

# VALIDATION REPORT FOR READING WIND ENERGY, LLC



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| <b>Report Title</b>        | Validation Report for Reading Wind Energy, LLC                                                                                                                                                                                                             |
| <b>Client</b>              | Southern Power Company                                                                                                                                                                                                                                     |
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**Summary:**

Southern Power Company contracted Ruby Canyon Engineering, Inc. (RCE) to perform the validation of the proposed Reading Wind Energy, LLC (Project) for Southern Power Company (Project Proponent). The Project is a 200 megawatt (MW) wind power project consisting of 62 new (Greenfield) wind power turbines on approximately 20,000 acres of land near Reading in Lyon and Osage Counties, Kansas, USA. The technologies include 14 x Siemens SWT-2.415-108 @ 80m HH turbines, 2.415 MW, and 48 x Gamesa G132 @ 101.5m HH turbines, 3.465 MW. The electricity generated will be delivered to the Southwest Power Pool (SPP) electricity grid system and displace fossil fuel-generated electricity resulting in CO<sub>2</sub> emissions reductions.

The Project Proponent utilized the United Nations Framework Convention on Climate Change (UNFCCC) Clean Development Mechanism (CDM) methodology entitled: "Consolidated baseline methodology for grid connected electricity generation from renewable sources (ACM0002), Version 18.1" and the Project falls under CDM/VCS Sectoral Scope 1, Energy industries (renewable/ non-renewable sources). The validation activities were conducted against Verified Carbon Standard (VCS) Standard v3.7, 21 June 2017, and CDM Tools.

As part of the validation activities, RCE reviewed the completeness, conservativeness, and accuracy of the underlying evidence for the Project's assumptions and data sources used. During the validation process, RCE issued a total of 14 findings which include:

- 4 Corrective Action Requests (CARs)
- 3 Requests for additional documentation (ADRs)
- 7 Clarification Requests (CLs)
- 0 Forward Action Requests (FARs)

Based on documentation and explanations provided by the Project Proponent, RCE closed out all findings in a clear and transparent manner. RCE is reasonably assured that the Project meets all relevant VCS requirements and correctly applies the CDM Methodology and Tools.

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## 1 INTRODUCTION

### 1.1 Objective

The purpose of validation is to have an independent third party assess the Project's eligibility, baseline scenario, additionality, project description, and monitoring plan to ensure conformance with VCS requirements. Validation objectives also include an assessment of the expected emission reduction claims made by the Project. The validation process also provides assurance to stakeholders of the quality of the Project and achieving real, permanent, measurable, and additional emission reductions.

### 1.2 Scope and Criteria

The validation scope is defined as an independent and objective review of the Reading Project Description (PD) v8.1, dated September 5, 2018. The Reading PD was reviewed against the following criteria:

- VCS Standard, v3.7, 21 June 2017
- Approved CDM large-scale methodology ACM0002 v18.1 – Grid connected electricity generation from renewable sources

RCE employed a risk-based approach throughout the validation process when reviewing the completeness, conservativeness, and accuracy of the data and evidence provided by the Project Proponent. The results of the validation activities provided the necessary input for the validation opinion, which was completed according to the VCS Program Guide v3.7, VCS Standard v3.7, and ISO 14064-3:2006.

### 1.3 Level of Assurance

RCE conducted the validation activities and prepared its validation opinion to a reasonable level of assurance.

### 1.4 Summary Description of the Project

The Project is a 200 megawatt (MW) wind power project consisting of 62 new (Greenfield) wind power turbines on approximately 20,000 acres of land near Reading in Lyon and Osage Counties, Kansas, USA. The technologies include 14 x Siemens SWT-2.415-108 @ 80m HH turbines, 2.415 MW, and 48 x Gamesa G132 @ 101.5m HH turbines, 3.465 MW. The electricity generated will be delivered to the Southwest Power Pool (SPP) electricity grid system and displace fossil fuel-generated electricity resulting in CO<sub>2</sub> emissions reductions.

The Project expects to generate an estimated annual average of 512,840 tonnes carbon dioxide equivalent (CO<sub>2</sub>e) in GHG emission reductions, totalling 5,128,398 tonnes CO<sub>2</sub>e over the 10-year crediting period.

