



**Verified Carbon
Standard**

DEMPSEY RIDGE WIND PROJECT VERIFICATION REPORT



RUBY CANYON ENVIRONMENTAL

Document Prepared by Ruby Canyon Environmental, Inc.

Project Title	Dempsey Ridge Wind Project
Version	1.0
Report ID	2021_RCE_VCS_6

Report Title	Verification Report for Dempsey Ridge Wind Project
Client	3Degrees Group, Inc.
Pages	12
Date of Issue	6-May-2021
Prepared By	Ruby Canyon Environmental, Inc.
Contact	743 Horizon Court, Suite 385 Grand Junction, CO 81506 1-970-241-9298

	www.rubycanyonenv.com
Approved By	David LaGreca
Work Carried Out By	Jessica Stavole-Carter

Summary:

The Dempsey Ridge Wind Project (Project) consists of electricity generation from a renewable source. The project is located within the Southwest Power Pool (SPP) electricity grid system. Through the installation of 66 turbines with a total capacity of 132 MW, the project activity results in the reduction of greenhouse gases (GHG) through displacement of carbon dioxide (CO₂) emissions from fossil fuel combustion for electricity generation.

3Degrees Group, Inc. (3Degrees) contracted with Ruby Canyon Environmental (RCE) to perform the verification of the monitoring period 1 January 2020 - 31 December 2020. The current verification included a detailed document review of relevant Project information. RCE conducted a virtual site visit at the Project site during the verification on 13 April 2021.

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 3Degrees is materially correct and free of errors and omissions, and that the Project meets all criteria requirements. Specifically, the Project was assessed against the requirements of the Clean Development Mechanism methodology ACM0002, Version 12.1 – “Grid-connected electricity generation from renewable resources” and the validated VCS Project Description dated 11 November 2011. RCE assessed the Project Monitoring Report, including the Project’s monitoring plan, based on the above criteria documents as well as relevant VCS criteria and guidance documents.

During the verification process, RCE completed a desk review of the Monitoring Report and associated documents to confirm that the project activity was implemented as stated in the VCS Project Description including a review of data and information control systems, interviews with key personnel, and visual inspection of monitoring equipment. RCE issued corrective action requests, additional documentation requests, and clarification requests as necessary. During the course of verification activities, 3Degrees provided adequate responses to five Additional Documentation Requests and one Clarification Request.

RCE concludes, to a reasonable level of assurance, that the Project’s greenhouse gas (GHG) assertion of 223,436 metric tonnes of CO₂ equivalent emissions for the period of 1 January 2020 – 31 December 2020 is fairly stated.

1	Introduction	4
1.1	Objective	4
1.2	Scope and Criteria	4
1.3	Level of Assurance	4
1.4	Summary Description of the Project	5
2	Verification Process	5
2.1	Method and Criteria	5
2.2	Document Review	6
2.3	Interviews	6
2.4	Site Inspection	7
2.5	Resolution of Findings	8
2.5.1	Forward Action Requests	8
2.6	Eligibility for Validation Activities	9
3	Validation Findings	9
3.1	Participation under Other GHG Programs	9
3.2	Methodology Deviations	9
3.3	Project Description Deviations	9
3.4	Grouped Project	9
4	Verification Findings	10
4.1	Project Implementation Status	10
4.2	Safeguards	10
4.2.1	No Net Harm	10
4.2.2	Local Stakeholder Consultation	10
4.3	AFOLU-Specific Safeguards	10
4.4	Accuracy of GHG Emission Reduction and Removal Calculations	11
4.5	Quality of Evidence to Determine GHG Emission Reductions and Removals	11
4.6	Non-Permanence Risk Analysis	12
5	Verification conclusion	12

1 INTRODUCTION

1.1 Objective

The objective of the verification is to ensure that the GHG emission assertion made by the Project 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 Dempsey Ridge Wind Project and all of the grid-connected power plants in the SPP region. The GHG included in the scope of the project is CO₂. RCE conducted the verification based upon the following criteria:

