1 Project Documentation and Compliance with the registered VCS PD

Referring to the project information on the on the VCS website <https://vcsprojectdatabase1.apx.com/mymodule/ProjectDoc/EditProjectDoc.asp?id1=288>, the project has been registered as a VCS project activity against ACM0002 version 09 (/4/) on 15/01/2010. This verification is conducted for the monitoring period from 11/11/2008 to 31/05/2009.

QA/QC procedures, as per the registered Project Description (PD, /1/) have been followed in the implementation of the project. Relevant guidance is documented in VCS manual (/15/). Monitoring parameters and approach in the monitoring report (MR, /2/) are consistent with the registered PD in terms of unit, measurement procedures and monitoring frequency (/9//10//11//12//13//14/). The data used in anthropogenic emission reductions is the net electricity supplied to the grid (EG_y), the total electricity produced by the project activity (TEG_y) minus the electricity consumed from the grid measured by bi-directional meters. The import of electricity from the grid is recorded by the same meters, since these are import-export meters. This data has been cross-verified with the invoices raised by SPP and payment received against the invoices. Emergency Plan and Staff Training Plan are set up. Members of staff are well trained and qualified.

The project boundary is verified to be in compliance with the one indicated in the PD. As PD and validation report (/3/) state, there are no other sources of GHG emissions attributable to the project activity. No fossil fuels were used for power generation by the project during this monitoring period. It has been confirmed by onsite visit and interview with the project participant.

CAR #1 was raised because the PD states that *"the project reached commercial operation on 26/10/2008 (defined as the first day that power was delivered to the South west power pool)"*, whereas according to the monitoring report the first turbine was commissioned on 11/11/2008.

The PP clarified that they defined the commercial operation as the first day any electricity was delivered at the project and some a minimal amount of electricity to be produced during the commissioning process. The PP decided to adopt the commissioning date as per the certificate and accordingly revised the emission reduction calculations.

The Monitoring report version 1 was for the period starting November 1, 2008 through May 31, 2009. The Monitoring Period for Monitoring Report version 2 was switched to November 11, 2008 through May 31, 2009. This was done to match with the commissioning dates, and the subsequent date of first electricity generation following commissioning of the turbines (November 13, 2010). By removing the data from November 1-10, 2008 (electricity utilized for testing of turbines etc for example 1 MWh was generated on November 7th 2008) was also taken off thus resulting in lower plant consumption. The registered PD stated that the start of the crediting period is October 26, 2008 but November 11, 2008 was considered appropriate as start date of monitoring because of the supporting evidence provided by the PP (signed commissioning certificate).

The corrected files for November 2008, Meter of Record and Check Meter Reading Report reflecting data for the period 11-30, November, 2008 were verified. CAR #1 was closed.

The Monitoring Report contains a comparison of the actual emission reductions claimed in the monitoring period with the estimate in the registered PD. The emission reductions were 293,839 tCO₂e annually, and 161,007 tCO₂e for the period 11/11/2008 to 31/05/2009 as per the estimation made in the registered PD. The actual emission reduction has been verified as 129,546 tCO₂ for the same period.

CL #2 was raised because the date of commissioning of turbine for A.602 as mentioned in monitoring report version 1 did not match the one specified in the commissioning certificate. The PP specified that there was an error regarding the reporting of the commissioning date, which was corrected in version 2 of the monitoring report to match with the actual date as mentioned in the commissioning certificate. The PP corrected the error and agreed to double check the databases before reporting these to the verifiers in future.

CL #2 was closed and FAR #1 was issued to the PP to conduct internal checks/audits so that such errors are captured before the monitoring information is reported to a third party verifier.

3.2 Monitoring Results

According to the registered PD, parameters that need to be monitored are:

- EG_y : Electricity supplied to the Southwestern Power Pool (SPP), in MWh and
- TEG_y : Total electricity produced by the project activity, including the electricity supplied to the grid and electricity supplied to the internal loads in year

The import of electricity from the grid is recorded by two sets of meters- main meter ('meter of record') and check meter. Both these meters measure the net generation and import (bi directional - import-export meters). The total electricity produced by the project activity (TEG_y) minus the electricity consumed from the grid provides the reading for net electricity supplied to the grid (EG_y). This calculation procedure was found not to be in exact compliance to the registered PD, but results in calculation of correct values of net electricity supplied to the grid (ref. table 1 below).

CL #3 was raised because of missing invoices for the period before 12/23/2008, there were signatures missing on the invoices and the a few dates resulted in overlapping periods for invoicing (ref. CL #3a, CL #3b and CL #3c in the UK findings document for details- Annexure 1).

The PP clarified that there is a significant lag between generation and invoicing from SPP. The documents related to the settlement (calendar and process) for the electricity supplied to the Southwestern Power Pool (SPP) were verified. The operating records were checked and cross verification was done against the invoices raised by Acciona North America to Constellation Energy. The initial and final settlement figures for these months were used to calculate the total amount of electricity generated during the period. Also regarding unsigned invoices, this is a standard industry practice for organized electric markets in North America. The invoice payments were reconciled with bank statements provided for Red Hills.

Payment details (invoices) for 3 days were found missing in the bank statements. Based on the information provided by the project participants, it was verified that Red Hills provided SPP with a credit amount of \$1,000. SPP then debited payments due from that \$1,000 for the missing amounts (minor amounts). An email discussion between Red Hills and SPP shows that for payment due from Red Hills to SPP, Red Hills provided SPP with a credit amount of \$1,000. SPP then debited payments due from that \$1,000. Copy of the emails between Red Hills and SPP were provided to SGS along with proof of the \$1,000 withdrawal from the Red Hills bank account.

The first draft of the Monitoring Report (MR) dated 3rd May 2010 showed 7,803 MWh of Production from the Meter of Record in December 2008. It was discovered during the Site Visit that this was overstated by 1 MWh. The correct value of 7,802 MWh is the value that was reported to SPP and payment was made based on this value. The online reporting system showed a "4" in place of a "3" during hour ending 1 on December 9, 2008. This accounted for the 1 MWh discrepancy. For future verifications, the project participants teams agreed that they will crosscheck the Settlement Statements with the daily invoices in the monitoring period to ensure there are no discrepancies.

This data has been cross-verified with the invoices raised by SPP and payment received against the invoices.

