

VERIFICATION REPORT FOR DEMPSEY RIDGE WIND PROJECT



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Summary:

The Dempsey Ridge Wind Farm (Project) consists of electricity generation from a renewable source and its provision to the Southwest Power Pool (SPP) electricity grid with interconnection with AEP West. Through installation of 66 Gamesa 2.0 MW turbines the project activity results in the reduction of greenhouse gases through displacement of carbon dioxide (or CO₂) emissions from fossil fuel combustion for electricity generation.

In March of 2014, Dempsey Ridge Wind Farm, LLC (DRWF) contracted with Ruby Canyon Engineering (RCE) to perform the verification of the reporting period January 1, 2013 – December 31, 2013. RCE performed a site visit in April 2014 and subsequently completed a detailed document review of relevant Project information.

The purpose of the verification is to ensure that the project activity was implemented according to the monitoring plan, that the emission reduction assertion submitted by DRWF is materially correct and free of errors and omissions, and that the Project meets all criteria requirements. Specifically, the Project was assessed against the Clean Development Mechanism methodology ACM0002 (versions 12.1.0), Verified Carbon Standard (Version 3.4), and the validated VCS Project Description (dated November 11, 2011). The Project Monitoring Report v2.0 (Second Monitoring Report) dated May 21, 2014, and the Project Monitoring Plan were reviewed for compliance to the listed criteria as well as other relevant criteria and guidance documents provided by VCS.

During the verification process, RCE completed a desk review of the monitoring report and associated documents and a site visit to confirm that the project activity was implemented as stated in the validated VCS Project Description. The site visit included a review of data and information control systems, interviews with key personnel, and visual inspection of monitoring equipment. Following the site visit, RCE issued Corrective Action Requests (CARs), and Clarification Requests (CLs). During the course of verification activities, DRWF provided adequate responses to one CAR and one CL.

RCE concludes, to a reasonable level of assurance, that the Project's GHG assertion of 255,689 metric tonnes of CO₂ equivalent emissions for the period of January 1, 2013 to December 31, 2013 is fairly stated.

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INTRODUCTION

1.1 Objective

The objective of the verification is to ensure that the GHG emission assertion made by Dempsey Ridge Wind Farm (DRWF) is materially correct and that the data provided are accurate, complete, and transparent. Additionally, RCE ensured that the Project is in conformance with the criteria as stated in Section 1.2.

1.2 Scope and Criteria

The scope of the Project includes the organizational boundaries of the DRWF and all the power plants connected physically to the same electricity system to which the DRWF is connected. The GHG included in the scope of the project is baseline CO₂.

RCE conducted the verification based upon the following criteria:

- Verified Carbon Standard version 3.4 (October 8, 2013),
- VCS Program Guide version 3.5 (October 8, 2013),
- Validation and Verification Manual version 3.1 (October 8, 2013),
- Clean Development Mechanism (CDM) methodology ACM0002, Version 12.1.0, "Consolidated baseline methodology for grid-connected electricity generation from renewable sources",
- Validated VCS Project Description, dated November 11, 2011,
- Project Validation Report, dated December 19, 2011, and
- ISO 14064-3 "Greenhouse gases – Part 3: Specification with guidance for the validation and verification of greenhouse gas assertions".

Additionally, RCE reviewed the Project's reporting period-specific Second Monitoring Report version 1 dated March 31, 2014, including the monitoring plan, during verification activities.

1.3 Level of Assurance

RCE conducted the verification to a reasonable level of assurance.

Materiality was defined as errors, omissions, or discrepancies resulting in misstatement of greater than five percent of the Project's GHG assertion. Additionally, qualitative non-conformances with criteria requirements were also considered material during the verification process.

1.4 Summary Description of the Project

The Project activity consists of the installation of 66 turbines and the generation of renewable energy fed into the grid from DWRF near Cheyenne, Oklahoma. The Project is located at latitude: 35.5°N and longitude: -99.48°W over an area of approximately 7,500 acres. The reporting period under verification is January 1, 2013 to December 31, 2013.

Emission reductions are achieved by the project through the displacement of emissions from fossil fuel combustion for electricity generation. The Project reduces the quantity of carbon dioxide released to the atmosphere by creating a portion of electricity consumed from a zero emission source. In the absence of the Project, the majority of electricity produced would be from coal or natural gas.

