

# VERIFICATION REPORT FOR CAPRICORN RIDGE 4 WIND FARM



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**Summary:**

The Capricorn Ridge 4 Wind Farm (Project) consists of electricity generation from a renewable source. The Project provides electricity to the Electric Reliability Council of Texas (ERCOT) grid with interconnection with the Lower Colorado River Authority (LCRA). Through the installation of 75 GE 1.5 MW turbines with a total capacity of 112.5 MW, the project activity results in the reduction of greenhouse gases (GHG) through displacement of carbon dioxide (CO<sub>2</sub>) emissions from fossil fuel combustion for electricity generation.

In January of 2015, NativeEnergy, Inc. (NativeEnergy) contracted with Ruby Canyon Engineering (RCE) to perform the verification of the reporting period 1 January 2014 – 31 December 2014. RCE performed a site visit in March 2015 and subsequently completed a detailed document review of relevant Project information.

The purpose of the verification is to ensure that the Project Proponent implemented the project activity according to the monitoring plan, that the emission reduction assertion submitted by NativeEnergy is materially correct and free of errors and omissions, and that the Project meets all criteria requirements. Specifically, RCE assessed the Project against the Clean Development Mechanism methodology ACM0002, Version 09 – “Consolidated baseline methodology for grid-connected electricity generation from renewable sources” and the validated VCS Project Description dated May 19, 2010. 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 and a site visit to confirm that NextEra implemented the project activity 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. During the desktop review, RCE issued Corrective Action Requests, Clarification Requests, and requests for additional documentation. During the course of verification activities, NativeEnergy provided adequate responses to all requests.

RCE concludes, to a reasonable level of assurance, that the Project’s GHG assertion of 168,308 metric tonnes of CO<sub>2</sub> equivalent emissions for the period of 1 January 2014 – 31 December 2014 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 NativeEnergy 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 Capricorn Ridge 4 Wind Farm Project and all of the grid-connected power plants in the ERCOT region. The GHG included in the scope of the project is CO<sub>2</sub>.

RCE conducted the verification based upon the following criteria:

- Verified Carbon Standard Version 3.5 (March 25, 2015);
- 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 09, “Consolidated baseline methodology for grid-connected electricity generation from renewable sources”;
- Clean Development Mechanism (CDM) Tool 07, “Tool to calculate the emission factor for an electricity system,” Version 01.1
- Validated VCS Project Description, dated 19 May 2010;
- 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 Monitoring Report Version 1.5 dated 15 May 2015, 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 also 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 75 wind turbines and the generation of renewable energy fed into the grid from Capricorn Ridge Wind Farm near Sterling, Texas. The Project is located at latitude: 31.900878 and longitude: -100.817413 over an area of approximately 11,000 acres. The reporting period under verification is 1 January 2014 – 31 December 2014.

The project achieves emission reductions through the replacement of electricity into the ERCOT 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 CO<sub>2</sub> 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 kickoff meeting with NativeEnergy;
- Review the validated Project Description;
- Review the Validation Report;
- Review the previous Verification Report;
- Review the current Monitoring Report Version 1.5, dated 15 May 2015;
- Develop a verification plan and risk-based sampling plan;
- 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, additional documentation requests, and clarification requests;
- Issue a verification report; and
- Conduct an exit meeting with NativeEnergy.

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: Nina Pinette

Team Member: Jessica Stavole

Senior Internal Reviewer: Phillip Cunningham

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 NativeEnergy on 20 January 2015. The purpose of the kick-off call was to introduce the NativeEnergy 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 3.5). RCE performed a risk assessment based upon the criteria listed above and evidence provided to RCE by NativeEnergy 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 Sterling, Texas on 18 March 2015 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 15 May 2015),
- Emission reduction calculation spreadsheet,
- Capricorn Ridge meter hourly data,
- ERCOT 15-minute data,
- ERCOT REC tracking documentation,
- Operating margin calculation spreadsheet,
- LCRA Operations Test Report for the primary meter, 15 July 2014,
- LCRA Operations Test Report for the backup meter, 28 July 2014,
- Electricity consumption invoices, and
- Operations Attestation.

## 2.3 Interviews

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

- Brian Killkelley, NativeEnergy: Brian 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 (ADRs).
- Brent Mitchell, NextEra Energy Resources, LLC: Brent is the Regional Wind Site Manager for Capricorn Ridge Wind. During the site visit, Brent 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.