Table 1 Details on how TEG_y and EG_y were verified

How was this parameter in the monitoring plan and the applied methodology stated?	As per the registered PD, the electricity supplied to the grid will be monitored hourly and recorded monthly. The accuracy of electricity meters is 0.1%. The calibration frequency of the main meter and check meter is once in two and four years, respectively. To monitor the electricity, two meters (meter of record and a check meter) are installed at the point of interconnection. The grid company is responsible for conducting the monitoring of both the meters. At the same time, the data can be monitored and recorded at the onsite control centre using a computer system. Page 30 of the PD states that "Energy meters are calibrated at regular intervals as per the law applicable and implemented in practice to the wind farm in the state of Oklahoma and/or
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	as per the PPA or merchant agreement signed”. The metering equipment at the substation (hereinafter referred to as meter of record, ‘main meter’) functions as the basis of sales receipts issuance. This meter is owned and operated by the grid company (SPP). Another meter installed at the project site (hereinafter referred to as check meter) is used for double check. This meter is owned and operated by the project owner. As per page 16 of ACM0002 version 09, the electricity will be monitored continuously and there would be one monthly reading. This value is measured hourly and recorded monthly. This was double checked by sales receipts.
Responsibilities and authorities for monitoring and reporting	Reading of both the meters is achieved automatically by the control system of the grid company. Recorded electronic records are archived in the computer system. Designated members of staff have access to QA/QC documents. Members of staff are well trained and qualified. The VCS Manual, monitoring plan, staff training records and qualification certification of the have been checked by the verification team. The documents for this monitoring period are complete and transparent.
How was the verification carried out?	Through document review and onsite visit, it is verified by the verification team that two meters with accuracy level of 0.1% have been installed to monitor the electricity supplied to the grid by the project, including one meter of record and a check meter (for back up) at the substation. Readings from both the meters were recorded every hour by automatic control system of the grid company. The meter reading were recorded in DRRs and accumulated into MRRs on a monthly basis. Sales receipts were issued based on readings of the primary meter on a monthly basis. Electricity generation of each wind turbine was also monitored by the automatic control system of the wind farm. The electronic records of wind turbine generation logbooks were archived in the computer system. This procedure is also in accordance with the VCS Manual. Data from DRRs of 11/11/2008 and the last day of every month has been 100% checked and the data from DRRs of other days was randomly checked and verified. The data from MRRs covering the monitoring period under verification have been 100% checked and verified. Sales receipts covering this monitoring period have been 100% checked. The wind turbine generation logbooks were obtained by the verification team for cross references. Calibration certificates of both meter of record and check meter were provided. They indicate the accuracy and calibration frequency are the same as what the PD describes. Details are listed in table 2. Out of the two meters (Meter of Record and Check meter), the “minimum” export and ‘maximum’ import data from both meters has been used for a conservative approach.

Table 2 Calibration details

Meter	Serial No.	Calibration date	Certificate No.
Main Meter	82093242	15/10/2008	3615
Check Meter	LT-0808A309-01	09/06/2008	70052-0225-01
Calibrating Entity:	Western Farmers Electric Cooperative for Record meter and Schneider Electric for the check meter.		

From the calibration reports the accuracy of both the meters was established as 0.1%. Both of them were calibrated before installation (since this is the first monitoring period), in accordance with the monitoring plan. An emergency plan dealing with meter failure has been established and was also demonstrated with respect to the failure of the check meter during the crediting period. QA/QC procedures have been included in the VCS Manual. The members of staff working on the project are well trained. Monitoring results of the meter of record can be cross checked with the monitoring results of the check meter, during the period when both the meters were operational. DRRs and generation logbooks are used as cross references. Sales receipts were used for double checking.

3.3 Remaining Issues, CAR's, CL's from Previous Validation or Verification

This is the first monitoring period for the project and there are no issues. There are also no open issues from the validation.

3.4 Project Implementation

This is the first periodic verification of the project under the Voluntary Carbon Standard. Required facilities and equipments have been installed, the date of commissioning of the first turbine being 11th November 2008. The grid connection agreement confirmed the actual practice of the installation. Project was implemented and equipment installed as described in the registered PD.

The PD states: 'The provisions for metering will be as per the law applicable and implemented in practice to the wind farm in the state of Oklahoma and the provisions of the power purchase agreement (PPA) or merchant agreement. Plant records and maintains the records of all the electricity supplied to the grid, which are monitored continuously at the Systems Operation Center in Chicago, Illinois and reported on a monthly basis. Data is archived electronically. Generation details will be kept two years beyond the crediting'

The 'Generation Services Agreement' between 'Constellation Energy Control & Dispatch, LLC Ltd' ("CECD") and Red Hills Wind Project LLC Ltd. ("Red Hills) effective from 5th September 2008 states in section 4.5 'Metering and Telemetry Data' in the event that any metering equipment installed at the Generation Resources fails to register data, the delivery of electricity from the Generation Resources and any other electric power and energy shall be determined from the best available data as agreed by the transmission provider and CECD and communicated to Red Hills'.

The main meter - EMS60 -('metering equipment'- as above) was calibrated before installation and is used for monitoring the export of electricity to the grid. The test procedures have been complied with the applicable standard and it has been operational without a failure during the first monitoring period for the 'Red Hills' project.

CAR #4 was raised regarding the authenticity of calibration test certificate because serial number for the meter was not mentioned in the certificate provided. The Calibration Certificate had a few other documents including WFEC interchange test report; this report was not on a company letter head and had missing signatures of the authorised signatory. The PP provided a signed calibration test report and therefore CAR #4 was closed.

The first monitoring period was marked by the failure of the check meter. The Check meter was factory tested for accuracy in accordance with manufacturer's (Schneider Electric) verification procedures and was calibrated before installation on September 6th 2008 by Schneider Electric. The readings from the main meter have been used for the measuring the electricity generated during the period of failure of the check meter. This procedure is in accordance with the 'Generation Services Agreement' between 'Constellation Energy Control & Dispatch, LLC Ltd' ("CECD") and Red Hills Wind Project LLC Ltd. ("Red Hills)

The Interconnection and Operating Agreement entered into by the Southwest Power Pool, Inc., Western Farmers Electric Cooperative, and Red Hills Wind Project, L.L.C. on July 1, 2004 states under section 7.1 that WFEC will install metering equipment prior to any operation of the facility (the Red Hills wind farm). Section 7.4 states that WFEC will inspect and test their metering equipment upon installation and at least every 2 years thereafter. No further issues were raised because the main meter was installed and tested before electricity generation and export started on Red Hills project.

3.5 Completeness of Monitoring

Meters are installed and used correctly. The reporting procedures reflect the content of the monitoring plan and the monitoring plan. The monitoring mechanism is effective and reliable.

3.6 Accuracy of Emission Reduction Calculations

The calculation of the net electricity supplied to the grid (EG_y) and the emission reductions was carried out by applying the data generation spreadsheets (/5/). The calculation process was verified to be correct. The details of the reported and the verified values for all parameters are listed in section 4, 'Calculation of Emission Reductions'.

Data used for emission reductions calculation in MRRs and sales receipts for the period 11/11/2008 to 31/05/2009 were checked by the verification team. Wind turbine generation spreadsheets and DRRs were also checked for cross reference. Baseline emission factor is an ex-ante determined value and fixed for the first crediting period as the registered PD describes. This is further confirmed on page 15 of the validation report. The applied value of the baseline emission factor in the MR for this monitoring period (0.67 tCO₂/MWh) is in compliance with the registered PD.

3.7 Quality of Evidence to Determine Emission Reductions

Critical parameters used for the determination of the Emission Reductions are discussed above in section 3.2. All the data recorded is in compliance with the Monitoring Report.