## 2 VALIDATION PROCESS

### 2.1 Method and Criteria

RCE used a risk-based assessment approach to the validation process. The approach was used to develop the sampling plan as part of the validation activities. The sampling plan assessed the following:

- Accuracy of the emission reduction calculations
- Regulatory compliance
- Project ownership
- Application of the methodology
- Demonstration of additionality
- Investment analysis
- Common practice analysis
- Monitoring plan
- Stakeholder consultation

Elements contained in the Reading PD were the primary focus of the validation and sampling plan. RCE reviewed the PD for completeness and accuracy, and used it to determine other relevant documents to review and personnel to interview. Based on the requirements of VCS PD and CDM Tools, RCE developed a sampling plan checklist. RCE found the largest validation risk items to be associated with the financial investment analysis and common practice analysis.

Following its initial review of all Project documents, RCE delivered an Issues Log to the Project Proponent with findings that included corrective actions, additional document requests, and clarifications. In addition to document review, RCE recalculated the electricity system emission factor calculations provided by the Project Proponent and found no errors or misstatements. RCE checked the calculations used in the financial investment analysis and sensitivity analysis and confirmed the calculations to be free of errors.

The Project Proponent provided responses to RCE for all identified issues, which led to several rounds of findings and responses until all items were closed out. As part of the response resolutions, RCE interviewed Project Proponent stakeholders.

Following the close-out of all open items, RCE completed a validation report, and submitted the validation for independent review.

### 2.2 Document Review

The validation activities relied heavily on document review. RCE reviewed several versions of the Reading PD as well as copies of underlying evidence, data, records, and supporting documents. The Project Proponent provided an index of all supporting documents for transparency and clarity. In addition, RCE reviewed numerous independent studies and reports on the wind power industry and the financing of projects to cross-check and compare to the documents provided by the Project Proponent.

## 2.3 Interviews

As part of the validation activities, RCE completed interviews with Southern Power Company personnel and with technical consultants with Dillon Consulting, Ltd. RCE's Mr. Michael Cote and Mr. Phillip Cunningham conducted several interviews in a series of teleconferences held on June 8, 19, 29, 2018, and July 3 & 13, 2018.

The following stakeholders were interviewed:

| Name & Position                                                                   | Organization           | Items Discussed                                                              |
|-----------------------------------------------------------------------------------|------------------------|------------------------------------------------------------------------------|
| Jack Wallace, P Eng.                                                              | Dillon Consulting      | Reading PD, CDM additionality tool, and common practice analysis.            |
| Sunish Mathew, Project Manager, Commercial Optimization and Trading               | Southern Power Company | Investment analysis, power purchase agreement, and supporting documentation. |
| Andrew Mullins, Project Manager, Financial Structuring Renewables and Acquisition | Southern Power Company | Investment analysis, power purchase agreement, and supporting documentation. |
| Joshua Hale, Manager, Commercial Optimization and Trading                         | Southern Power Company | Investment analysis and supporting documentation.                            |

## 2.4 Site Inspections

The Project is not yet financed and under construction, therefore RCE completed the validation activities with documents reviews and interviews.

## 2.5 Resolution of Findings

Using an Issues Log, RCE requested corrective actions, clarifications and supplemental information during the validation process. The Project Proponent and Technical Consultant responded to all requests, which were subsequently closed out.

During the validation process, RCE issued a total of 14 findings which include:

- 4 Corrective Action Requests (CARs)
- 3 Requests for additional documentation (ADRs)
- 7 Clarification Requests (CLs)
- 0 Forward Action Requests (FARs)

The resolution of findings is summarized in the table found in Appendix A.

### 2.5.1 Forward Action Requests

RCE did not issue any forward action requests as part of the validation activities.

### 3 VALIDATION FINDINGS

#### 3.1 Project Details

The Project is a 200-megawatt (MW) wind power project consisting of 62 new (greenfield) wind power turbines on approximately 20,000 acres of land near Reading in Lyon and Osage Counties, Kansas, USA. The technologies include 14 x Siemens SWT-2.415-108 @ 80m HH turbines, 2.415 MW, and 48 x Gamesa G132 @ 101.5m HH turbines, 3.465 MW. The electricity generated will be delivered to the Southwest Power Pool (SPP) electricity grid system and displace fossil fuel-generated electricity resulting in CO<sub>2</sub>e emissions reductions.

