

1-1) Provide meanings of the acronyms used in the application.

**Response:** Each acronym is defined the first time it is used in the Application; thus, please refer to the Application for the definition.

**Respondent:** Sam Massey, Director of Renewable Development

Tyler Wilhelm, Project Manager

1-2) Tyler Wilhelm and Sam Massey testimony page 9 of 15, line 10, Provide copies of Grant County Ordinances at the time of the CRW conditional use permit (CUP) issuance in Grant County.

**Response:** Crowned Ridge Wind objects to the document production because the information is a matter of public record equally available to intervenors. Subject to and without waiving this objection, Crowned Ridge Wind provides the following links

**Grant County Ordinance for WES**

<https://grantcounty.sd.gov/photos/announcements/Proposedwes.pdf>

**Grant County Ordinances**

<https://grantcounty.sd.gov/photos/downloads/grant112718.pdf>

**Respondent:** Sam Massey, Director of Renewable Development

Tyler Wilhelm, Project Manager

1-3) Provide copies of Grant County Comprehensive Plan at the time of the CRW conditional use permit (CUP) issuance in Grant County.

**Response:** Crowned Ridge Wind objects to the document production because the information is a matter of public record equally available to intervenors. Subject to and without waiving this objection, Crowned Ridge Wind provides the following link:

**Grant County Comprehensive Plan**

[https://grantcounty.sd.gov/photos/downloads/gc\\_comprehensiveplan.pdf](https://grantcounty.sd.gov/photos/downloads/gc_comprehensiveplan.pdf)

**Respondent:** Sam Massey, Director of Renewable Development

Tyler Wilhelm, Project Manager

- 1-4) Tyler Wilhelm and Sam Massey testimony page 9 of 15, line 10, Provide copies of Codington County Ordinances at the time of CRW conditional use permit (CUP) issuance in Codington County.

**Response:** Crowned Ridge Wind objects to the document production because the information is a matter of public record equally available to intervenors. Subject to and without waiving this objection, Crowned Ridge Wind provides the following link:

**Codington County Ordinance**

<https://www.codington.org/wp-content/uploads/2018/07/Ordinance-68-Section-5.22-WES.pdf>

**Respondent:** Sam Massey, Director of Renewable Development

Tyler Wilhelm, Project Manager

- 1-5) Provide copies of Codington County Comprehensive Plan at the time of CRW conditional use permit (CUP) issuance in Codington County.

**Response:** Crowned Ridge Wind objects to the document production because the information is a matter of public record equally available to intervenors. Subject to and without waiving this objection, Crowned Ridge Wind provides the following link:

**Codington County Comprehensive Plan**

<https://www.codington.org/wp-content/uploads/2013/04/Codington-County-Comp-Plan-2012-Adopted102212.pdf>

**Respondent:** Sam Massey, Director of Renewable Development

Tyler Wilhelm, Project Manager

- 1-6) Tyler Wilhelm and Sam Massey testimony page 9 of 15, line 2-3, Provide the submitted March 2016, (actual 2017), CUP for Cattle Ridge Wind LLC (CRWF) in Grant County.

**Response:** Crowned Ridge Wind objects to the documentation production, because it is not reasonably calculated to lead to discovery of admissible evidence in this proceeding before the PUC. Subject to and without waiving the objection, Crowned Ridge provides Attachment 1.

**Respondent:** Sam Massey, Director of Renewable Development

Tyler Wilhelm, Project Manager

- 1-7) Tyler Wilhelm and Sam Massey testimony page 9 of 15, line 4, Provide Acquisition or Transfer of Ownership, and or Purchase Agreement with Geronimo Energy.

**Response:** Crowned Ridge Wind objects to the production of Acquisition or Transfer of Ownership, and or Purchase Agreement with Geronimo Energy as it is confidential. The agreement will not be produced.

**Respondent:** Miles Schumacher, Attorney

- 1-8) Provide the information submitted to Grant County for the February 11, 2019 Board of Adjustments (BOA) hearing regarding the Request to Amend the Condition of Approval for CRWF.

**Response:** Crowned Ridge Wind objects to the document request because the information is matter of public record equally available to intervenors and it is not reasonably calculated to lead to discovery of admissible evidence in this proceeding before the PUC. Subject to and without waiving these objections, Crowned Ridge Wind provides Attachment 1.

**Respondent:** Sam Massey, Director of Renewable Development

Tyler Wilhelm, Project Manager

- 1-9) Provide the Findings of Fact for the Request to Amend the Condition of Approval for the CRWF, CUP in Grant County on February 11, 2019.

**Response:** Crowned Ridge Wind objects to the document production because the information is a matter of public record equally available to intervenors. Subject to and without waiving this objection, Crowned Ridge Wind provides Attachment 1.

**Respondent:** Sam Massey, Director of Renewable Development

Tyler Wilhelm, Project Manager

- 1-10) Provide project revision details for approximately 25 turbines in the CRWF part of Crowned Ridge Wind LLC (CRW), which will expire March 13, 2019 after the extension was denied February 11, 2019.