3.8 Management and Operational System and Quality Assurance

Management system and quality assurance procedures have been stipulated in the VCS Manual and have been implemented. Emergency plan and staff training plan are in place. The members of staff are well trained and qualified. These have been verified during on-site visit and document review. Therefore we can affirm that the management system of the project is in place; with the responsibilities properly identified and in place, and that QA/QC procedures are well implemented.

FAR #1 (discussed above) was raised because an error was found regarding the reporting of the commissioning dates of turbines in the reported data vis-à-vis the commissioning certificates. This error was corrected in version 2 of the monitoring report to match with the actual date as mentioned in the commissioning certificate.

CL #2 was closed and FAR #1 was issued to the PP to conduct internal checks/audits so that such errors are captured before the monitoring information is reported to a third party verifier.

3.9 Data from External Sources

3.9.1 EF_y Baseline Emission Factor, tCO₂e/MWh

Baseline emission factor is an ex-ante determined value according to version 09 of the approved methodology ACM0002 and fixed for the first crediting period as the registered PD describes which has been further confirmed on page 15 of the validation report. Ex-ante determined Baseline Emission Factor, 0.67 tCO₂/MWh is used for this monitoring period which is in compliance with the registered PD.

No findings were raised in this regard.

4. Calculation of Emission Reductions

According to the registered PD, Project Emissions (PE_y) and Leakage (L_y) are 0. No additional sources of emissions were found during the site visit.

Net electricity production verified during the period November 11, 2008 to May 31, 2009 is 193353.21MWh

Total emission reductions verified during the monitoring period were 129546 tCO₂.

The yearly break-up of the emission reduction for 2008 and 2009 is as follows:

November 11, 2008 to December 31, 2008: 5746 tCO₂

January 1, 2009 to May 31, 2009: 123800 tCO₂

5. Recommendations for Changes in the Monitoring Plan

No recommendation for changes in the monitoring plan was made during this verification.

6. VCU Certification Statement

The scope of the verification

We, SGS have been engaged by Red Hills Wind project, L.L.C. to certify that the greenhouse gas (GHG) emission reductions reported for Red Hills Wind project for the period from 11/11/2008 to 31/05/2009 in the verification report and the Monitoring Report version 2 dated 04/06/2010 are eligible for registration as Voluntary Carbon Units.

This engagement covers the verification of emission reductions from anthropogenic sources of greenhouse gases included within the project boundary of the Red Hills Wind Power Project, as well as an additional confirmation of the compliance of the registered PD with the requirements of VCS 2007.1

Our approach is risk-based, drawing on an understanding of the risks associated with reporting GHG emissions data and the controls in place to mitigate these. Our examination includes assessment, on a test basis, of evidence relevant to the amounts and disclosures in relation to the project's GHG emission reductions for the defined reporting period.

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

Conclusions of the verification

(a) We are an entity accredited by the United Nations Framework Convention for Climate Change (UNFCCC) to undertake certification and verification services in the sector in which the Project is undertaken. The accreditation is accepted by VCS Board as indicated in Clause 9 of VCS 2007.1.

(b) The Monitoring Report, together with other information examined, was prepared in full substance and form as required by the Voluntary Carbon Standard version 2007.1.

(c) The information in the Project's Monitoring Report together with other information examined by us, including all the information necessary for us to determine that the emission reductions achieved have been determined correctly.

(d) Based on our examination of the Monitoring Report and other relevant information, the Project meets all the requirements of the Voluntary Carbon Standard verification criteria contained in the VCS 2007.1.

(e) The monitoring report version 1 dated 03rd May 2010 contained was claiming emission reductions during the monitoring period from 01/11/2008 to 31/05/2009, however since the commissioning certificate for the first turbine is dated 11th November 2008, the PP revised the monitoring report (version 2 dated 04th June 2010) to start the crediting period stating from 11th November 2008 and ending on 31st May 2009. A total of 193353.21 MW electricity was exported to the grid contributing to emission reduction of 129,546 tCO₂ equivalent.

Liability statement with regards to the accuracy of the verification statement

The management of the project is responsible for the preparation of the GHG emissions data and the reported GHG emissions reductions. SGS is responsible for verification and confirming emission estimates for the project, as described in the Monitoring Report.

Our certification approach draws on an understanding of the risks associated with reporting GHG emissions data and the controls in place to mitigate these. Our examination includes an assessment of evidence, through desk review, and where necessary, interviews, stakeholder discussions and site visits, relevant to certifying the rightfulness of the amounts and disclosures in relation to the Project's GHG emission reductions.

We planned and performed our work to obtain the information and explanations that we considered necessary to provide sufficient evidence for us to give reasonable assurance that the amount of GHG emission reductions for the given period, prepared on the basis of the Monitoring Report, are fairly stated.

This assessment included:

- Collection of evidence supporting the reported data

- Checking whether the provisions of the Monitoring Plan in the registered PD, were consistently and appropriately applied

We have verified whether the information included in the Monitoring Report representing the emission reductions achieved has been determined correctly for the given period from the baseline figure.

Certification statements

Based on process and procedures conducted, in our opinion, the Monitoring Report dated 04/06/2010 on emission reductions for Red Hills Wind Power Project during the reporting period from 11/11/2008 to 31/05/2009 is materially correct and is a fair representation of the GHG data and information and the emission reductions are fairly stated. All relevant facts have been found correct by our examination. The GHG emission reductions were calculated correctly on the basis of ACM0002 Version 09.

Therefore, SGS is able to certify that the project is in full compliance with the Voluntary Carbon Standard 2007.1, and the quantity of the reported emission reductions during below reporting period are complete, comparable, accurate and correctly reported.

Reporting period: From 11/11/2008 to 31/05/2009

Verified emission in the above reporting period:

Project emissions	0	t CO ₂ equivalents
Baseline emissions	129,546	t CO ₂ equivalents
Emission reductions	129,546	t CO ₂ equivalents

The yearly break-up of the emission reduction for 2008 and 2009 is as follows:

November 11, 2008 to December 31, 2008: **5746 tCO₂**

January 1, 2009 to May 31, 2009: **123800 tCO₂**

Statement of Confidentiality

SGS will hold all information confidential until the client instructs otherwise or until it has been released in accordance with the VCS 2007.1 modalities and procedures.