2 VERIFICATION PROCESS

2.1 Method and Criteria

The verification process involved the following independent and objective activities:

- Select a Verification Team;
- Perform a Conflict of Interest Review;
- Review the validated Project Description;
- Review the Validation Report;
- Review the previous Verification Report;
- Review the current Monitoring Report version 01, dated March 31, 2014;
- Develop a verification plan and risk-based sampling plan;
- Conduct a kick-off meeting with DRWF;
- Conduct a site visit to the Project;
- Review the Project information control systems and quality control procedures;
- Review the Project's emission reduction calculations;
- Issue corrective action requests and clarification requests;
- Issue a verification report; and
- Conduct an exit meeting with DRWF.

The verification team was selected according to RCE's GHG Verification Policies & Procedures to ensure team members are qualified to perform verification activities pertaining to the Project. The verification team consisted of the following individuals:

Lead Verifier: Michael Côté

Team Member: Samantha Phillips

Senior Internal Reviewer: Bonny Crews

Prior to verification activities, RCE performed a Conflict of Interest Assessment to determine whether any potential conflicts exist with the project developer. No issues were discovered that would affect the impartiality or independence of the verification team.

RCE held a kick-off call with DRWF on March 20, 2014. The purpose of the kick-off call was to introduce the DRWF personnel and the RCE verification team, review the verification objectives and process, review the VCS requirements, and to confirm the verification schedule.

RCE developed a verification plan and sampling plan that were used throughout the verification of the Project. The plan was created after reviewing the Project Monitoring Report, validated Project Description, and the VCS Standard (Version 3.4). RCE performed a risk assessment based upon the criteria listed above and evidence provided to RCE by DRWF for the current reporting period.

RCE used the verification plan throughout the reporting period as a basis for assessing the completeness, consistency, accuracy, and transparency of the Project's GHG emission reductions. RCE conducted a site visit at the Project location near Cheyenne, Oklahoma on April 16, 2014 as described in Section 2.4.

2.2 Document Review

RCE performed a risk-based analysis of the Project and document sampling in order to verify that the Project is in conformance with all criteria requirements and that the stated emission reductions are materially correct. RCE reviewed the following documents:

- Validated Project Description,
- Validation report,
- Previous verification report,
- Monitoring report (dated March 31, 2014)
- AEP check meter hourly data,
- AEP revenue meter hourly data and calculation spreadsheet,
- AEP revenue and check meter test results from 2011 & 2013,
- Electricity consumption invoices,
- Southwest Power Pool weekly market invoices, and
- Daily settlement statements

2.3 Interviews

RCE held discussions with the following personnel during the verification process including discussions during the site visit:

- Chris Vickery, Acciona Energy: Chris is responsible for development and maintenance of the Project Monitoring Report and emissions reductions calculations. He was the primary contact during the verification and addressed all Corrective Action Requests (CARs), Clarification Requests (CLs), and requests for additional documentation (ADs).
- Michael Campbell, Acciona Energy: Michael is responsible for operating and maintaining the Project. During the site visit, Michael provided a tour of Project equipment and described the processes for maintaining the Project including data collection, equipment calibration checks, and other quality assurance/ quality control procedures.

Acciona Energy owns DRWF, however, DRWF is the project proponent and owns the emission reduction credits.

2.4 Site Inspections

RCE conducted a site visit at the Project location near Cheyenne, Oklahoma on April 16, 2014. The site visit activities included a physical inspection of the Project operations and a review of the Project information control systems, data handling, QA/QC activities, and equipment calibration schedules. RCE confirmed the operation of all sixty-six turbines during a tour of the facility and adjacent leased properties. In addition, RCE inspected the monitoring equipment in the main switch gear room and toured the electric

substation from which the electricity is delivered to the grid. During the site visit, RCE discussed the day-to-day operation of equipment, data aggregation and compilation, environmental and regulatory compliance, and emission reductions quantification.

2.5 Resolution of Findings

During the verification process, RCE issued one corrective action request, one clarification request, and seven additional documentation requests. These requests were documented through RCE's list of findings. DRWF sufficiently addressed all requests as documented below.