**Response:** Please reference Attachment 1 for the revision details of the Cattle Ridge Wind Farm.

**Respondent:** Sam Massey, Director of Renewable Development

Tyler Wilhelm, Project Manager

- 1-11) Provide the submitted CRW CUP application in Grant County.

**Response:** Crowned Ridge Wind objects to this request for a document in that the CUP application is a matter of public record equally available to intervenors, and that the production of the CUP application is not reasonably calculated to lead to discovery of admissible evidence in this proceeding before the PUC. Subject to and without waiving the objections, the following is provided: A copy of the CRW CUP Application in Grant County as Attachment 1.

**Respondent:** Sam Massey, Director of Renewable Development

Tyler Wilhelm, Project Manager

- 1-12) Provide the submitted CRW CUP application in Codington County.

**Response:** Crowned Ridge Wind objects to this request for a document in that the CUP application is a matter of public record equally available to intervenors, and that the production of the CUP application is not reasonably calculated to lead to discovery of admissible evidence in this proceeding before the PUC. Subject to and without waiving the objections, the following is provided: A copy of the CRW CUP Application in Codington County as Attachment 1.

**Respondent:** Sam Massey, Director of Renewable Development

Tyler Wilhelm, Project Manager

- 1-13) Provide all signed Haul Road Agreements, include all townships, municipalities and counties in South Dakota.

**Response:** Crowned Ridge Wind objects to this document production requests as it is not limited in time, overly broad, and not reasonably calculated to lead to the discovery of admissible evidence in this proceeding before the PUC. Subject to and without waiving these objections, the following is provided: See Attachment 1.

**Respondent:** Sam Massey, Director of Renewable Development

Tyler Wilhelm, Project Manager

- 1-14) Provide all documents recorded in Grant County in relation to the CRW and CRWF projects.

**Response:**

Crowned Ridge Wind objects to the document production the extent it vague, overly broad, is available as public record it is equally available to intervenors, and it is not reasonably calculated to lead to discovery of admissible evidence in this proceeding before the PUC. Subject to and without waiving these objections, Crowned Ridge Wind provides the following response: All documents recorded in Grant County, South Dakota in relation to the Crowned Ridge and Cattle Ridge projects are public information and accessible at the Register of Deeds office in Milbank, South Dakota. For more information on the Grant County Register of Deeds office please reference the following link:  
<https://grantcounty.sd.gov/countyoffices/rod/>

**Respondent:** Sam Massey, Director of Renewable Development

Tyler Wilhelm, Project Manager

- 1-15) Provide all documents recorded in Codington County in relation to the CRW project.

**Response:**

Crowned Ridge Wind objects to the document request because it is vague, overly broad, the information is matter of public record equally available to intervenors and it is not reasonably calculated to lead to discovery of admissible evidence in this proceeding before the PUC. Subject to and without waiving these objections, Crowned Ridge Wind provides the following response: all documents recorded in Codington County, South Dakota in

relation to the Crowned Ridge project are public information and accessible at the Register of Deeds office in Watertown, South Dakota. For more information on the Codington County Register of Deeds office please reference the following link:

<https://www.codington.org/register-of-deeds/>

**Respondent:** Sam Massey, Director of Renewable Development

Tyler Wilhelm, Project Manager

- 1-16) Provide all documents recorded in other counties or states in relation to the CRW and CRWF projects.

**Response:** Crowned Ridge Wind objects to the document request because the information is matter of public record equally available to intervenors and it is not reasonably calculated to lead to discovery of admissible evidence in this proceeding before the PUC.

Subject to and without waiving these objections, Crowned Ridge Wind provides the following response: Crowned Ridge Wind does have recorded documents in Deuel County, South Dakota. All documents assigned to Crowned Ridge Wind that are recorded in Deuel County, South Dakota are publicly available and accessible are public information and accessible at the Register of Deeds office in Clear Lake, South Dakota. For more information on the Deuel County Register of Deeds office please reference the following link: <https://www.deuelcountysd.com/register-of-deeds>

**Respondent:** Sam Massey, Director of Renewable Development

Tyler Wilhelm, Project Manager

- 1-17) Provide a copy of all correspondence between NextEra Energy Resources LLC (NEER) and CRW hired expert, Dr. Chris Ollson, to evaluate the Grant County proposed wind energy system (WES) ordinance and to provide expert testimony at the Grant County CRW, CUP hearing, and any related correspondence to any other person in Grant County.

**Response:** Crowned Ridge Wind objects to this document production, because it (i) is not limited in time; (ii) is overly broad; (iii) seeks information that is protected from disclosure by the attorney-client privilege, and/or to the extent the request seeks information that reflects the mental impressions, conclusions, opinions, or legal theories of the Applicants and their attorneys, which is also protected from disclosure by the attorney work product doctrine, and (iv) is not reasonably calculated to lead to the discovery of admissible evidence in this proceeding before the PUC. Subject to and without waiving these objections Crowned Ridge Wind provides Attachment 1.

**Respondent:** Sam Massey, Director of Renewable Development

Tyler Wilhelm, Project Manager

- 1-18) Provide a copy of all correspondence between NEER and CRW hired expert, Dr. Chris Ollson, to evaluate the Codington County proposed WES ordinance and to provide expert testimony at the Codington County CRW, CUP hearing, and any related correspondence to any other person in Codington County.