- Verified Carbon Standard Version 4.0 (19 September 2019);
- VCS Program Guide Version 4.0 (19 September 2019);
- Validation and Verification Manual Version 3.2 (October 19, 2016);
- Clean Development Mechanism (CDM) methodology ACM0002, Version 12.1, “Grid-connected electricity generation from renewable resources”;
- Clean Development Mechanism (CDM) Tool 07, “Tool to calculate the emission factor for an electricity system,” Version 06.0
- Validated VCS Project Description, dated 11 November 2011;
- ISO 14064-2:2006 “Greenhouse gases – Part 2: Specification with guidance at the project level for quantification, monitoring and reporting of greenhouse gas emission reductions or removal enhancements”.
- ISO 14064-3:2006 “Greenhouse gases – Part 3: Specification with guidance for the validation and verification of greenhouse gas assertions”.

Additionally, RCE reviewed the Project’s monitoring period-specific Monitoring Report Version 2.0 dated 23 March 2021, including the monitoring plan, during verification activities.

1.3 Level of Assurance

RCE conducted the verification to a reasonable level of assurance. The VCS Standard defines materiality as errors, omissions, or discrepancies resulting in misstatement of greater than five percent of the Project’s GHG assertion. Additionally, RCE considered qualitative non-conformances with criteria requirements as material during the verification process.

1.4 Summary Description of the Project

The Project activity consists of the installation of 66 wind turbines and the generation of renewable energy fed into the grid from Dempsey Ridge Wind Project across the span of Beckham and Roger Mills counties in Oklahoma, USA. The Project is located over an area of approximately 7,500 acres. The monitoring period under verification is 1 January 2020 – 31 December 2020.

The site contains 66 Gamesa G90/2000-IEC II A at 2 MW capacity each. Dempsey Wind Farm, LLC holds the Right of Use of Project Activity and has sole ownership of the wind power plant, equipment, and systems. There is an agreement in place where Dempsey sells VCU's generated by the Project to 3Degrees.

The project achieves emission reductions through the replacement of electricity into the SPP grid that otherwise would have been produced by fossil fuel combustion or a mix of fossil fuel and renewable electricity generation. The Project reduces the quantity of CO₂ released to the atmosphere by generating electricity using 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;
- Conduct a kick-off meeting with 3Degrees;
- Review the validated Project Description;
- Review the Validation Report;
- Review the Monitoring Report;
- Develop a verification plan and risk-based sampling plan;
- Conduct a virtual site visit at the Project site;
- Review the Project information control systems and quality control procedures;
- Review the Project's emission reduction calculations;
- Issue corrective action requests, additional documentation requests, and clarification requests as necessary;
- Issue a verification report and verification representation; and
- Conduct an exit meeting with 3Degrees.

RCE selected the verification team according to its 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: Jessica Stavole-Carter

Internal Reviewer: David LaGreca

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 3Degrees on 22 March 2021. The purpose of the kick-off call was to introduce 3Degrees 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. RCE created the plans after reviewing the Project Monitoring Report, validated Project Description, and the VCS Standard (Version 4.0). RCE performed a risk assessment based upon the criteria listed above and evidence provided to RCE by 3Degrees for the current monitoring period.

RCE used the verification plan throughout the verification as a basis for assessing the completeness, consistency, accuracy, and transparency of the Project's GHG emission reductions. RCE conducted a virtual site visit at the Project location on 13 April 2021 as described below 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;
- Monitoring Report;
- Emission reduction calculation spreadsheet;
- Dempsey Wind meter hourly data;
- REC and VCU ownership documentation; and
- Meter calibration reports for the primary meter dated 22 August 2018 and 29 January 2021.

2.3 Interviews

RCE held discussions with the following personnel during the verification:

- Gary Barrett, Acciona: Gary is the Dempsey Ridge Wind Farm site manager and is responsible for the management of project data and operations. Gary provided a tour of the site and Project components during the virtual site visit on 13 April 2021.
- Teresa Fukuda, 3Degrees: Teresa was responsible for the development and maintenance of the Project Monitoring Report and emissions reductions calculation. She also addressed all Corrective Action Requests (CARs), additional documentation requests (ADRs), and clarification requests (CRs) as necessary.