Corrective Action Requests (CARs) and Clarification Requests (CLs)		
ID #	Action Item	Resolution
CAR 1.	The monitoring plan does not include adequate detail for the following areas: - Controls and procedures for data quality assurance checks - Controls to ensure participating staff are sufficiently qualified.	5/22/2014: Data quality assurance activities that take place were not initially mentioned in monitoring plan. Revision was made to the monitoring plan section of the Monitoring Report that reflects currently implemented data quality assurance checks by Dempsey Ridge. The revision ensures consistent data quality checks into the future. 5/22/2014: The report was revised to include a description Acciona's ISO 9001 certification and continual improvement on operations and customer satisfaction.
CL 1.	What procedures were followed and what equipment was used to test the AEP revenue and check meters?	5/5/2014: AEP uses written standard procedures from their company Standards Manual for consistent and accurate testing of all their metering equipment. Tests are performed using a WECO Portable Automated Test Set.
AD 1.	Please provide evidence that electric meters are calibrated and tested at least once every two years, per the Larger Generator Interconnection Agreement (LGIA)	4/17/2014: The two most recent AEP meter tests were provided. Tests were completed on 8/29/2011 and again on 8/14/2013.
AD 2.	Please provide electricity generation invoices for the preceding Thursday of each date: - January 9, 2013 - March 4, 2013 - April 24, 2013 - June 19, 2013 - July 21, 2013 - September 11, 2013 - November 5, 2013 - December 19, 2013	4/21/2014: DRWF submitted the requested weekly electricity generation invoices: - January 24, 2013 - February 28, 2013 - April 24, 2013 - June 13, 2013 - July 18, 2013 - Sep 11, 2013 - October 31, 2013 - December 19, 2013
AD 3.	Please provide the corresponding settlement statements for the requested weeks.	4/21/2014: DRWF submitted the settlement statements with kWh production and dollar amount for each of the above weeks.

AD 4.	Please provide the 2013 electricity consumption invoices.	4/17/2014: Monthly electricity invoices of consumption were provided for all 12 months of 2013.
AD 5.	Please provide the Dempsey Ridge Wind Farm LGIA.	4/17/2014: DRWF submitted the LGIA for Dempsey Ridge and the Southwest Power Pool.
AD 6.	Please provide hourly data outputs for both the revenue and check meters.	4/21/2014: DRWF submitted the hourly output data for the Revenue meter and two check meters.
AD 7.	Please provide evidence that ownership of emission reduction credits has not changed since project validation.	6/2/2014: Land use agreement between Dempsey Ridge and land owners was provide. Dempsey Ridge retains ownership of emission reduction credits.

2.5.1 Forward Action Requests

There were no forward action requests.

2.6 Eligibility for Validation Activities

RCE did not perform validation activities as part of the verification process.

3 VALIDATION FINDINGS

No validation activities took place during the verification of this reporting period.

3.1 Participation under Other GHG Programs

The Project does not participate in any other GHG programs.

3.2 Methodology Deviations

DRWF did not identify or request methodology deviations for this reporting period.

3.3 Project Description Deviations

DRWF identified and appropriately justified one project description deviation in the Monitoring Report. RCE approved this project description deviation for the Project during this reporting period.

The validated Project Description states that the project start date will be the date the wind farm begins commercial operation and was anticipated to be December 15, 2011. The Project did not reach commercial operation until April 27, 2012 due to delays during the construction and commissioning of the project, however the Project began generating electricity on January 1, 2012. According to the VCS Standard v3.4, "the start date is the date on which the project began generating GHG emission reductions or removals," therefore the crediting period is from January 1, 2012 until December 31, 2022.

RCE approved this deviation because it does not impact the applicability of the methodology, or additionality, or appropriateness of the baseline scenario, and the Project remains in compliance with VCS rules.

3.4 Grouped Project

The Project is not a grouped project.

4 VERIFICATION FINDINGS

4.1 Project Implementation Status

The Project start date is January 1, 2012, the date upon which the turbine first began operation. The crediting period is for ten years ending on December 31, 2022. With the exception of the deviations noted in Sections 3.2 and 3.3 and in this section below, RCE found that the Project was implemented in conformance with the validated Project Description. RCE confirmed that the Project continues to meet the requirements of the VCS Standard version 3.4.

RCE confirmed that there were no changes to the project proponents or other entities involved in the project for this reporting period. Dempsey Ridge Wind Farm is identified as the Project Proponent in the Monitoring Report. During verification activities, RCE reviewed a land lease agreement between DRWF and the land owner and confirmed that ownership of all emission reduction credits generated by the Project is solely owned by DRWF. The project proponent attested that DRWF owns the rights to all environmental attributes and is not claiming Renewable Energy Credits for this reporting period. Emission reduction credits associated with the Project are only registered with the VCS program.