Signature of Authorised Signatory



Name of Authorised Signatory: Siddharth Yadav

7. Document References

Reference List

- /1/ PD version 02 dated November 2008
<https://vcsprojectdatabase1.apx.com/mymodule/ProjectDoc/EditProjectDoc.asp?id1=288>
- /2/ Monitoring Report version 02 dated 04/06/2010
- /3/ Validation report for Red Hills Wind Power Project dated 02/12/2008, Report No. 288
- /4/ ACM0002 version 09 dated 11/02/2009
- /5/ ERs spreadsheet for this monitoring period
- /6/ Installation schematic of the project
- /7/ Power Purchase Agreement signed between the grid company and the project company
- /8/ Grid Connection Agreement signed between the grid company and the project company
- /9/ Calibration certificates of the meter of record and check meter issued by Western Farmers Electric Cooperative and Schneider Electric, respectively.
Meter of Record: 82093242 : Dated 15/10/2008
Check meter: LT-0808A309-01: Dated 06/09/2008
- /10/ Daily Reading Records of the Project(from 13/11/2008 to 31/05/2009)
- /11/ Monthly Reading Records of the Project(from 13/11/2008 to 31/05/2009)
- /12/ Sales receipts for electricity supplied to and imported from the grid by the project covering the period from 01/11/2008 to 31/05/2009
- /13/ Summary of monthly sales receipts from the grid company covering the period from 13/11/2008 to 31/05/2009
- /14/ Wind farm logbooks from 01/11/2008 to 31/05/2009
- /15/ VCS Manual, Monitoring plan, staff training records and qualification certification of the staffs
- /16/ Business license by State Administration for Industry & Commerce of the USA
- /17/ Voluntary Carbon Standard 2007.1 dated 18/11/2008
- /18/ VCS Guidance Document: VCS Project Registration and VCU Issuance Process version 1.1
- /19/ Further Guidance for Projects that are Registered in Two GHG Programs dated 19/03/2008, <http://www.v-c-s.org/190308guide.html>
- /20/ Policy Announcement from the VCS Association dated 10/09/2008

A.1 Annex 1: Findings Overview

Findings Overview Summary

	CARs	CLs	FARs
Total Number raised	2	2	1

Findings Overview

Type:	CAR	Number:	CAR #1	Reference:	PD page 2 sec.1.4 Monitoring report dt. 03/05/2010, pg.4 'turbine commissioning dates'
Lead Assessor Comment:					
The PD states that “<i>the project reached commercial operation on 26/10/2008 (defined as the first day that power was delivered to the South west power pool).....</i>” , whereas according to the monitoring report the first turbine was commissioned on 11/11/2008. . There seems to be gap in definition of ‘commercial operation’ or Inconsistent reporting, because the project cannot reach commercial operation without electricity generation Please clarify					
Project Participant Response:				Date:	
Commercial operation is defined as the first day any electricity was delivered at the project. Although the first Commissioning Certificate was signed on 11/11/2008, it is possible for some minimal amount of electricity to be produced during the commissioning process, which is what happened in this case.					
Documentation Provided by Project Participant:					

Commissioning certificate for turbine A1.01 dated December 17, 2008	
Commissioning certificate for turbine A1.02 dated December 18, 2008	
Commissioning certificate for turbine A2.01 dated November 25, 2008	
Commissioning certificate for turbine A2.05 dated November 24, 2008	
Commissioning certificate for turbine A5.02 dated November 19, 2008	
Commissioning certificate for turbine A6.01 dated November 11, 2008	
Commissioning certificate for turbine A6.02 dated November 14, 2008	
Commissioning certificate for turbine A7.07 dated December 18, 2008	
Commissioning certificate for turbine A7.08 dated December 04, 2008	
Commissioning certificate for turbine A7.09 dated November 26, 2008	
Commissioning certificate for turbine A7.10 dated December 15, 2008	
Commissioning certificate for turbine A7.11 dated December 07, 2008	
Commissioning certificate for turbine A7.12 dated December 12, 2008	
Information Verified by Lead Assessor: Commissioning certificates (as above). Start date of commercial operation is the specific date of execution and delivery mentioned on each of the certificates. The certificates clearly state: <i>'start up and commissioning activities have been conducted for wind turbine and (i) each item on the commissioning completion checklist has been completed in respect of such wind turbine (ii) such Wind Turbine has successfully passed the Commissioning test and (iii) attached hereto is the agreed Punch List for such Wind Turbine.</i> <i>Executed and delivered to Buyer this XX day of XX month, XXXX year</i>	
Acceptance and Close out by Lead Assessor: Closed	
Date: 04/06/2010	

Date:	03/06/2010		Raised by:	Siddharth Yadav/Anshuman Shukla	
Type:	CL	Number:	CL #2	Reference:	2 under table 1
Lead Assessor Comment: As per the data observed during verification on site visit the first production date is 07/11/2008 2:00 – 3:00 hours - 1MWh electricity, the electricity shown as generated on 07/11/2008 is questionable because the commissioning date is 11/11/2008, data monitoring and quality assurance procedures to be further analyzed. Date of assembly of the first turbine is shown as 20/09/2008, while the commissioning date mentioned in monitoring report is 11/11/2008, 14/11/2008 respectively. Installation certificate of the turbine (no. A.6.1, A.6.2) to be checked.					
Project Participant Response:				Date: 04/06/2010	

The verifier brought to our attention a discrepancy between the commissioning date information in the MR and the commissioning certificates. This was due to a mistake, as when preparing the MR from Spain information was taken from a database used during construction of Acciona wind farms all around the world. This information turned out not to be as updated as the information available in the Chicago office, which had the most updated and correct information. The commissioning date information in the MR was therefore updated to reflect this. This information pertains to commissioning and is therefore not going to change or affect future verifications, but we will double check the reason why the information in the two databases did not match and correct it in the one held in Spain.

As was stated above, it is possible for some minimal amount of electricity to be delivered during the testing process prior to Commissioning Certificate execution. This is what happened on the 7th of November, 2008. when 1 MWh was generated. Since this date was before the official commissioning of the first turbine, we have decided not to consider this generation and to begin the Monitoring Period on November 13th, 2008. November 13th, 2008 is the first date after commissioning where electricity was delivered.

Documentation Provided by Project Participant:

Certificates of commissioning of 13 randomly selected turbines were provided by the PP and these were checked for their commissioning dates by comparing them with the dates mentioned in the MR. The specific certificates of commissioning provided are listed in the "Documentation Provided by Project Participant" in CAR #1. There was a discrepancy in the date for turbine number A6.2 which shows a difference of one day in the two data sets provided. There was no deviation in the reported dates for the other 6 turbines checked. Another sample set of 6 certificates was requested for verification. Following the further checks the dates of commissioning were found to match with the dates mentioned in the MR. Therefore, the one discrepancy for A6.2 in MR was corrected by the PP. This is not likely to affect the issuance of CERs for the project since the data used for calculation of ERs is cumulative data and would not be affected by the date of commissioning of turbines. The issue was, therefore, closed out.

Information Verified by Lead Assessor:

The certificates of commissioning completion of turbines were checked

Reasoning for not Acceptance or Acceptance and Close Out:

Date: 06/06/2010

The first date of commissioning of the turbine is 11th November 2008 (Exhibit G.2.7, turbine no.A601). the project proponent agreed to deduct the electricity generated before 11th November 2008 for the calculation of total emission reductions.

Regarding the error in reporting of the commissioning date, the project Participant agreed to double check the reason why the information in the two databases did not match and correct it. FAR 1 was issued to conduct internal checks/audits so that such errors are captured before the information in monitoring information is reported to third party verifier.