- Nick Facciola, 3Degrees: Nick assisted with the development and maintenance of the Project Monitoring Report and emissions reductions calculation. He also addressed all Corrective Action Requests (CARs), additional documentation requests (ADRs), and clarification requests (CRs) as necessary.
- Nate Schuster, 3Degrees: Nate attended the virtual site visit and assisted with providing background information and answering questions regarding the Project and Project operations.

2.4 Site Inspection

RCE conducted a virtual site visit at the Project location near Beckham and Roger Mills counties in Oklahoma during the verification on 13 April 2021. The virtual site visit activities included a physical inspection of the Project operations and a review of the Project's information control systems, data handling, QA/QC activities, and equipment calibration schedules. RCE confirmed the presence of 66 wind turbines via the SCADA system which tracks operational information for all turbines. In addition, RCE inspected the monitoring equipment at the Dempsey Ridge substation including both the primary revenue meter and check meter. Pictures of both the primary revenue meter and check meter show serial numbers matching those listed on the calibration certificates. RCE also reviewed calibration and testing certificates for the primary and check meters. During the virtual site visit, RCE also discussed the day-to-day operation of equipment, data aggregation and compilation, environmental and regulatory compliance, and emission reductions quantification.

Typically, RCE conducts an in-person site visit during an initial project verification. However, due to the current COVID-19 pandemic, it was decided that completing an in-person site visit was impractical. The virtual site visit with Acciona and 3Degrees consisted of a combination of reviewing the Project site and data systems in place. Acciona agreed that they would be able to use a screen-sharing service for the review of their data and systems. As 3Degrees takes care of the data and calculation portion of the Project, it was agreed upon that these interviews would be held as conference calls mainly to confirm Dillion's internal QA/QC processes and data accuracy. Conducting a virtual verification site visit did not impact the integrity of the verification, nor did it prevent RCE from reaching a reasonable level of assurance. RCE also assessed the impacts Information and Communication Technology (ICT) may have on the validity and objectivity of the information gathered during remote verification. Per International Accreditation Forum Mandatory Document 4:2018 Section 4.2.4, "When using ICT, auditors/assessors and other involved persons (e.g. drone pilots, technical experts) shall have the competency and ability to understand and utilize the information and communication technologies employed to achieve the desired results of audit(s)/assessment(s). The auditor/assessor shall also be aware of the risks and opportunities of the information and communication technologies used and the impacts that they may have on the validity and objectivity of the information gathered." Both Acciona and 3Degrees confirmed that they were familiar with Microsoft Teams, the client-chosen platform for the virtual site visit, and that the platform did not impact the integrity of RCE's review. The lead verifier was provided with a tour of the Project Site and was able to confirm all necessary components. As the remote verification took place in real time, Microsoft Teams had no impact on the validity or objectivity of data gathered and presented.

2.5 Resolution of Findings

During the verification process, RCE issued five additional documentation requests (ADR) and one clarification request (CL). RCE documented these requests in the List of Findings. 3Degrees sufficiently addressed all requests as documented below.

ID#	Action Item	Resolution
ADR 1	Please provide data to confirm start date (i.e. generation data, turbine supply agreement, etc.)	May 5, 2021: 3Degrees provided the requested documentation.
ADR 2	Please provide documentation that confirms ownership of environmental attributes (Dempsey Ridge Wind Farm and Acciona).	April 20, 2021: 3Degrees provided the requested documentation.
ADR 3	Please provide raw generation data for three days from each month of the 2020 RP.	April 7, 2021: 3Degrees provided the requested documentation.
ADR 4	Please provide screenshots of the SCADA system (as seen during virtual site visit).	April 20, 2021: 3Degrees provided the requested documentation.
ADR 5	Please provide pictures of the meters confirming serial numbers (as seen during virtual site visit).	April 20, 2021: 3Degrees provided the requested documentation.
CL 1	The Notice of Commercial Operation shows May 20th as the start date.	April 20, 2021: 3Degrees stated that “Dempsey Ridge Wind Farm (owned by Acciona) has been issuing RECs, and then retiring them due to the generation of the carbon credits for renewable energy (as shown in the Dempsey Rec Retirements 1.21.21 doc). Since operation began at the site, Acciona has been issuing and subsequently retiring all of the RECs generated, which also was incurring additional fees on their end through NAR. Acciona decided to stop generating RECs altogether as of May 2020, given that they plan to continue with carbon credit generation at this time”.