The coordinates of the wind turbines at the project site is provided in Reading PD Section 1.9. RCE confirmed the project boundary locations. The Project Proponent estimates the net capacity factor (NCF) to be 43.2%, with over 757,540 MWh per year in net power production forecast. A main substation meter and check meter will be installed on the site at the point of interconnection to the SPP Grid.

RCE confirmed that the Project is eligible under the VCS Program and uses the United Nations Framework Convention on Climate Change (UNFCCC) Clean Development Mechanism methodology "Grid-connected electricity generation from renewable sources, Version 18.1" and falls under CDM/VCS Sectoral Scope 1, Energy industries (renewable/ non-renewable sources). The Reading PD Section 1.3 states that Southern Power Company is the Project Proponent and the Power Purchase Agreement lists Reading Wind Energy, LLC as a "Party" to the agreement. In addition, the Reading PD Section 1.4 identifies Dillon Consulting Limited as the Technical Consultants.

The VCS Standard, Version 3.7 defines the project start date as the "date on which the project began generating GHG emission reductions or removals". For this Project Activity, the date on which GHG emission reductions will begin to be generated corresponds to the date on which the wind turbines begin operation. The Project Proponent has proposed this date to be December 31, 2019, on which Gamesa and Siemens (turbine suppliers) will complete the commissioning of the Project as per their turbine supply agreement (TSA). RCE cannot confirm the exact date *ex-ante*.

The Project's first crediting period is 10 years, beginning on the proposed Project start of operations of December 31, 2019 and ending on December 30, 2029. The operational life of the project activity is expected to be 27 years.

RCE confirms the Project Activity is over the annual 300,000 tCO<sub>2</sub>e threshold for a large project scale, per the VCS Standard 3.7. The Reading PD Table 1.1, presents the estimated GHG emission reductions over the 10-year crediting period to be 5,128,398 tCO<sub>2</sub>e.

RCE confirmed, through reviewing support documents such as permits, leases, map, and diagrams, that the Project location is located near Reading, Kansas, in Lyon and Osage Counties, Kansas, USA on parcels totalling approximately 20,000 acres. Approximately 25% of the turbines are planned for Osage County and 75% for Lyon County. The Project Proponent provided UTM14 NAD27 coordinates of the individual turbines within the Project Boundary.

RCE confirmed that conditions prior to the Project Activity are consistent with the baseline scenario of electricity being delivered to the SPP grid by the operation of grid-connected fossil fuel-fired power plants.

RCE confirmed the Project Proponent received its Conditional Use Permits from Lyon and Osage Counties on December 29, 2016 and December 16, 2016, respectively. The permits allow for construction activities to move forward. RCE confirmed there are no statutes or regulations in the state of Kansas or at the federal level mandating the generation of electricity by wind power. The Project Proponent provided evidence of additional regulatory compliance considerations during the Project planning phase including environmental and cultural resource studies, site characterizations, and 3<sup>rd</sup> party wind and interconnection studies.

The Project Proponent provided sufficient evidence that they retain the full ownership and proof of title for the Project Activity. RCE confirmed this through review of the Project permits and studies, turbine supply agreements, and the PPA. Although the Project Activity has not commenced, RCE found no evidence that the Project is participating in other GHG programs or seeking other environmental credits (i.e. renewable energy credits). Moreover, the PPA requires the Project Proponent to develop and deliver GHG emission reduction credits only.

The Project Proponent provided information related to project investment and finances that were classified as commercially sensitive information. RCE reviewed all business confidential information and agreed that the classification as “commercially sensitive” is appropriate, and as a result is not included in the Reading PD.

RCE concludes that the Project description included in the Reading PD is accurate, complete, and provides an understanding of the nature of the Project.

## **3.2 Application of Methodology**

### **3.2.1 Title and Reference**

The Project Proponent utilized the UNFCCC Clean Development Mechanism methodology entitled: "Consolidated baseline methodology for grid connected electricity generation from renewable sources (ACM0002, Version 18.1)" which is valid from April 26, 2018 to the current date.