**Response:** Crowned Ridge Wind objects to this document production, because it (i) is not limited in time; (ii) is overly broad; (iii) seeks information that is protected from disclosure by the attorney-client privilege, and/or to the extent the request seeks information that reflects the mental impressions, conclusions, opinions, or legal theories of the Applicants and their attorneys, which is also protected from disclosure by the attorney work product doctrine, and (iv) is not reasonably calculated to lead to the discovery of admissible evidence in this proceeding before the PUC. Subject to and without waiving these objections Crowned Ridge Wind provides Attachment 1.

**Respondent:** Sam Massey, Director of Renewable Development

Tyler Wilhelm, Project Manager

- 1-19) Tyler Wilhelm and Sam Massey testimony, Page 5 of 15, line 4, “Development activities for the Project commenced in 2008.” Provide a list of all the affiliations, entities, affiliated entities, corporations, associations, doing business as (DBA), limited liability company (LLC), incorporation (INC), partnerships and/or agents that have been associated with CRW and CRWF since 2008 in South Dakota.

**Response:**

To the best of Crowned Ridge Wind’s knowledge, the following list includes all affiliations, entities, affiliated entities, corporations, associations, doing business as (DBA), limited liability company (LLC), incorporation (INC), partnerships and/or agents that have been associated with CRW and CRWF since 2008 in South Dakota:

- Crowned Ridge Wind, LLC;
- Crowned Ridge Wind II, LLC;
- Cattle Ridge Wind Farm, LLC;
- Cattle Ridge Wind Holdings, LLC;
- Tower Associates, LLC;
- Boulevard Associates, LLC;
- SWCA Environmental Consultants, Inc.;
- EAPC Wind Energy Services, LLC.;
- OEHM
- HDR Engineering, Inc.;

- Ulteig Engineers, Inc.;
- Burns & McDonnell Engineering Company Inc.;
- P&E Engineering Co.;
- Barr Engineering Co.;
- Snyder & Associates, Inc.;
- Capitol Airspace Group, LLC
- Beta Land Services, LLC
- CanAcre

**Respondent:** Sam Massey, Director of Renewable Development

Tyler Wilhelm, Project Manager

1-20) Tyler Wilhelm and Sam Massey testimony, Page 5 of 15, line 4, “Development activities for the Project commenced in 2008.” Application, Page 2 first paragraph, “over the past 10 years” Provide all maps and Project designs including but not limited to boundary line, footprint, turbine siting, elevation, topography, collector line, haul road, residential homes, environmental presented to any entity, landowner, federal or state agency, and tribal and local governments or person since the commencement of the Project in 2008.

**Response:** Crowned Ridge Wind objects to the document request because it is overly broad, not appropriately limited in time, and it is not reasonably calculated to lead to discovery of admissible evidence in this proceeding before the PUC. Subject to and without waiving these objections, Crowned Ridge Wind provides Attachment 1.

**Respondent:** Sam Massey, Director of Renewable Development

Tyler Wilhelm, Project Manager

1-21) Tyler Wilhelm and Sam Massey testimony, Page 1 of 15, line 18, “from the wind and sun, generating 19,000 MW in 29 states and Canada”.

1. How many megawatt (MW) produced form wind?
2. Provide location of projects NEER or its affiliated entities, are involved in 29 states and Canada.
3. Provide a list of project names NEER or its affiliated entities are involved in the 29 States and Canada.

**Response:** Crowned Ridge Wind objects to the information requested as overly broad and it is not reasonably calculated to lead to discovery of admissible evidence in this proceeding



before the PUC. Subject to and without waiving these objections, Crowned Ridge Wind provides following links:

1. <http://www.nexteraenergyresources.com/locations-map.html>
2. <http://www.nexteraenergyresources.com/locations-map.html>
3. <http://www.nexteraenergyresources.com/locations-map.html>

**Respondent:** Sam Massey, Director of Renewable Development

Tyler Wilhelm, Project Manager

- 1-22) Application, Page 117, 24.0, Provide minutes, notes, names of all in attendance of each of the meetings with officials in Grant County.

**Response:** Crowned Ridge Wind objects to the requested information because it calls for information not in possession of Applicant, and to the extent it is available as public record it is equally available to intervenors. Subject to and without waiving these objections, Crowned Ridge Wind provides Attachment 1.

**Respondent:** Sam Massey, Director of Renewable Development

Tyler Wilhelm, Project Manager

- 1-23) Application, Page 117, 24.0, Provide minutes, notes, names of all in attendance of each of the meetings with officials in Codington County.

**Response:** Crowned Ridge Wind objects to the requested information because it calls for information not in possession of Applicant, and to the extent it is available as public record it is equally available to intervenors. Subject to and without waiving these objections, Crowned Ridge Wind provides Attachment 1.

**Respondent:** Sam Massey, Director of Renewable Development

Tyler Wilhelm, Project Manager

- 1-24) Provide a list of all participators (contracted landowners) who have signed a CRW or CRWF, Land Lease and Wind Easement contracts (LLWEC).