2.5.1 Forward Action Requests

There were no forward action requests.

2.6 Eligibility for Validation Activities

RCE holds accreditation for validation for the relevant sectoral scope for this Project: 1. Energy (renewable/non-renewable).

3 VALIDATION FINDINGS

The only validation activity that took place during the verification was the review and approval of the project description deviation described below in Section 3.3.

3.1 Participation under Other GHG Programs

As noted in the project description, the Project has not sought or received any other form of GHG environmental credits. Dempsey Ridge Wind Farm has been issuing RECs and then retiring them due to the generation of the carbon credits for renewable energy. Since operation began at the site, Acciona has been issuing and subsequently retiring all of the RECs generated, which also was incurring additional fees on their end through NAR. Acciona decided to stop generating and retiring RECs altogether as of May 2020, given that they plan to continue with carbon credit generation at this time.

3.2 Methodology Deviations

There were no methodology deviations for this monitoring period.

3.3 Project Description Deviations

3Degrees identified two project description deviation in the Monitoring Report that applies to the current monitoring period. The validated Project Description identifies the Project start date as 15 December 2011; however, due to delays during construction and commissioning of the project, the commercial operation date was 27 April 2012. RCE approved this deviation because it does not impact the applicability of the methodology, or additionality, or appropriateness of the baseline scenario.

The PDD specifies that the revenue meter owned by AEP would be tested every two years after the construction of the project. Both the primary revenue ION 8600 meter (S/N LT-1107A404-01) and ION 86008 (S/N 1107A405) check meter were tested on 22 August 2018 and 29 January 2021 and found to be operating in a satisfactory manner. As the testing in 2021 showed that both meters were operating within acceptable accuracy and the manufacturer states that the digital meter is “tested for accuracy at the factory and remains accurate for the life of the meter, it can be reasonably concluded that the meter was functioning properly from its last calibration in 2018 through the end of the 2020 reporting period.

3.4 Grouped Project

The project is not a grouped project.

4 VERIFICATION FINDINGS

4.1 Project Implementation Status

The Project start date is 27 April 2012, the date upon which commercial operation began. The crediting period is for ten years, beginning on the initial date of project testing, 1 January 2012 and ending on 31 December 2021. RCE found that the Project was implemented in conformance with the validated Project Description with two deviations as described in Section 3.3.

RCE also confirmed that the Project continues to meet the requirements of the VCS Standard Version 4.0. Dempsey Ridge Wind Farm, LLC is identified as the Project Proponent in the Monitoring Report. During verification activities, RCE confirmed that Dempsey Ridge Wind Farm, LLC is the Project owner and operator and thus has rights to all emission reduction credits generated by the Project. Dempsey Ridge Wind Farm, LLC confirmed that the Project has not participated in or been rejected under any other GHG programs since validation or the previous verification, has not sought any other form of environmental credit, and that the GHG emission reductions generated by the Project have not become included in any other mechanism that includes GHG allowance trading. Overall, RCE concludes that the Project has been implemented in accordance with the project description.

4.2 Safeguards

4.2.1 No Net Harm

The project developer has taken several voluntary measures to ensure no net harm. The Project has been designed to avoid all permanent impacts to water features, turbines have tubular monopole structures that will inhibit perching by avian species, the Project uses the minimum lighting necessary to meet Federal Aviation Administration lighting requirements to minimize avian related light impacts, and the Project has minimized the use of overhead structures to the extent feasible with the overhead line marked at intervals with bird diverters along its entire length.