### **3.2.2 Applicability**

Under ACM0002, Version 18.1, there are a series of applicability criteria presented as follows: "This methodology is applicable to grid-connected renewable power generation project activities that

- (a) install a Greenfield power plant;
- (b) involve a capacity addition to (an) existing plant(s);
- (c) involve a retrofit of (an) existing plant(s);
- (d) involve a rehabilitation of (an) existing plant(s); or
- (e) involve a replacement of (an) existing plant(s).

Based on the applicability criteria, RCE confirmed the Project Activity is applicable as an installation of a new Greenfield power plant.

The following methodological tools applied to the Project Activity are the following CDM approved tools:

- Tool to calculate the emission factor for an electricity system, Version 06.0.0
- Tool for the demonstration and assessment of additionality, Version 07.0.0

RCE confirms that the Project Proponent has applied the CDM Tools correctly and consistent with ACM0002. In addition, the Project Proponent used CDM Guidelines on the Assessment of Investment Analysis, Version 05.

### 3.2.3 Project Boundary

Under ACM0002, Version 17.0, the Project Boundary is defined as: "The spatial extent of the project boundary includes the project power plant and all power plants connected physically to the electricity system that the CDM project power plant is connected to".

The Project Proponent clearly states this baseline scenario in the Reading PD, Section 2.4, and has included diagrams and maps separately showing the Project Activity, metering locations and proximity to the SPP grid. RCE confirms that the Project Proponent has applied the Project Boundary in a manner that is consistent with ACM0002.

Through reviewing support documents such as permits, leases, map, and diagrams, RCE confirmed the project boundary to be in Lyon and Osage Counties, Kansas, USA.

### 3.2.4 Baseline Scenario

Under ACM0002, Version 17.0, the Baseline Scenario for a new wind power plant is defined as: "Electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources, as reflected in the combined margin (CM) calculations described in the "Tool to calculate the emission factor for an electricity system."

The Project Proponent clearly states this baseline scenario in the Reading PD, Section 2.4. The Project Proponent has calculated the combined margin using the CDM Tool. RCE confirms that the identified baseline scenario reasonably represents what would occur in the absence of the proposed VCS Project Activity.

### 3.2.5 Additionality

The Project Proponent utilized the CDM "Tool for demonstration and assessment of additionality", Version 7.0.0 (Additionality Tool) which is the most-up-to-date and applicable version of the tool.

The Project Proponent identified alternative scenarios in the Reading PD including the baseline scenario. RCE confirms that none of the alternatives identified are mandated by any enforced law, statute, or other regulatory framework, nor is the project activity mandated by any applicable law, statute, or other regulatory framework.

The Project Proponent provided many of the documents containing confidential business information as well as public documents regarding wind power financing and investment, RECs pricing, SPP markets, and valuing wind farm assets. The Project Proponent chose a post-tax

internal rate of return (IRR) as the financial indicator. As part of the validation activities, RCE assessed commercially sensitive information provided by the Project Proponent including: capital and operating costs, production capacity factor, curtailment rates, market price basis between SPP North hub and Reading node, taxes and tax credits, PPA and merchant revenue. RCE confirmed that the data and parameters used in the Project Proponent's financial investment analysis were appropriate and credible. RCE confirmed the investment analysis inputs, IRR calculations, and results were conducted accurately and free of errors.

The Project Proponent selected "Investment Analysis Option III – Apply benchmark analysis" as the analysis method, and provided a large number of the documents containing confidential business information as well as publicly available documents regarding wind power financing and investment, RECs pricing, and SPP market pricing. RCE confirmed the suitability of the benchmark method and rate used for the investment analysis. The benchmark was determined based on three recent public studies on wind energy investment and financing.

RCE recalculated the sensitivity analysis to determine which inputs were most sensitive to the results, and assessed those inputs for accuracy, reasonableness, and uncertainty. RCE confirmed the outcome of the sensitivity analysis and identified the project not to be financially attractive; therefore, a barriers analysis was not required in the additionality assessment.

The Project Proponent used the SPP electricity system region for the common practice analysis. The SPP electricity grid is one of ten major North American Electricity Reliability Corporation (NERC) regions. Each region has unique electricity emission factors and various penetrations of renewable energy sources. RCE finds the use of SPP electricity system as an appropriate geographical region used for the common practice analysis.