**Response:**

Crowned Ridge Wind objects to the document request because the information is matter of public record equally available to intervenors and it is not reasonably calculated to lead to discovery of admissible evidence in this proceeding before the PUC. Subject to and without waiving these objections, Crowned Ridge Wind provides the following response: records of land lease and wind easement contracts with participators (contracted landowners) are public information and accessible at the Register of Deeds office in both Grant County and Codington County, South Dakota. For more information on the Register of Deeds offices please reference the following links:

<https://grantcounty.sd.gov/countyoffices/rod/>  
<https://www.codington.org/register-of-deeds/>

**Respondent:** Sam Massey, Director of Renewable Development  
Tyler Wilhelm, Project Manager

- 1-25) Provide copy of the CRW and CRWF, LLWEC used in Grant County. Please provide all variations.

**Response:** Crowned Ridge Wind objections to the document product to the extent the documents are available as public records equally available to intervenors. Subject to and without waiving the objection Crowned Ridge Wind provides the following: all documents recorded in Grant County, South Dakota in relation to the Crowned Ridge and Cattle Ridge projects are public information and accessible at the Register of Deeds office in Milbank, South Dakota. For more information on the Grant County Register of Deeds office please reference the following link: <https://grantcounty.sd.gov/countyoffices/rod/>

**Respondent:** Sam Massey, Director of Renewable Development  
Tyler Wilhelm, Project Manager

- 1-26) Provide copy of the CRW, LLWEC used in Codington County. Please provide all variations.

**Response:** Crowned Ridge Wind objections to the document product to the extent the documents are available as public records equally available to intervenors. Subject to and without waiving the objection Crowned Ridge Wind provides the following: all documents recorded in Codington County, South Dakota in relation to the Crowned Ridge project are public information and accessible at the Register of Deeds office in Watertown, South Dakota. For more information on the Codington County Register of Deeds office please reference the following link:  
<https://www.codington.org/register-of-deeds/>

**Respondent:** Sam Massey, Director of Renewable Development  
Tyler Wilhelm, Project Manager

- 1-27) Provide all the names of each land agent who contacted and/or met with any landowner in Grant County.

1. Provide the name of each landowner, number of contacts with each landowner, dates of each contact.

**Response:**

1. Crowned Ridge Wind objects to the information requested because it is overly broad and not reasonably calculated to lead to discovery of admissible evidence in this proceeding before the PUC. Subject to and without waiving these objections, Crowned Ridge Wind

provides the following response: please find below the contact information for the Crowned Ridge Wind, LLC Land Services Supervisor.

Mr. Gary Hicks

Phone: (512) 629-1294

Email: [Gary.Hicks@NextEraEnergyResources.com](mailto:Gary.Hicks@NextEraEnergyResources.com)

**Respondent:** Sam Massey, Director of Renewable Development  
Tyler Wilhelm, Project Manager

1-28) Provide all the names of each land agent who contacted and/or or met with any landowner in Codrington County.

1. Provide the name of each landowner, number of contacts with each landowner, dates of each contact.

**Response:** Please see response to 1-27.

**Respondent:** Sam Massey, Director of Renewable Development  
Tyler Wilhelm, Project Manager

1-29) Are all the LLWEC participators in CRW project contracted to CRW and /or CRWF?

1. If no, provide list of participators names and locations and affiliated entity the participators LLWEC is with.

**Response:**

2. Yes.

**Respondent:** Sam Massey, Director of Renewable Development  
Tyler Wilhelm, Project Manager

1-30) Do any CRW and CRWF, LLWEC participators have acreages smaller than 81 acres within the CRW, CRWF footprint boundary line or adjacent to the CRW, CRWF footprint boundary line?

1. If yes, provide a list of all CRW and CRWF, LLWEC participators including the size of acreage signed into a LLWEC with CRW and CRWF.

**Response:**

1. Crowned Ridge Wind objects to the production of a list that does not exist. Crowned Ridge Wind also objects to the product of the list in that it is not reasonably calculated to lead to discovery of admissible evidence in this proceeding before the PUC. Therefore, no list is provided.

**Respondent:** Miles Schumacher, Attorney

1-31) Do any CRW and CRWF, non-participators have acreages smaller than 81 acres within the CRW, CRWF footprint boundary line or adjacent to the CRW, CRWF footprint boundary line?

1. If yes, provide a list of all CRW and CRWF, non-participators including the size of acreage signed into a LLWEC with CRW and CRWF.

**Response:**

1. Crowned Ridge Wind objects to the production of a list that does not exist. Crowned Ridge Wind also objects to the product of the list in that it is not reasonably calculated to lead to discovery of admissible evidence in this proceeding before the PUC. Therefore, no list is provided.

**Respondent:** Miles Schumacher, Attorney

1-32) In relation to all the CRW, CRWF and CRW II, do any transmission line lease/easements have addendums, memorandums, options or attachments to include turbines or a LLWEC?

1. If yes, provide a list of all participator's names and locations, with turbine addendums, memorandums, options, or attachments.