The electricity generation and consumption of the Project is monitored continuously with an electric revenue meter owned and maintained by AEP and located at the project substation. In the event of a failure there are two back-up (check) meters installed at the same location as the revenue meter, one owned by AEP and the other by DRWF.

The AEP revenue and check meters are tested at least once every two years, per the Large Generator Interconnection Agreement (LGIA). RCE reviewed the test certificates and confirmed that the meters' "as found" and "as left" conditions indicate that the meters were reading accurately. RCE also confirmed that the frequency of the test is occurring in accordance with the Monitoring Plan.

4.2 Accuracy of GHG Emission Reduction and Removal Calculations

DRWF calculated the Project's emission reductions in accordance with the equations in ACM0002 v12.1.0. RCE sampled the Project's raw data recorded by the SCADA system during the reporting period to ensure the accuracy of reported data and to ensure that there were no transcription errors between data sets. RCE reviewed the DRWF GHG assertion spreadsheet to ensure the accuracy of the formulas, emission factors applied, and functionality of the spreadsheet.

The primary Project data includes the electricity generated and supplied to the grid and the electricity consumed by the Project. DRWF uses these parameters to calculate the amount of carbon dioxide displaced by the Project. The AEP revenue meter records the amount of electricity to the grid and the

amount of electricity consumed. It is programmed to apply a loss factor of 0.028% to generated electricity for compensation of any losses between the Dempsey Ridge substation and the SPP.

Baseline emissions from wind power generation are calculated by multiplying the quantity of net electricity produced and supplied to the grid by the combined margin CO₂ emission factor for grid connected power generation (0.647 tCO₂/MWh). RCE verified that validated parameters were appropriately applied in the calculation of emission reductions for this reporting period.

There are no project emissions from this wind power generation project.

RCE recalculated the emission reductions for the entire reporting period and found the GHG emission reduction calculations to be in conformance with the ACM0002 v12.1.0 methodology and the validated Project Description, and to be free of material misstatement.

4.3 Quality of Evidence to Determine GHG Emission Reductions and Removals

DRWF provided adequate documentation for the emission reduction calculations as well as its information control systems, data management processes, and data quality assurance procedures. RCE reviewed the Project's Monitoring Report, meter test reports, raw data, and all emission reduction calculations. Additionally, RCE interviewed Project personnel to assess their understanding of the Project equipment and data outputs including data management. Metered data is collected and recorded by the SCADA system and the data is stored on the server at the Project location. Additionally, the data is saved and backed-up in Acciona's PI System in Chicago.

RCE reviewed a sample from the raw data files and confirmed that the revenue meter hourly data matched the hourly kWh recorded on the SPP EIS settlement statements with no errors. RCE compared the dollar amount on the sampled SPP EIS settlement statements to the dollar amount on the SPP Weekly Market Invoices and found errors of less than half a percent. RCE also confirmed that the all invoiced electricity consumption matched the revenue meter hourly consumption. Invoiced consumption was one MWh more than the revenue meter data.

RCE determined the above errors to be non-material and found the information provided to be transparently documented and in accordance with requirements of the ACM0002 v12.1.0 methodology and the validated Project Description with the exceptions of the deviations noted in Sections 3.2 and 3.3 above.

4.4 Non-Permanence Risk Analysis

Not applicable.

5 VERIFICATION CONCLUSION

RCE conducted a risk-based analysis of the Dempsey Ridge Wind Project including a strategic review of the Project data, documentation, and emission reduction calculations. RCE concludes to a reasonable level of assurance that the GHG assertion is free of material misstatement. The emission reductions resulting from avoided emissions of methane for the reporting period January 1, 2013 to December 31, 2013 can be considered in conformance with the:

- Verified Carbon Standard version 3.4 (October 8, 2013),
- Clean Development Mechanism methodology ACM0002 v12.1.0, “Consolidated baseline methodology for grid connected electricity generation from renewable sources,” and
- Validated VCS Project Description, November 11, 2011

Verification period: From January 1, 2013 – December 31, 2013
Verified GHG emission reductions and removals in the above verification period:

Year	Baseline emissions or removals (tCO ₂ e)	Project emissions or removals (tCO ₂ e)	Leakage emissions (tCO ₂ e)	Net GHG emission reductions or removals (tCO ₂ e)
2013	255,689	0	0	255,689

6 LEAD AUDITOR SIGNATURE

Michael Côté
 President

7 INTERNAL REVIEWER SIGNATURE

Bonny Crews
 Senior Environmental Scientist