4.2.2 Local Stakeholder Consultation

Acciona conducted biological assessments, bird and bat impact studies, and wetland delineation to address wildlife concerns during the project development stage. The project proponent notified the public of the proposed Project and provided the opportunity for public comment and meeting sessions as well as a wind farm dedication and community open house where tours were offered to local stakeholders and project neighbors. The site manager also keeps a contact log to record any questions or complaints and maintains direct contact with local landowners, officials, and stakeholders.

4.3 AFOLU-Specific Safeguards

The Project is non-AFOLU and as such, AFOLU-specific safeguards do not apply.

4.4 Accuracy of GHG Emission Reduction and Removal Calculations

3Degrees calculated the Project's emission reductions in accordance with the equations in ACM0002 Version 12.1 and the validated Project Description. RCE reviewed the client's GHG assertion spreadsheet to ensure the accuracy of the formulas, emission factors applied, and functionality of the spreadsheet. RCE sampled the Project's raw data sets to ensure the accuracy of reported data and to ensure that there were no transcription errors.

The primary Project data includes the electricity generated and supplied to the grid (345,342 MWh). 3Degrees uses this data to calculate the CO₂ emissions displaced by the Project. RCE sampled the Project data recorded via the primary revenue meter and check meter. No manual or transcription errors were identified within the source data. RCE also reviewed the Deed of Representation.

3Degrees calculates baseline emissions from wind power generation 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 reviewed the calculation of the combined margin factor that 3Degrees calculated in accordance with the CDM methodological tool 07 "Tool to calculate the emission factor for an electricity system" Version 02.2.0 using a weighted average of the operating and build margin emission factors. The weighted operating margin and build margin values were consistent with the CDM methodological tool 07 default values. Per the validated Project Description, both the build margin (0.333 tCO₂/MWh) and simple operating margin (0.752 tCO₂/MWh) are calculated ex-ante and are fixed for the Project's crediting period. RCE verified that 3Degrees correctly applied all factors in the calculation of emission reductions for this monitoring period.

Per CDM's ACM0002 Version 12.1 methodology, project emissions are zero as the Project is not a geothermal, solar, thermal, or hydro project. RCE recalculated the emission reductions for the entire monitoring period and found the GHG emission reduction calculations to be in conformance with the ACM0002 Version 12.1 methodology and the validated Project Description and to be free of material misstatement. Lastly, RCE confirmed that total emission reductions increased about 0.5% from 2019, remaining relatively stable.

4.5 Quality of Evidence to Determine GHG Emission Reductions and Removals

3Degrees provided adequate documentation for the emission reduction calculations as well as the Project's 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. Dempsey Ridge Wind Farm, LLC's primary revenue meter collects and records Project data continuously. Both the primary revenue Ion 8600 meter (S/N LT-1107A404-01) and ION 86008 (S/N 1107A405) check meter were tested on 22 August 2018 and 29 January 2021 and found to be operating in a satisfactory manner.

RCE found the information provided to be transparently documented, of sufficient quantity and appropriate quality and in accordance with requirements of the ACM0002 Version 12.1 methodology and the validated Project Description.

4.6 Non-Permanence Risk Analysis

The project has no risk of non-permanence as it is a grid-connected renewable energy project and can be categorized under Sectoral Scope Number 1: Energy (renewable/non-renewable sources).

5 VERIFICATION CONCLUSION

RCE conducted a risk-based analysis of 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 the monitoring period 1 January 2020 – 31 December 2020 can be considered in conformance with the:

- Verified Carbon Standard Version 4.0 (19 September 2019),
- Clean Development Mechanism methodology ACM0002 Version 12.1, “Grid-connected electricity generation from renewable resources,” and
- Validated VCS Project Description, dated 11 November 2011

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)
2020	223,436	--	--	223,436
Total	223,436	--	--	223,436

Lead Verifier Signature



Jessica Stavole-Carter

Independent Peer Reviewer Signature



David LaGreca