Acceptance and Close out by Lead Assessor:

Date: 06/06/2010

CL 2 closed and FAR1 issued

Date:	03/06/2010		Raised by:	Siddharth Yadav/Anshuman Shukla		
Type:	CL	Number:	CL #3		Reference:	2 under table 1

Lead Assessor Comment:

CL 3a: The statement period for invoice (number) – MKT081229ACWE001, dated 12/29/2008 (first invoice) is 12/17/2008 -12/23/2008. However the first month for claiming emission reductions is November 2008. Invoices for the period before 12/23/2008 could not be verified because of missing invoices statements.

CL 3b: The invoices are not signed by the power purchaser; hence it could not be ensured what amounts have been actually paid for?

CL 3c: The statement period for invoice (number)–MKT090212ACWE001, and invoice (number) MKT090212RHWP001 both dated 02/12/2009 coincide for the period 02/04/2009-02/10/2009, similarly invoice (number) – MKT 090219ACWE001 and MKT 090219RHWP001 are both dated 02/19/2009 for the period 02/11/2009-02/17/2009.

Electricity supplied to the Southwestern Power Pool (SPP): The data was verified by checking the operating records cross verified with the invoices raised by Acciona North America to Constellation Energy were checked for the months of November, December and March and the total electricity production values for these months were verified against the reported revenue figures. The initial and final settlement figures for these months were used to calculate the total amount of electricity generated during the period. The final settlement figures were the same as the figures reported for the months of November and March. However, for December 2008 there was an overestimation of the total electricity produced by 1MW. This discrepancy has now been corrected in the MR. The initial and final settlement figures for these months were used to calculate the total amount of electricity generated during the period.

Bank Statements issued by JP Morgan Chase Bank, N.A. (IL) currency USD, account number *****7*****1, Account name – Red Hills Wind project LLC Cash reporting - Ledger statement reports for Acciona Wind Energy were checked. Payment details for 03/11/2009,03/13/2009, 03/18/2009 were found missing in the bank statements.

- Please clarify the discrepancy/missing figures in amounts details in Bank statement for the above dates
- Why two invoices are issued for the customers- Red Hills Wind Project and Acciona Wind Energy USA LLC for different amounts for the same periods, to be confirmed. Figures as mentioned in invoice to be confirmed with the payments.

Project Participant Response:

Date: 04/06/2010

CL 3a: There were no missing invoice statements. There is a significant lag between generation and invoicing from SPP. This has been discussed with the Verifier and agreement has been reached. Documentation is provided describing the settlement calendar and process at SPP.

CL 3b: The invoices are not signed by the power purchaser, however the invoices are generated by the power purchaser, implying their consent. This is standard industry practice for organized electric markets in North America. The invoice payments were reconciled with bank statements provided for Red Hills.

For invoices indicating payment due to Red Hills from SPP bank statements clearly showed matching deposits for each invoice. For invoices indicating a payment due from Red Hills to SPP, Red Hills provided SPP with a credit amount of \$1,000. SPP then debited payments due from that \$1,000. An email discussion between Red Hills and SPP was provided to the Verifier along with proof of the \$1,000 withdrawal from the Red Hills bank account. In this way all invoices were matched to payments.

CL 3c: On February 1, 2009 the Red Hills project identifier used with SPP was changed. Originally the project was registered with SPP under the name Acciona Wind Energy. On February 1, 2009 that name was changed to Red Hills Wind Project, L.L.C. Since SPP has two settlement cycles (Initial and Final, as shown in the Settlements Calendars) Red Hills continued to receive invoices for the Acciona Wind Energy registered name even after February 1, 2009. There are some invoice dates where an invoice was received both for Red Hills Wind Project, L.L.C. and Acciona Wind Energy, however no generation was double counted.

IN ADDITION:

The first draft of the Monitoring Report (MR) showed 7,803 MWh of Production from the Meter of Record in December 2008. It was discovered during the Site Visit that this was overstated by 1 MWh. The correct value of 7,802 MWh is the value that was reported to SPP and payment was made based on this value. The online reporting system showed a "4" in place of a "3" during hour ending 1 on December 9, 2008. This accounted for the 1 MWh discrepancy. For future verifications Red Hills will crosscheck the Settlement Statements with the invoices for every day in the monitoring period to ensure there are no discrepancies.

Documentation Provided by Project Participant:

SPP Market Settlements Calendar 2008
SPP Market Settlements Calendar 2009
Email discussion between SPP and Red Hills
March 2009 Bank Statement for Red Hills provided by JPMorgan Chase Bank

Information Verified by Lead Assessor:

As Above

Acceptance and Close out by Lead Assessor:

Date: 06/06/2010

CL 3a, 3b, 3c closed

Type:	CAR	Number:	CAR #4	Reference:	
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Lead Assessor Comment:

Calibration certificate for the main meter could not be confirmed as the serial number for the meter is not mentioned in the certificate provided.

Project Participant Response:	Date:
The Calibration Certificate referenced above was for the test set used to test the Meter of Record. We have additionally supplied the Calibration Certificate for the Meter of Record, which includes the serial number. Since the Meter of Record Calibration Certificate does not include a physical signature we have directed the Verifier to Sections 7.3 and 7.4 of the Interconnection and Operating Agreement entered into by the Southwest Power Pool, Inc., Western Farmers Electric Cooperative, and Red Hills Wind Project, L.L.C., entered into on the 1st day of July, 2004. These Sections 7.3 and 7.4 states that "Transmission Provider shall install, calibrate, and test revenue quality Metering Equipment..." and "Transmission Provider shall inspect and test all Transmission Provider-owned Metering Equipment upon installation..."	
Documentation Provided by Project Participant:	
Interconnection and Operating Agreement entered into by the Southwest Power Pool, Inc., Western Farmers Electric Cooperative, and Red Hills Wind Project, L.L.C., entered into on the 1st day of July, 2004 Meter of Record Calibration Certificate (10-15-2008) signed by Joe Thomas from Western Farmers Electric Cooperative. Joe Thomas is the meter technician that performed the calibration.	
Information Verified by Lead Assessor:	
Meter of Record Calibration Certificate (signed) S.No. 82093242, EM60 was obtained. Compliance assured.	
Acceptance and Close out by Lead Assessor:	Date: 06/06/2010
CAR4 closed	