NextEra Energy Resources, LLC (NextEra) owns the Capricorn Ridge 4 Wind Farm, is the project proponent, and owns the emission reduction credits.

## 2.4 Site Inspections

RCE conducted a site visit at the Project location near Sterling, Texas on 18 March 2015 which involved a tour of the facility and adjacent leased properties. 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 presence of seventy five wind turbines via the SCADA system which tracks operational information for all turbines. In addition, RCE inspected the monitoring equipment in the Capricorn Ridge 4 substation which meters kWh generation and viewed the LCRA substation from which the electricity is delivered to the grid and kWh generation is metered with a revenue-quality meter.

## 2.5 Resolution of Findings

During the verification process, RCE issued one corrective action request (CAR), two clarification requests (CL), and one additional documentation request (ADR). RCE documented these requests in the List of Findings. NativeEnergy sufficiently addressed all requests as documented below.

Corrective Action Requests (CARs) and Clarification Requests (CLs)		
ID #	Action Item	Resolution
CAR 1	There is a non-material misstatement in calculated project emissions. The error can be traced back to an overstatement in NativeEnergy’s summary worksheet relating to the FP&L O&M Bldg invoice on 29 August 2014.	2 April 2015: NativeEnergy corrected this typo in its summary worksheet and revised the emission reduction calculation spreadsheet.
CL 1	Have the RECs that were created in 2014 been retired? The screenshot from the ERCOT system shows that a volume of RECs corresponding to the Project’s entire electrical output for 2014 were created. Another screenshot shows a portion of the RECs were sold and then retired (and thus not eligible to receive offsets) – please confirm. Additionally, provide evidence that NextEra retired the remaining RECs.	27 March 2015: NativeEnergy explained that the associated RECs will be retired before VCUs are issued. Additionally, they clarified that the portion of RECs shown in the REC retirement report were retired and are not eligible as carbon reductions. RECs are the only other form of environmental credit that the project is receiving. VCS confirmed that this is acceptable and will be addressed during the registration and issuance process.
CL 2	Why was the TDL2010 factor applied for this reporting period? Was it applied for project emissions in previous reporting periods? There is no reference in the PD to this factor or the “Tool to calculate baseline, project and/or leakage emissions from electricity consumption”.	27 March 2015: NativeEnergy explained that it was not used in the previous reporting period and removed it from the emission reduction calculations and monitoring report.
ADR 1	Provide an updated Monitoring Report which reflects the following: <ul style="list-style-type: none"> <li>• Section 1.5 – Correction of the Project start date to correspond to that in the validated PD</li> <li>• Section 1.8 - Correction of the methodology version</li> <li>• Removal of the project emissions for</li> </ul>	2 April 2015: NativeEnergy revised the Monitoring Report to address all items.

	<p>TDL2010 and removal of references to the Tool (as documented in Clarification #2 below)</p> <ul style="list-style-type: none"> <li>• Identification of the appropriate primary and secondary revenue meter inspection dates in Section 3.2</li> </ul>	
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### 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 also generated Renewable Energy Certificates (RECs) in the ERCOT REC Program and has registered its RECs in the ERCOT registry. There were some RECs generated by the Project which were transferred to other parties and/or retired on behalf of other parties; however, these RECs are excluded from the quantity of electricity generated by the Project when calculating emission reductions and no emission reductions are claimed from electricity production associated with these RECs. At the time of verification, the remaining RECs equivalent to the quantity of electric generation claimed for this reporting period, 279,495 MWh, had not been retired.

RCE verified that all forms of environmental credit that the Project received for this reporting period are identified. However, to prevent double counting, RECs need to be retired before VCUs can be issued.

### 3.2 Methodology Deviations

There were no methodology deviations for this reporting period.

### 3.3 Project Description Deviations

There were no project description deviations for this 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 20 May 2008, the date upon which commercial operation began. The crediting period is for ten years, beginning on 1 January 2010 and ending on 31 December 2020. RCE found that the Project was implemented in conformance with the validated Project Description with no deviations. RCE also confirmed that the Project continues to meet the requirements of the VCS Standard Version 3.5.

RCE confirmed that there were no changes to the project proponents for this reporting period. NextEra is identified as the Project Proponent in the Monitoring Report. For the first time in the crediting period, NativeEnergy is involved in the project as a technical consultant with the roles of developing the Monitoring Report and managing the Project's VCU's. During verification activities, RCE confirmed that NextEra is the Project owner and operator and thus has rights to all emission reduction credits generated by the Project.