RCE confirmed that the Project Activity does not fall under any of the measure classes defined in the CDM Guidelines on common practice, Version 0.3.1. Accordingly, the Project Proponent completed Sub-step 4b of the common practice analysis and defined essential distinctions between the Project Activity and similar activities.

The Project Proponent's common practice analysis concluded that the essential distinction between the Project Activity and similar activities to be new barriers and a serious change in circumstances compared to similar activities. Of 59 wind power projects (>100MW) installed within the SPP network since 2013, 56 projects have registered for RECs and 2 projects for VERs. RCE confirmed that RECs prices have decreased significantly since 2014, and the associated financial benefits used by similar activities are no longer available to the Project Activity. The Project Proponent provided adequate information and supporting documents regarding similar activities in the SPP electricity system, and RCE concludes the Project Activity is not "common practice" and is therefore additional.

RCE confirmed the reasonableness of assumptions made in the demonstration of additionality, and concludes the supporting evidence provided, data, parameters, and assumptions relevant to the financial analysis, benchmark selection, and common practice analysis to be adequate and sufficient to justify the additionality of the Project.

### **3.2.6 Quantification of GHG Emission Reductions and Removals**

RCE confirmed that the emission reductions are quantified in accordance with the procedures described in ACM0002 Version 18.1 and relevant CDM tools. The equations are correctly

identified in the Reading PD, and the GHG emission reduction calculations are presented in a clear and transparent manner, incorporating all relevant GHG sources, sinks, and reservoirs.

Baseline emissions are estimated ex-ante based on the quantity of electricity expected to be generated by the Project multiplied by the combined margin CO<sub>2</sub> emission factor for the SPP regional electricity grid. RCE confirmed through review of calculation spreadsheets, underlying raw data, and publicly available utilities databases for the SPP electricity grid (EPA e-Grid) that the combined margin emission factor is calculated in accordance with the CDM Tool to calculate the emission factor for an electricity system, Version 5.0. RCE confirmed the operating margin (OM) to be correctly calculated as 0.852 tCO<sub>2</sub>/MWh using the simple operating margin calculation method. The build margin (BM) is correctly calculated as 0.151 tCO<sub>2</sub>/MWh, and the weighted combined margin (CM) is correctly calculated as 0.677 tCO<sub>2</sub>/MWh. RCE confirmed that the combined margin was correctly calculated according to the CDM Tool using a 75 percent operation margin weight and a 25 percent build margin weight.

The ex-ante calculation option is selected for both the operating and build margins, and remains fixed for the duration of the first crediting period.

RCE confirmed that the Project Activity is a wind power project that does not combust any fuels to operate, therefore the project emissions are correctly determined to be zero.

Based on the ACM0002 methodology, no leakage emissions are considered.

RCE reviewed the quantification procedure and supporting evidence, and concludes that the methodologies and the applicable tools have been applied correctly to calculate baseline emissions, project emissions, leakage, and net GHG emission reductions and removals. RCE confirmed that because the Project is a Greenfield wind power plant, there are no project or leakage emissions, thus total emission reductions are equal to total baseline emissions. RCE concludes that the data, parameters, references, and sources used in the Reading PD to determine the baseline emissions are appropriate and reasonable in the context of the Project Activity.

### **3.2.7 Methodology Deviations**

The Project Proponent has stated in the Reading PD, Section 2.6 that there are no methodology deviations for this Project Activity. RCE validation activities have confirmed this statement is correct.

### **3.2.8 Monitoring Plan**

RCE confirmed the Project correctly adheres the monitoring plan as described in the ACM0002 methodology. Accordingly, the only parameter to be monitored is the amount of electricity supplied to the electricity grid. The monitoring plan described in the Reading PD includes all relevant data and parameters required to calculate emission reductions.

The monitoring plan includes a complete description of the data parameter, method of estimation, frequency and unit of measurement, and procedures for recording, storing, and reporting activities. The monitoring plan also ensures accurate measurements through the installation of

appropriate metering equipment and identifies appropriate quality assurance and quality control procedures.