Type:	Observation	Number:	N/A	Reference:	N/A
Reporting - Monitoring report should contain:					
- Registration date of the project activity - Crediting period of the project activity and related information - Data and parameters monitored • Value of monitored parameter in the period for the purpose of calculating emission reductions. To report multiple values , a table may be used and included in this monitoring report. For default value (such as an IPCC value), where it is ex-post confirmed, the most recent value shall be applied. • Description of the equipment used to monitor each parameter, including details on accuracy class, and calibration information (frequency, date of calibration and validity), if applicable as per monitoring plan. • Measuring and recording method: how the parameters are measured/calculated, specifying the measurement and recording frequency. • Source of data: logbooks, daily records, surveys, etc. • Where relevant, the calculation method of the parameter. • The QA/QC procedures applied (if applicable per monitoring plan). • Include information about appropriate emission factors, IPCC default values and any other reference values that have been used in the calculation of emission reductions. - Data and parameters used to calculate baseline emissions - Data and parameters used to calculate project emissions - Data and parameters used to calculate leakage emissions - Other relevant data and parameters - Emission reductions calculation - Baseline emissions calculation - Project emissions calculation - Leakage calculation - Emission reductions calculation - Comparison of actual emission reductions with estimates in the registered CDM-PD - Remarks on difference from estimated value					
Information on data collection procedures (information flow including data generation, aggregation, recording, calculation and reporting) is unclear					
Turbine S.No.s reported in table on page 4 should be corrected to reflect the actual figures (missing '0')					
Note: International standard format should be used e.g. 1,000 representing one thousand and 1.0 representing one. The units used for weights should be accompanied by their equivalent in the international system of units (SI) units and norms (e.g. thousand, million) as part of the requirement to ensure transparency and clarity.					
Project Participant Response:				Date: 04/06/2010	
Information on data collection and invoicing procedures has been clarified in Section 4.2 of the Monitoring Report Version 2 dated June 4 th , 2010..					
Turbine Serial Numbers have been updated to reflect the style of AX.0Y in the Monitoring Report Version 2 dated June 4 th , 2010.					
International standard format is used in the Monitoring Report Version 2 dated June 4 th , 2010.					

Documentation Provided by Project Participant:
Monitoring Report Version 2 dated June 4 th , 2010.
Information Verified by Lead Assessor: Monitoring Report Version 2 dated June 4 th , 2010, OK Closed

FIRST MONITORING REPORT

Emission reductions: 129,546 tCO₂e

Monitoring period: 11th November 2008 – 31st May 2009
(inclusive of both days)

Version 2
Date of report: 04 June 2010

Red Hills Wind Project L.L.C.
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1. Introduction.

This is the First Monitoring Report for the referred project activity. The purpose of this document is to:

1. Report the emission reductions generated by 123 MW wind power project in Oklahoma, USA (VCS Project ID 157, with validation report dated 31/12/2009) during the period 11th November 2008 to 31st May 2009, and
2. To serve as the basis for verification, certification and issuance of VERs.

The start of operations, marked by the start of commercial operations which is October 26, 2008, is the start of the crediting period, which will last for ten years from this moment, as per the PD.

The start of the monitoring period for this Monitoring Report is November 11th, 2008, because that is the date the first turbine was commissioned. There were tests going on beforehand, for example 1 MWh was generated on November 7th 2008, but as this date was before the official commissioning of the first turbine, this generation was not considered. The start of the monitoring period is therefore November 11th, 2008.

2. General description of the project.

2.1. Project activity

The objective of the project activity is to construct, operate and maintain a wind power project in Southern Custer and Roger Mills counties in the North American state of Oklahoma. The project will provide renewable power to Southwest Power Pool (SPP) Regional Transmission Organization (RTO) with interconnection with the Western Farmers Electric Cooperative. The project will reduce greenhouse gas emissions caused by reliance on fossil fuels.

The 123 MW project activity is comprised of 82 Acciona Wind Turbine Generators (WTGs), with each WTG having a capacity of 1,5 MW. Turbines commissioning dates were as follows:

Turbine	Dates	Location	
	Commissioning	Latitude	Longitude
A1.01	12/17/08	35 32 46.69910	99 22 06.86166
A1.02	12/18/08	35 32 44.82597	99 21 57.05673
A1.03	12/17/08	35 32 37.94108	99 21 45.68363
A1.04	12/16/08	35 32 34.96413	99 21 34.86064
A1.05	12/16/08	35 32 26.21120	99 21 24.95269
A1.06	12/17/08	35 31 53.17795	99 21 42.01771
A1.07	12/18/08	35 31 53.36020	99 21 36.00451
A1.08	12/17/08	35 31 53.40978	99 21 29.15546
A1.09	12/18/08	35 31 53.30498	99 21 23.40115
A1.10	12/16/08	35 31 53.34609	99 21 17.52471
A1.11	12/18/08	35 31 53.31048	99 21 11.44505
A1.12	12/17/08	35 31 53.37973	99 20 59.74539
A1.13	12/17/08	35 31 53.47098	99 20 53.54401
A1.14	12/18/08	35 31 53.59599	99 20 44.94563
A2.01	11/25/08	35 33 03.71817	99 25 24.87123
A2.02	11/25/08	35 33 03.79131	99 25 30.87131
A2.03	12/12/08	35 33 03.84881	99 25 37.01788
A2.04	11/26/08	35 33 03.76545	99 25 43.04711
A2.05	11/24/08	35 33 03.88504	99 25 51.48664
A2.06	12/04/08	35 33 18.23004	99 26 03.68256
A2.07	11/25/08	35 33 18.06794	99 26 09.80187
A2.08	12/07/08	35 33 18.38151	99 26 15.91701
A2.09	11/25/08	35 33 19.36490	99 26 22.07751
A2.10	12/07/08	35 33 17.58203	99 26 30.42400
A3.01	12/12/08	35 32 41.14209	99 24 12.59977
A3.02	12/12/08	35 32 41.11453	99 24 18.54139
A3.03	12/10/08	35 33 02.31001	99 24 14.46753
A3.04	12/12/08	35 33 02.25307	99 24 20.64588
A3.05	12/18/08	35 32 58.80764	99 24 03.95839
A3.06	12/18/08	35 32 46.77846	99 24 26.87370
A3.07	12/14/08	35 32 46.85242	99 24 33.05712
A3.08	12/14/08	35 32 46.82775	99 24 39.31740
A3.09	12/14/08	35 32 45.61453	99 24 51.28095
A3.10	12/14/08	35 32 45.37438	99 24 57.62711
A3.11	12/15/08	35 32 45.62098	99 25 03.98985
A4.01	12/02/08	35 32 18.52894	99 24 44.13472
A4.02	12/12/08	35 32 28.86107	99 25 14.79755
A4.03	12/05/08	35 32 28.64540	99 25 20.58721
A4.04	12/07/08	35 32 28.59273	99 25 26.44690
A4.05	12/07/08	35 32 29.24218	99 25 38.58372
A4.06	12/14/08	35 32 29.94703	99 25 44.78251
A4.07	12/07/08	35 32 47.46958	99 25 52.76057
A4.08	12/18/08	35 32 45.87116	99 26 00.30700
A4.09	12/01/08	35 32 44.43373	99 26 10.44258
A4.10	12/02/08	35 32 45.58577	99 26 19.22241
A4.11	12/01/08	35 32 46.23892	99 26 28.20228
A5.01	12/05/08	35 32 01.54547	99 24 05.50626
A5.02	11/19/08	35 32 02.13378	99 24 11.59560
A5.03	11/18/08	35 32 02.26884	99 24 17.73608
A5.04	12/04/08	35 32 06.14133	99 24 26.42905
A5.05	12/06/08	35 32 06.39011	99 24 32.75220
A5.06	12/01/08	35 32 12.26176	99 24 52.18423
A5.07	11/19/08	35 32 12.17890	99 24 58.48484
A5.08	12/06/08	35 32 07.01081	99 25 08.26812
A5.09	12/05/08	35 32 06.74851	99 25 14.51124
A5.10	11/18/08	35 32 06.28833	99 25 22.64503
A5.11	12/01/08	35 32 08.55236	99 25 34.81980
A5.12	11/18/08	35 32 08.67946	99 25 40.94305
A6.01	11/11/08	35 31 45.20520	99 24 53.53410
A6.02	11/14/08	35 31 45.78695	99 24 59.65329
A6.03	11/16/08	35 31 46.00956	99 25 06.65636
A6.04	11/14/08	35 31 46.06713	99 25 12.68871
A6.05	11/17/08	35 31 46.03456	99 25 18.90903
A6.06	11/18/08	35 31 45.77848	99 25 24.89676
A6.07	12/06/08	35 31 49.20243	99 25 34.56340
A6.08	11/18/08	35 31 49.24920	99 25 40.67346
A6.09	11/15/08	35 31 52.61411	99 25 55.69097
A6.10	11/15/08	35 31 52.34888	99 26 03.97502
A6.11	11/15/08	35 31 52.13432	99 26 11.66682
A6.12	11/14/08	35 31 53.06692	99 26 18.03149
A7.01	12/07/08	35 31 54.80032	99 23 22.56216
A7.02	12/07/08	35 31 53.49177	99 23 32.52954
A7.03	12/05/08	35 31 54.76104	99 23 39.64153
A7.04	12/05/08	35 31 54.71697	99 23 45.76742
A7.05	12/07/08	35 31 54.72374	99 23 51.85400
A7.06	12/11/08	35 31 42.74456	99 24 07.97127
A7.07	12/18/08	35 31 42.67484	99 24 14.14334
A7.08	12/04/08	35 31 42.65221	99 24 20.23576
A7.09	11/26/08	35 31 42.63466	99 24 27.53667
A7.10	12/15/08	35 31 43.20576	99 24 35.60414
A7.11	12/07/08	35 31 43.79690	99 24 41.72731
A7.12	12/12/08	35 31 44.55400	99 24 47.53600