**Response:**

1. No. Transmission easements associated with the named projects support the use of transmission facilities and are not utilized for the contracted use of turbines under the same easement contract.

**Respondent:** Sam Massey, Director of Renewable Development  
Tyler Wilhelm, Project Manager

1-33) In relation to all the CRW, CRWF and CRW II projects, do LLWEC have addendums, memorandums, options or attachments to include transmission lines?

1. If yes, provide a list of all participator's names and locations, with transmission line addendums, memorandums, options, or attachments.

**Response:**

No. Wind farm easements associated with the named projects support the use of wind farm infrastructure (turbines, access roads, underground collection etc.) and are not utilized for the contracted use of overhead transmission facilities.

**Respondent:** Sam Massey, Director of Renewable Development  
Tyler Wilhelm, Project Manager

- 1-34) Provide a sound analysis for the construction phase of the CRW project.

**Response:** There is no document responsive to this request.

**Respondent:** Kim Wells, Environmental Services Manager.

- 1-35) Provide infrasound, noise below 20Hz, known as infrasound or low frequency noise (ILFN), information and analysis produced by all equipment used during the construction phase.

**Response:** There is no document responsive to this request.

**Respondent:** Kim Wells, Environmental Services Manager

- 1-36) Provide a sound analysis for the decommission phase of the CRW project.

**Response:** There is no document responsive to this request.

**Respondent:** Kim Wells, Environmental Services Manager

- 1-37) Provide infrasound, noise below 20Hz, known as ILFN, information and analysis produced by all equipment used during the decommission phase.

**Response:** No infrasound analysis was conducted.

**Respondent:** Kim Wells, Environmental Services Manager

1-38) Page 83 line 3 ... “loudest normal operating sound pressure level emitted from the 2.3 116 is 107.5 ...” Explain

1. “normal”
2. 107.5, is this DBA? If yes, give details of the metric used

**Response:** Table 13.3.2.2 in the Application on Page 83 indicates the max sound pressure level is in dBA. See page 5 of the Crowned Ridge Sound Study Report which indicates the loudest normal operating sound pressure level emitted from the GE 2.3□116 is 107.5 dBA at 10 m/s and higher at hub height. The word normal comes from the GE sound manufacture documentation.

**Respondent:** Jay Haley, Consultant

1-39) Provide infrasound, noise below 20Hz, known as ILFN, information and analysis produced by GE 2.3MW 116 turbines.

**Response:** There is no document responsive to this request.

**Respondent:** Kim Wells, Environmental Services Manager

1-40) Provide infrasound, noise below 20Hz, known as ILFN, accumulative information and analysis produced by GE 2.3MW 116 turbines for the CRW project.

**Response:** There is no document responsive to this request.

**Respondent:** Kim Wells, Environmental Services Manager

1-41) If the there is a change in the Project, and an alternate turbine model is selected for use other than what is currently specified, as proposed in Grant CRW and CRWF CUP applications and Codington County CRW CUP applications, is there a possibility that the alternate industrial wind turbines would produce noise, known as infrasound or low frequency, lower than 20Hz? Explain

**Response:** Crowned Ridge Wind objects to the data request because it is vague, overly broad, requires speculation on part of Applicant, and not reasonably calculated to lead to the discovery of admissible evidence in this proceeding before the PUC. Therefore, no response is provided.

**Respondent:** Miles Schumacher, Attorney

1-42) Will shadow flicker from the turbines in the CRW project cross a non-participators property line?

1. If yes, provide details of compensation being provided.

**Response:** Crowned Ridge objects to the question because it is vague and calls for speculation. Subject to and without waiving the objections, depending on the proximity of the wind turbine to the non-participator's property line shadow flicker may cross the property line. As modeled, shadow flicker from turbines meets Codington and Grant County ordinances for all participating and non-participating receptors. Compensation is not warranted as there are no exceedances. See Appendix D in the Crowned Ridge Wind Farm Shadow Flicker Study Report for project specific maps showing parcel and property lines.

**Respondent:** Jay Haley, Consultant

Tyler Wilhelm, Project Manager

1-43) Will shadow flicker from the turbines in the CRW project cross a participators property line?

1. If yes, provide details of compensation being provided.

**Response:** Crowned Ridge objects to the question because it is vague and calls for speculation. Subject to and without waiving the objections, depending on the proximity of the wind turbine to the participator's property line shadow flicker may cross the property line. As modeled, shadow flicker from turbines meets Codington and Grant County ordinances for all participating and non-participating receptors. Compensation is not warranted as there are no exceedances. See Appendix D in the Crowned Ridge Wind Farm Shadow Flicker Study Report for project specific maps showing parcel and property lines.

**Respondent:** Jay Haley, Consultant

Tyler Wilhelm, Project Manager

1-44) Will shadow flicker from the turbines in the CRW project cross the CRW footprint boundary line?

**Response:** Crowned Ridge objects to the question because it is vague and calls for speculation. Subject to and without waiving the objections, depending on the proximity of the wind turbine to the Project's boundary shadow flicker may cross the boundary. As modeled, shadow flicker from turbines meets Codington and Grant County ordinances for all participating and non-participating receptors. See Appendix D in the Crowned Ridge Wind Farm Shadow Flicker Study Report for project specific maps showing parcel and the Project boundary.