Because the Project has not been built yet, the exact location and details of the revenue meter equipment will be included in the monitoring plan during the verification phase. During the initial verification, the Project Proponent will address any line loss adjustments between the revenue meter and the SPP interconnect, if applicable.

### **3.3 Non-Permanence Risk Analysis**

Non-permanence risk analysis is not applicable to the Project Activity.

## **4 SAFEGUARDS**

### **4.1 No Net Harm**

RCE confirms that no potential environment or socio-economic issues were found during the Project's planning and permitting process.

### **4.2 Environmental Impact**

The Project Proponent has provided site characterization studies, habitat assessments, cultural resource surveys, and memoranda and correspondence from environmental consultants to demonstrate the environmental implications of the Project Activity. RCE confirms that the documents conclude that the Project proceed as planned.

### **4.3 Local Stakeholder Consultation**

The Project Proponent provided sufficient evidence that state and local regulators and landowners have been engaged in a series of meetings, discussions, and communications. The Project Proponent provided details regarding the attendance and content of the meetings. RCE confirms that the Project Proponent considered stakeholder consultations during the Project design.

### **4.4 Public Comments**

The Project Proponent provided sufficient evidence that all concerns or issues were raised during the stakeholder consultation process have been addressed. Conditional Use Permits for the Project were granted on December 29, 2016 for Lyon County and December 19, 2016 for Osage County

## **5 VALIDATION CONCLUSION**

RCE confirms that the validation was performed in accordance with the VCS Program Guide, Version 3.7, and VCS Standard, Version 3.7 in addition to UNFCCC CDM methodologies and tools. Through the construction of a 62-turbine wind project with a total nameplate capacity of 200 MW, the Project Activity will result in a reduction of GHG emissions that is relevant, complete, consistent, accurate, transparent and conservative.

Upon completion of the validation process RCE concludes that that all relevant VCS validation criteria have been satisfied and the Project Activity properly applies the criteria of ACM0002 Version 18.1. RCE concludes that the listed baseline alternatives were credible and that the emission reductions attributable to the Project Activity are additional to any emission reductions that would occur in the absence of the Project.

All CARs, ADRs, and CLs raised by RCE have been satisfactorily resolved by the Project Proponent. The *ex ante* emission reductions from the Project Activity are estimated to be 5,128,398 tonnes of CO<sub>2</sub>e over a 10-year crediting period from December 31, 2019 to December 30, 2029, resulting in an average of 512,840 tonnes of CO<sub>2</sub>e annually throughout the crediting period. RCE considers it likely that the estimated quantity of emission reductions may be achieved by the Project Activity should the assumptions and operational conditions remain the same.

RCE issues a positive validation opinion for Reading Wind Energy, LLC and recommends the Project for VCS registration without limitations of qualifications.

#### Lead Validator Signature



Michael Cote  
President and Senior Environmental Engineer

#### Independent Reviewer Signature



Bonny Crews  
Senior Environmental Scientist

**6 APPENDIX A: RESOLUTION OF FINDINGS**

**Issues Log**      **Final**  
**version:**

**Project**            **Reading Wind Energy, LLC**  
**Name:**

**Project ID:**      **PL 1754**

**Project**            **Southern Power**  
**Proponent**

| <b>Corrective Action, Additional Documents, or Clarification</b> | <b>Finding</b>                                                                                                                                                                                                                                                                 | <b>Project Proponent Response</b>                                                                                                                                                                                                                                                                                                                                                                                                           | <b>Validation Conclusion</b>                                                                                                                                                                                                                                                                                                                                                                                            |
|------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>CAR 1</b>                                                     | The Project Description Sec. 1.5 lists the start date as June 1, 2018. VCS defines the start date as "the date the project starts generating emission reductions and removals". Correct the start date in all applicable documents.                                            | The project start date has been corrected in the Project Description to reflect December 31, 2019, consistent with the VCS Standard.                                                                                                                                                                                                                                                                                                        | RCE accepts the corrective action.                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>CAR 2</b>                                                     | The Project Description (PD) Sec. 1.12.3 mentions other forms of environmental credits, namely renewable energy credits (RECs). Provide additional details about the financial attractiveness of GHG and RECs programs that were used as part of the common practice analysis. | <p>Additional text regarding RECs has been provided and incorporated into the Project Description Common Practice Analysis discussion (Appendix B), as shown in ADR#2.</p> <p>A report from the NREL has been uploaded to the "Reference" folder in Dropbox titled "Status and Trends in the US Voluntary Green Power Market (2016 Data). Refer to the "Validation Notes" tab of the Investment Analysis. Validation, registration, and</p> | <p>RCE does not accept the information provided as adequate evidence to justify the essential distinctions between the proposed project activity and similar activities.</p> <p>Project proponent revised common practice analysis under Additionality Tool v7.0, Step 4, Substep 4b, 62 to refocus the essential distinction analysis toward the new barriers presented in the Project's PPA requirements (CAR 3).</p> |