The project is located 10 miles north of Elk City in Western Oklahoma at grid coordinates: Latitude: 35.5°N Longitude: -99.4°W.

2.2. Technology employed by the project activity

The Red Hills wind project will consist of 82 Acciona AW-77/1500 Class IEC IIa turbines. Each turbine will have a hub height of 80 meters (m) and a rotor diameter of 77 m, for a total height of approximately 118.5 m. The turbines will be accessed by constructed project roads, and interconnected by communication and electric power collection cable within the wind farm.

The design of the AW-77/1500 was developed based on the experience gained by Acciona in the course of operating turbines manufactured by others, and the lessons learned from over ten years of operations were incorporated into the AW-77/1500 design. The Acciona AW77/1500 is a proprietary design that incorporates features such as the dual-bearing main shaft to reduce axial loads on the gearbox, internal access to the inside of the hub, and a wider nacelle enclosure to make servicing the AW-77/1500 easier and safer than servicing other manufacturer's turbines. The turbines also have noise insulation and utilize non-flammable materials. These design elements create an unsurpassed turbine known for performance that exceeds the highest industry standards.

Each wind turbine will be connected to a pad mount transformer located at the base of the tower. The individual pad mount transformers will be interconnected in series ("Daisy Chained") with other pad mount transformers forming a series of circuits or "strings" called the collection system. The collection system (34.5 kV electrical lines) will run underground to the project substation. Here the voltage will be increased to 138 kV and then sent via an overhead transmission line to the interconnection substation at the Point of Interconnect (POI) at Western Farmers Electric Cooperative transmission line.

3. Monitoring methodology and plan.

Among the methodologies approved by UNFCCC for grid connected electricity generation from renewable sources, ACM0002 (version 9) was chosen as the most suitable for this project activity. This baseline methodology shall be used in conjunction with the approved monitoring methodology ACM0002 "Consolidated monitoring methodology for grid-connected electricity generation from renewable sources".

Taking into account that the project used ex-ante Operating Margin and ex-ante Building Margin, the main parameter to be monitored is the Net electricity supplied to the grid by the project (EG_y), which is composed of total electricity produced (TEG_y) minus electricity consumed by the project.

The data unit will be MWh and the plant maintains the records of the total energy produced to the grid and the total energy consumed from the grid. Net electricity supply to the grid is calculated from those two data.

4. Quality Control and Quality Assurance.

4.1. QA/QC procedures

Electricity supplied to the grid by the project is measured through national standard electricity metering instruments recorded monthly by the project entity.

Two meters (Meter of Record and Check) are installed at the Point of Interconnection. Production and consumption registered by the Meter of Record alone is adequate for the purpose of billing. The Check meter should be used when the Meter of Record fails to register, in which case the

meter agent, Constellation Energy Control and Dispatch, shall adjust measurements by using the Interconnection Customer's Check meter, if installed. Both the meters are read for electricity generation and electricity consumption purposes on a monthly basis.

The import of electricity from the grid is recorded by the same meters, since these are import-export meters. Net electricity supply to the grid (EG_y), the total electricity produced by the project activity (TEG_y) minus the electricity consumed from the grid, is used to calculate VERs. This data has been cross-verified with the invoices raised by SPP and payment received against the invoices.

The Meter of Record and Check meters have the same accuracy level of 0.1%, and both were tested for accuracy before installation..

Serial numbers for the meters are as follows:

- Meter of Record: 82093242
- Check meter: LT-0808A309-01

4.2. Meter reading procedure

Meter of record. As per the interconnection agreement, data is telemetered to one or more locations. Such telemetered data is used as the official measurement of the amount of energy delivered from the Large Generating Facility to the Point of Interconnection.

CECD performs meter data monitoring tasks for the Red Hills wind farm. A meter communication port has been made available to CECD by Western Farmers Electric Cooperative for the Meter of Record. A meter communication port has also been made available for the Check Meter.

The order of events leading from meter readings to invoices from Southwest Power Pool is as follow:

- Bidirectional hourly meter data is directly measured by the Meter of Record
- Meter data is telemetered to CECD
- Daily meter data is sent from CECD to SPP
- SPP generates Settlement Statements based on meter data and market prices
- SPP generates an invoice based on Settlement Statements
- SPP pays Red Hills via a wire transfer

4.3. Roles and responsibilities

Organisational structure, roles and responsibilities are stated in a separate document titled: 'Monitoring and verification manual for VCS purposes'.