**Respondent:** Jay Haley, Consultant

- 1-45) Will shadow flicker in the CRW project cross public roads and/or section lines used for travel of any kind?

**Response:** Crowned Ridge objects to the question because it is vague and calls for speculation. Subject to and without waiving the objections, depending on the proximity of the wind turbine to the public road or section line shadow flicker may cross the road or line. As modeled, shadow flicker from turbines meets Codington and Grant County ordinances for all participating and non-participating receptors. See Appendix D in the Crowned Ridge Wind Farm Shadow Flicker Study Report for project specific maps showing parcel and roads and sections lines.

**Respondent:** Jay Haley, Consultant

- 1-46) Do GE 2.3 MW 116 turbines have the possibility:

- 1.1. Ice throw?
- 1.2. Ice buildup?
- 1.3. Ice shed?
- 1.4. Turbine vibration in relation to ice weather conditions?
- 1.5. Turbine performance in relation to ice weather conditions?
- 1.6. Turbine balance in relation to ice weather conditions?

2. If yes, Provide the manufacturer's information including, but not limited to letters, memorandums, checklists, precautions, and safety manuals, regarding:

- 2.1.1.1. Ice throw
- 2.1.1.2. Ice buildup
- 2.1.1.3. Ice shed
- 2.1.1.4. Turbine vibration in relation to ice weather conditions
- 2.1.1.5. Turbine performance in relation to ice weather conditions
- 2.1.1.6. Turbine balance in relation to ice weather conditions

**Response:** The GE 2.3MW 116 turbines do not buildup, shed, and throw ice. Turbine vibration and balance in various weather conditions, including icing are incorporated in the



foundation design. Also, turbines are curtailed in the event of severe weather conditions. Also, see Attachment 1.

**Respondent:** Mark Thompson, Manager of Wind Engineering

1-47) Do GE 2.3 MW 116 turbines have the possibility of blade throw?

**Response:** The GE turbines are designed and certified in accordance with IEC 61400-22 and tested and certified in accordance with IEC 61400-1 Edition 3. However, as with any structure, failures, although rare, cannot be completely discounted, which for a wind turbine may include blade failure.

To date, affiliates of Crowned Ridge Wind have not had any instances of blade throw of the 116 meter blades.

Also, see Attachment 1 to 1-46.

**Respondent:** Mark Thompson, Manager of Wind Engineering

1-48) Provide the weight of the blade for the GE 2.3 MW 116 turbine.

**Response:** One GE 2.3 MW 116 turbine blade weighs 24,250.8 pounds.

**Respondent:** Mark Thompson, Manager of Wind Engineering

1-49) Do GE 2.3MW 116 blades have plasticity?

1. If yes, Explain.

**Response:** No.

**Respondent:** Mark Thompson, Manager of Wind Engineering.

1-50) Do GE 2.3MW 116 turbines have the possibility of blade delamination?

**Response:** The GE turbines are designed and certified in accordance with IEC 61400-22 and tested and certified in accordance with IEC 61400-1 Edition 3. However, as with any structure, failures, although rare, cannot be completely discounted, which for a wind turbine may include blade failure.

Also, see Attachment 1 to 1-46.

**Respondent:** Mark Thompson, Manager of Wind Engineering

1-51) Do GE 2.3MW 116 turbines have the possibility of blade defragmentation?

**Response:** The GE turbines are designed and certified in accordance with IEC 61400-22 and tested and certified in accordance with IEC 61400-1 Edition 3. However, as with any structure, failures, although rare, cannot be completely discounted, which for a wind turbine may include blade failure.

To date, affiliates of Crowned Ridge Wind have not had any instances of blade defragmentation on the 116 meter blades.

Also, see Attachment 1 to 1-46.

**Respondent:** Mark Thompson, Manager of Wind Engineering

1-52) Do GE 2.3MW 116 turbines have the possibility of blade shred?

**Response:** The GE turbines are designed and certified in accordance with IEC 61400-22 and tested and certified in accordance with IEC 61400-1 Edition 3. However, as with any structure, failures, although rare, cannot be completely discounted, which for a wind turbine may include blade failure.

To date, affiliates of Crowned Ridge Wind have not had any instances of blade shred on the 116 meter blades.

Also, see Attachment 1 to 1-46.

**Respondent:** Mark Thompson, Manager of Wind Engineering

1-53) Do GE 2.3 MW 116 turbines have the possibility to catch fire?

**Response:** The GE turbines are designed and certified in accordance with IEC 61400-22 and tested and certified in accordance with IEC 61400-1 Edition 3. This along with robust

predictive and preventative maintenance and safety procedures should minimize the probability of a fire.

To date, affiliates of Crowned Ridge Wind had one lightning strike on the 116 meter blades. There was no spread of fire and the repair was a blade replacement.

Also, see Attachment 1 to 1-46.

**Respondent:** Mark Thompson, Manager of Wind Engineering

1-54) Do GE 2.3 MW 116 turbine tower have the possibility to collapse?