annual verification costs.  
Considering the similar price ranges for RECs and VERs within the past 5 years, as well as the large price swings observed in this period, there is no clear financial attractiveness of one type of credit against another that would affect the additionality of the project.

|              |                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                    |                                                                                      |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| <b>CAR 3</b> | Update essential distinction analysis and PD language to reflect the evidence provided identifying new barriers presented by the PPA.                                                                                          | Language in Step 4 updated on July 9th for Reading Wind - VCS PD_Draft_v4. Additional discussion regarding common practice is provided in Appendix B, and a letter from the buyer of the electricity, consistent with the PPA, confirming the relevance of VERs to their sustainability efforts has been provided. | RCE accepts common practice analysis and updated language in VCS PD_Draft_v6.        |
| <b>CAR 4</b> | Small inaccuracies noted in PD Draft_v4 require revisions. Please update the following: 1) ACM0002 v18.1 references, 2) Project Developer name, 3) Sec 1.8 - 61 turbines, 4) Table 5.1, 5) stakeholder issues should be noted. | Dillon provided edits in Reading Wind - VCS PD_Draft_v6                                                                                                                                                                                                                                                            | RCE accepts the revisions to VCS PD_Draft_v6.                                        |
| <b>ADR 1</b> | Please provide copies of the files referenced in the 'Reading Investment Analysis Calculations_Draft_v1.xlsx', and the locations (page #) in the referenced documents where information was obtained.                          | The referenced files have been uploaded to the Dropbox site.                                                                                                                                                                                                                                                       | RCE accepts document index and confirms all supporting documents have been provided. |

|              |                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                            |
|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|
| <b>ADR 2</b> | Please provide evidence that justifies the Projects essential distinction (PPA barriers); specifically verifiable evidence as to how other wind projects in the geographic region are treating RECs and the value added compared to VERs. | The key tenet of the PPA with regards to requiring registration under the VCS as an essential distinction is highlighted in Section 4.(a) of the PPA. Specifically, it was clear that the purchaser of the environmental attributes had a clearly stated preference for the development of VERs over RECs. As further demonstration of the prevalence of RECs compared with VERs in the wind power sector, the Project Proponent owns multiple wind assets with corresponding PPAs that contain language stating the buyer will have the rights to the Renewable Energy Credits, and no language with respect to VERs as environmental attributes. | RCE accepts the information provided that justifies the essential distinction used in the common practice analysis (CAR 3) |
|              |                                                                                                                                                                                                                                           | Two additional files have been provided and are in the "PPA" Dropbox folder: (1) a public listing of all generation in NARR: and (2) a list of all the wind assets in SPP from one of the Project Proponent's modeling tools.                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                            |
| <b>ADR 3</b> | Please provide additional reference documentation to support the investment analysis: 1) cost of debt, 2) basis rate, 3) land royalty %, 4) merchant rate, 5) calculations for capex summary from LOI, 6) Kansas taxes, 7) O&M costs      | Additional backup documents provided via email on July 3, 2018, and has been uploaded in the Dropbox Reference file folder.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | RCE accepts revised Analysis Calculations_Draft_v3 and the additional reference documents provided.                        |
| <b>CR 1</b>  | Clarify how renewable energy production tax credits are used in the investment analysis?                                                                                                                                                  | PTCs are included as a post tax revenue in the cash flow for the first 10 years, consistent with the timing of construction prior to the expiry of the program. Further                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | RCE accepts clarifications provided by Southern Power and Dillon during two conference calls on June 19th and 28th.        |