5. **Calibration of the meters.**

The Meter of Record was calibrated before installation on October 15th, 2008 by Western Farmers Electric Cooperative. Periodic tests should be done every two years.

The Check meter was calibrated before installation on September 6th 2008 by Schneider Electric. Even though test procedures for the Check Meter are not governed by the Interconnection Agreement and periodic tests will only be necessary every four years, periodic controls discovered the Check Meter was not reading voltage. After trying to reboot it, it did not return to normal operation. On May 1st, 2009 the decision was made to remove the meter and send it off for testing and repair, so high quality measurement is guaranteed. New calibration on the meter

was done by Power Measurement on May 11th 2009 and the meter was reinstalled on May 28th 2009.

Following data verification process, during monthly meter readings, the variation between the main meter and check meter have been less than +/- 2%. Data has been provided to verifier for verification along with excel sheet results.

6. Operation & Maintenance.

Red Hills Wind Project, L.L.C. has a two year warranty for the turbines and a two year Turbine Services Agreement with Acciona Wind Power North America LLC. For carrying out the necessary maintenance of the project activity Operation and Maintenance Agreement has been signed with Acciona Wind Energy USA LLC.

7. Calculation of emission reductions.

7.1. Emission reductions calculation equation.

The emission reduction ER_y by the project activity during a given year y is the difference between baseline emissions (BE_y), project emissions (PE_y) and emissions due to leakage (L_y), as follows:

$$ER_y = BE_y - PE_y - L_y$$

7.2. Project emissions.

The project involves the operation of a zero-emission wind farm, so $PE_y = 0$

7.3. Leakage.

According to ACM0002, the main emissions potentially giving rise to leakage in the context of electric sector projects are emissions arising due to activities such as power plant construction, fuel handling (extraction, processing, and transport), and land inundation (for hydroelectric projects). Project participants do not need to consider these emission sources as leakage in applying this methodology. Project activities using ACM0002 shall not claim any credit for the project on account of reducing these emissions below the level of the baseline scenario. Thus the leakage emissions are NIL.

There is no leakage to this project so $L_y = 0$. Thus, $ER_y = BE_y$ i.e. the emission reductions are the baseline emissions in this project.

7.4. Baseline Emissions.

The baseline emissions (BE_y in tCO_2) are the product of the baseline emissions factor (EF_y in tCO_2/MWh) times the electricity supplied by the project activity to the grid (EG_y in MWh).

$$BE_y = EF_y * EG_y$$

Auxiliary power supply will be required for operation of equipment like hydraulic motors and yaw system for which active power will be drawn from the grid. The metering of the drawn power will be done by the same import-export meters.

Net electricity supply to the grid (EG_y) is the total electricity produced by the project activity (TEG_y^1) minus the electricity consumed from the grid.

Baseline emission factor (EF_y) has been calculated ex-ante and will not be updated during the crediting period of ten years. As per PD registered, $EF_y=0.67$ tCO₂/MWh.

Net electricity supplied to the grid by the project (EG_y) is measured by the meters, resulting in the net production figures shown in the below table:

Month	METER OF RECORD (MWh)		CHECK METER (MWh)		CO2 CALCULATION CHECK CORRECT (MWh)		
	Consumption	Production ($TEG_{y,MR}$)	Consumption	Production ($TEG_{y,CM}$)	Max consumpt.	Min production (TEG_y)	Net production (EG_y)
13 Nov. 2008 - 30 Nov. 2008	57.20	881.00	51.98	754.11	57.20	881.00	823.80
December 08	45.90	7,802.00	47.17	7,800.03	47.17	7,800.03	7,752.86
January 09	55.11	29,023.00	60.51	29,018.74	60.51	29,018.74	28,958.24
February 09	20.58	40,575.00	21.06	40,585.36	21.06	40,575.00	40,553.94
March 09	25.12	44,752.00	25.66	41,390.54	25.12	44,752.00	44,726.88
April 09	20.70	44,895.00	0.66	4,540.82	20.70	44,895.00	44,874.30
May-09	58.81	25,722.00	7.69	3,028.28	58.81	25,722.00	25,663.19
	283.42	193,650.00	214.71	127,117.88	290.56	193,643.77	193,353.21
Check meter programmed Nov 15th					Baseline		0.67 tCO ₂ /MWh
Check meter failure noticed March 24th					Emission reductions	129,546.65	VERs

The original meter reading of the Meter of Record with the related invoices and payment details during the monitoring period will be provided to the verifier.

7.5. Emission reductions.

As explained above, $ER_y = BE_y$.

Even though the Meter of Record has been working properly in the crediting period for which this report is prepared and this measurement alone is adequate for the purpose of billing, during the time when the Check Meter was functioning properly for the whole month, this data has been taken into account as well, and the “minimum” export and ‘maximum’ import data from both meters has been used for a conservative approach. Total emission reductions during the monitoring period were 129,546 tn CO₂

7.6 Comparison with PD estimate.

PERIOD MONITORED	11 th November 2008 to 31 st May 2009	
Total estimated reduction in PD	293,839	tCO ₂ per annum
Estimated reduction for the period	161,007	tCO ₂ for the 200 days
Real reduction	129,546	tCO ₂
Deviation	-20%	

The deviation calculation is purely pro-rated by the number of days in the monitoring period, and does not correlate with the wind pattern during the year.

The reason for the deviation between estimated and real emission reductions is that the beginning of the period marks the start of operation of the wind farm, when electricity production was lower.

Emission reductions for the remainder of the period were in line with PD estimates.

8. Information Reference List.

¹ To be conservative, TEG_y is the minimum production from the Meter of Record production ($TEG_{y,MR}$) and the Check Meter production ($TEG_{y,CM}$).

Reference no.	Document or type of information
1	Final Project Document for VCS project '123 MW wind power project in Oklahoma, USA', VCS registration reference n° VCS157 dated November 2008, VCS website reference: https://vcsregistry1.apx.com/mymodule/ProjectDoc/EditProjectDoc.asp?id1=157
2	Final validation report n° CCP.Vol.0399, issued by SGS United Kingdom Ltd, dated on November 18 th 2009, signed on December 2 nd 2009
3	Monitoring and verification manual for VCS purposes, date approved 12 October 2008
4	Training evidence, dated 27 October 2008
5	Initial calibration certificate for Meter of Record dated 15 th October 2008
6	Initial calibration certificate for Check meter dated 6 th September 2008
7	Second calibration certificate for Check meter dated 11 th May 2009
8	Excel monthly deviation sheets if we decide it for data verification process
9	Excel sheet for net electricity calculation for period 11th November 2008 to 31 st May 2009
10	Invoices from period November 2008 to May 2009
11	Payment received from invoices period November 2008 to May 2009
12	Monitoring report dated 3 rd May 2010

9. Submission and authorization

This monitoring report has been prepared and submitted by the Project Entity, Red Hills Wind Project L.L.C. The below officer declares that the contents of the report provides an accurate representation of the monitoring results.

Name: Chris Vickery

Position: Settlement Specialist