The Project uses revenue quality electric meters located at the LCRA substation and confirmed by ERCOT to measure electricity generation by the Project. LCRA operates these meters which continuously measure kWh generation. In the event of a failure, there is a back-up meter installed at the same location, also owned by LCRA. A technician inspected and certified the meters during the reporting period on 15 July 2014 (primary meter) and 28 July 2014 (backup meter). Both were in compliance with the requirements of ERCOT protocols.

### 4.2 Accuracy of GHG Emission Reduction and Removal Calculations

NativeEnergy calculated the Project's emission reductions in accordance with the equations in ACM0002 Version 09 and the validated Project Description. RCE reviewed the NativeEnergy 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. NativeEnergy uses this data to calculate the carbon dioxide emissions displaced by the Project. RCE sampled the Project data recorded via the kWh meter at the Capricorn Ridge 4 substation which is aggregated hourly as well as the raw data recorded via the LCRA revenue meter in 15 minute intervals. RCE also reviewed the ERCOT REC documentation. All quantities tied out with small discrepancies.

Native Energy calculates baseline emissions from wind power generation by multiplying the quantity of net electricity produced and supplied to the grid by the combined margin CO<sub>2</sub> emission factor for grid connected power generation (0.605 tCO<sub>2</sub>/MWh). RCE reviewed the calculation of the combined margin factor that NativeEnergy calculated in accordance with the CDM methodological tool 07 "Tool to calculate the emission factor for an electricity system" Version 01.1 using a weighted average of the operating and build margin emission factors. Per the validated Project Description, the build margin is calculated ex-ante and is fixed for the Project's crediting period (0.384 tCO<sub>2</sub>/MWh). The Project calculates the operating margin on an ex-post basis and assesses the operating margin during each verification for changes. The Project determines the operating margin using the U.S. EPA's eGRID database (9<sup>th</sup> edition Version 1.0

data files based on Year 2010 data). RCE verified that NativeEnergy correctly calculated the operating margin and appropriately applied it in the calculation of the combined margin factor. Finally, RCE confirmed that the combined margin factor was correctly applied in the calculation of emission reductions for this reporting period.

NativeEnergy calculated project emissions by multiplying the quantity of electricity consumed by the Project, as determined by invoices, by a CO<sub>2</sub> emission factor. RCE reviewed invoices for electricity consumed by offices, an operations and maintenance building, an equipment warehouse, turbine start-up, and substation backup power. Some of these are shared across all phases of the Project, so NativeEnergy attributed a portion to Capricorn Ridge 4 by applying a capacity share factor to the total kWh metered. RCE confirmed that calculated project emissions were materially correct and that NativeEnergy applied the most recent eGRID factor for the ERCOT region.

RCE recalculated the emission reductions for the entire reporting period and found the GHG emission reduction calculations to be in conformance with the ACM0002 Version 09 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**

NativeEnergy 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. Multiple meters collect and record data. These meters are owned and maintained by NextEra and LCRA. NextEra receives continuous electric data via telemetry from the LCRA revenue quality meters. Additionally, NextEra captures and stores data from its own meter and saves and backs up the data in its market data software package managed at corporate headquarters in Florida.

RCE found the information provided to be transparently documented and in accordance with requirements of the ACM0002 Version 09 methodology and the validated Project Description.

#### **4.4 Non-Permanence Risk Analysis**

Not applicable.

### **5 VERIFICATION CONCLUSION**

RCE conducted a risk-based analysis of the Capricorn Ridge 4 Wind Farm 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 1 January 2014 – 31 December 2014 can be considered in conformance with the:

- Verified Carbon Standard Version 3.5 (March 25, 2015),
- Clean Development Mechanism methodology ACM0002 Version 09, "Consolidated baseline methodology for grid connected electricity generation from renewable sources," and

- Validated VCS Project Description, dated 11 November 2011

Verification period: From 1 January 2014 – 31 December 2014

Verified GHG emission reductions and removals in the above verification period:

Year	Baseline emissions or removals (tCO <sub>2</sub> e)	Project emissions or removals (tCO <sub>2</sub> e)	Leakage emissions (tCO <sub>2</sub> e)	Net GHG emission reductions or removals (tCO <sub>2</sub> e)
2014	169,094	786	0	168,308

**6 LEAD AUDITOR SIGNATURE**



Nina Pinette  
Environmental Scientist

**7 INTERNAL REVIEWER SIGNATURE**



Phillip Cunningham  
Environmental Scientist