|             |                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                    |
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|             |                                                                                                                                                                                                                                                                             | <p>information regarding the PTC can be found at the link below.</p> <p>Note that the amount is adjusted for inflation according to the factor provided by the IRS in the year of sale in 2020.</p>                                                                                                                                                                                                                                                                                                                           |                                                                    |
| <b>CR 2</b> | <p>Please clarify whether you are using project or equity IRR calculations. Explain how the cost of debt is used in CAPEX calculations.</p>                                                                                                                                 | <p>Dillon provided clarifications and a revised Investment Analysis Calculations_Draft_v3 on July 3rd. The Equity IRR approach is being used instead of the Project IRR. This was discussed on a June 28, 2018 between Dillon and Ruby Canyon and further on June 29, 2018 with Southern Power.</p>                                                                                                                                                                                                                           | <p>RCE accepts clarifications provided on June 28th.</p>           |
| <b>CR 3</b> | <p>Please clarify why the PD Appendix B. Step 2 references the Red Hills Wind Farm and Dempsey Ridge Wind Project, since the projects are not used for the calculation of the benchmark reference in the 'Reading Investment Analysis Calculations_Draft_v1.xlsx' file.</p> | <p>These projects are referenced for further context regarding the Common Practice Analysis discussion in the Project Description. The benchmark developed is based on publicly available IRR data from the referenced files, and is also consistent with these two projects. Additional text has been added to the PD to reflect this.</p>                                                                                                                                                                                   | <p>RCE accepts correction in VCS PD_Draft_v4.</p>                  |
| <b>CR 4</b> | <p>Explain why a major maintenance is not included in operational expenses forecast.</p>                                                                                                                                                                                    | <p>Maintenance of the turbines and balance of plant (BOP) is accounted for as an annual cost in the cash flow through the operational life of the project. A decommissioning cost is provided at the end of the project life to account for removal and salvage of the turbines and BOP.</p> <p>The Letter of Intent from the turbine supplier indicates a 20 year life for the turbines. We have adjusted the cash flow to have a 20 year period only, consistent with the CDM tool and the CDM Guidelines on Investment</p> | <p>RCE accepts the clarification and supporting documentation.</p> |

## Analysis.

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| <b>CR 5</b> | Summarize the important highlights of the PPA including fixed and floating pricing. Explain the significance of bias adjustments and curtailment rates.                                                                                                                                                                              | Refer to Section 3. of the PPA for the payment term and Annex III of the PPA for fixed pricing during the payment term. Refer to Section 4.(b) of the PPA for the transfer of VERs to the buyer pursuant to the PPA fixed pricing. The PPA rate includes the electricity as well as environmental attributes, and the basis rate accounts for the generation being settled at the hub rather than the site location. Southern Power and Dillon provided clarifications during two conference calls on June 19th and 28th.          | RCE accepts the clarification and support documents provided.               |
| <b>CR 6</b> | The Project Description states that the sensitivity analysis results fell below the benchmark IRR. The conclusion does not match sensitivity analysis spreadsheet results. Explain the likelihood of project revenues increasing 10%. Also, clarify the basis rate and merchant revenue assumptions used in the investment analysis. | Based on the revised investment analysis spreadsheet, the project IRR would only exceed the benchmark IRR if PPA revenues increased by 10% under the sensitivity scenario. However; given that the PPA rates are fixed amounts, in place by executed agreement, this will not occur for the project unless the negotiations between PPA parties are reopened. Reference data on the basis rate and merchant revenue has been provided in response to ADR#3. Additional discussion text has been provided in the VCS PD Appendix B. | RCE accepts the revised investment analysis and sensitivity results.        |
| <b>CR 7</b> | Clarify whether common practice analysis is limited to SPP grid or state of Kansas. Please provide support documents for common practice analysis.                                                                                                                                                                                   | The common practice analysis is limited to the SPP grid as this is the electricity grid for the project and the most relevant area for which the grid connected electricity would be sourced from. For the purposes of regulatory                                                                                                                                                                                                                                                                                                  | RCE accepts the geographical area assigned to the common practice analysis. |

compliance, the state of Kansas is considered, given state law jurisdiction. Referenced files have been uploaded to the Dropbox site.

**Recommendations** for Improvement

**RFI 1**      None