**Response:** GE has conducted a Mechanical Loads Assessment (MLA) of the turbines which confirms suitability for the Crowned Ridge site conditions. The turbines are also designed and certified according to IEC 61400-22 testing and certification scheme in combination with IEC 61400-1 Edition 3 wind turbine design requirements. However, as with any structure, failures, although rare, cannot be completely discounted, which for a wind turbine may be tower collapse. The Wind Energy System siting requirements enforced by Codrington County and Grant County require setback distances from residences, businesses, property lines and public rights of way that well ensure the public's safety in the event of a tower collapse. Crowned Ridge Wind has committed to meeting and/or exceeding all required setback distances imposed by both Codrington County and Grant County.

Also, see Attachment 1 to 1-46.

**Respondent:** Mark Thompson, Manager of Wind Engineering

1-55) Provide the manufacturers documentation/manuals for:

1. Installation for every turbine model proposed for use in the CRW project
2. Operation for every turbine model proposed for use in the CRW project
3. Functionality for every turbine model proposed for use in the CRW project
4. Preventative maintenance for every turbine model proposed for use in the CRW project
5. Maintenance for every turbine model proposed for use in the CRW project
6. Repair for every turbine model proposed for use in the CRW project
7. Safety for every turbine model proposed for use in the CRW project
8. Warranty for every turbine model proposed for use in the CRW project
9. Guarantee for every turbine model proposed for use in the CRW project

**Response:** The requested documents are confidential and proprietary, and, therefore, Crowned Ridge Wind objects to providing them.

**Respondent:** Miles Schumacher, Attorney

1-56) If there is a change in the Project, and an alternate turbine model is selected for use other than what is currently specified as proposed in Grant CRW and CRWF, CUP applications and Codington County CRW CUP applications, is there a possibility that the alternate industrial wind turbines would have the possibility of:

1. Ice throw?
2. Ice buildup?
3. Ice shed?
4. Blade throw?
5. Blade delamination?
6. Blade defragmentation?
7. Blade shed?
8. Catch fire?
9. Collapsing tower?

**Response:** Crowned Ridge Wind objects in that the question is vague and calls for speculation. Subject to and without waiving these objections, the answer to 1 through 9 is, yes.

Also, see Attachment 1 to 1-46.

**Respondent:** Mark Thompson, Manager of Wind Engineering

1-57) Application Page 18 last paragraph, Provide the brand and model and size of the pad-mounted transformer at the base of each turbine?

**Response:** The pad- mounted transformer at the base of each turbine brand is GE, the size is 2300kVA. The model numbers for the pad-mount transfers are not currently available; they will be available after production of the transformers.

**Respondent:** Mark Thompson, Manager of Wind Engineering

1-58) Is the transformer part of the GE 2MW 116 series turbine package or purchased separately?

**Response:** Crowned Ridge Wind objects to the data request because it is not reasonably calculated to lead to discovery of admissible evidence in this proceeding before the PUC. Subject to and without waiving the objection, Crowned Ridge Wind provides the following response: The pad-mount transformer will be purchased separately.

**Respondent:** Mark Thompson, Manager of Wind Engineering

- 1-59) Provide sound and ILFN information produced by pad-mounted transformer.

**Response:** Sound level testing is not required for pad mount transformers as per IEEE standards. Sound levels are not available for these units.

**Respondent:** Mark Thompson, Manager of Wind Engineering

- 1-60) Provide information on stray voltage produced and/or leaked by pad-mounted transformer.

**Response:** The wind project's collection system is designed with an effective grounded system that allows for all stray voltages to be dissipated in the ground, which eliminates issues with stray voltages. The pad-mount transformers are bonded to the collection grounding system which eliminates stray voltage potential at the pad-mount transformer.

**Respondent:** Mark Thompson, Manager of Wind Engineering

- 1-61) Application Page 30, table 8.1, Provide the brand and model and size of the permanent transformer.

**Response:** The unit#1 permanent transformer brand is Hyundai, the model is not yet available; the size is 230-34.5kV -225MVA. The unit #2 permanent transformer brand is Hyundai; the model is not yet available; and the size 230-34.5kV -115MVA.

**Respondent:** Mark Thompson, Manager of Wind Engineering

- 1-62) Application Page 30, table 8.1, Provide the sound and ILFN produced by the permanent transformer.

**Response:** The sound level generated by the permanent transformer is 73 dba. The closest resident receptor is CR1-c36-p, and with the additional of the transformer it is estimated that the property and residence sound is below 50 dba.

**Respondent:** Mark Thompson, Manager of Wind Engineering

- 1-63) Application Page 30, table 8.1, Provide information on stray voltage produced and/or leaked by the permanent transformer.

**Response:** Please see response to 1-60, which is equally applicable to the permanent transformer.

**Respondent:** Mark Thompson, Manager of Wind Engineering

1-64) Application Page 22, 6.4 Collection Substation, Provide the brand and model and size of the 2 power transformers.

1. Be specific for each one

**Response:**

1. See response to 1-61.

**Respondent:** Mark Thompson, Manager of Wind Engineering

1-65) Application Page 22, 6.4 Collection Substation, Provide the sound and ILFN produced by each of the two power transformers.

**Response:** Please see response to 1-62.

**Respondent:** Mark Thompson, Manager of Wind Engineering

1-66) Application Page 22, 6.4 Collection Substation, Provide information on stray voltage produced and/or leaked by each of the 2 power transformers.

**Response:** Please see responses to 1-60 and 1-63.

**Respondent:** Mark Thompson, Manager of Wind Engineering

1-67) Provide details of the liability insurance carried by CRW or NEER.

**Response:** The requested documents are confidential and proprietary, and, therefore, Crowned Ridge Wind objects to providing them.

**Respondent:** Miles Schumacher, Attorney

1-68) Does CRW or CRWF, require the LLWEC participators to carry liability insurance?

1. If yes, explain.

**Response:**

1. No. Participating landowners are not required to carry liability insurance.

**Respondent:** Sam Massey, Director of Renewable Development  
Tyler Wilhelm, Project Manager

1-69) Who is liable for any harmful effects to humans, animals or property resulting from ice throw?

**Response:** Crowned Ridge Wind objects to the data request in that it is vague, overly broad, calls for speculation, and a legal conclusion. No response is provided.

**Respondent:** Miles Schumacher, Attorney

1-70) Who is liable for any harmful effects to humans, animals or property resulting from blade delamination?

**Response:** Crowned Ridge Wind objects to the data request in that it is vague, overly broad, calls for speculation, and a legal conclusion. No response is provided.

**Respondent:** Miles Schumacher, Attorney

1-71) Who is liable for any harmful effects to humans, animals or property resulting from fire?

**Response:** Crowned Ridge Wind objects to the data request in that it is vague, overly broad, calls for speculation, and a legal conclusion. No response is provided.

**Respondent:** Miles Schumacher, Attorney

1-72) Who is liable for any harmful effects to humans, animals or property resulting from any other manner of harm from the turbine?

**Response:** Crowned Ridge Wind objects to the data request in that it is vague, overly broad, calls for speculation, and a legal conclusion. No response is provided.

**Respondent:** Miles Schumacher, Attorney

1-73) Will the GE 2.3 MW 116 turbines used in the CRW project have heated blades?

**Response:** No.

**Respondent:** Mark Thompson, Manager of Wind Engineering

1-74) Will the GE 2.3 MW 116 turbines ever use power from the electric grid?

**Response:** The GE 2.3MW 116 turbines will use a small amount of power from the grid at start up and during time when the wind is not blowing.

**Respondent:** Mark Thompson, Manager of Wind Engineering

1-75) Will the GE 2.3 MW 116 turbines used in the CRW project have serrated trailing edge blades?

**Response:** Yes.

**Respondent:** Mark Thompson, Manager of Wind Engineering

1-76) Provide the manufactures documentation for the Cut-In wind speed for a GE 2.3 MW 116 turbine.

**Response:** The requested documents are confidential and proprietary, and, therefore, Crowned Ridge Wind objects to providing them.

**Respondent:** Mark Thompson, Manager of Wind Engineering

1-77) Provide the manufactures documentation of the Cut-Out wind speed for the GE 2.3 MW 116 turbine.

**Response:** The requested documents are confidential and proprietary, and, therefore, Crowned Ridge Wind objects to providing them.



**Respondent:** Mark Thompson, Manager of Wind Engineering

- 1-78) Provide the speed in mph format at the blade tip at the Cut-Out windspeed for the GE 2.3 MW 116 turbine.

**Response:** The standard cut-out speed is 32m/s or 71.5 mph of wind.

**Respondent:** Mark Thompson, Manager of Wind Engineering

- 1-79) Provide details of the wake produced by GE 2.3 MW 116 turbines.

**Response:** There will be wake impacts of the rotor diameter in the direction of the wind with impact decreasing over distance.

**Respondent:** Mark Thompson, Manager of Wind Engineering

- 1-80) Provide details of the air turbulence produced by GE 2.3 MW 116 turbines.

**Response:** The requested documents are confidential and proprietary, and, therefore, Crowned Ridge Wind objects to providing them.

**Respondent:** Mark Thompson, Manager of Wind Engineering

- 1-81) Will the GE 2.3 MW 116 turbine cause wake in the CRW project to cross a non-participators property line?

**Response:** Crowned Ridge Wind objects to the question because it is vague and calls for speculation. Subject to and without waiving the objection, depending of the proximity of the non-participant to the turbine, the GE 2.3MW 116 turbine can cause wake at the 80m or 90m height that could cross their property line.

**Respondent:** Mark Thompson, Manager of Wind Engineering

- 1-82) Will the GE 2.3 MW 116 turbine cause wake in the CRW project to cross the CRW footprint boundary line?

**Response:** Crowned Ridge objects to the question because it is vague and calls for speculation. Subject to and without waiving the objections, depending on the proximity of the wind turbine to the boundary line, the GE 2.3MW 116 turbine can cause wake at the 80m

or 90m height that crosses boundary line.

**Respondent:** Mark Thompson, Manager of Wind Engineering

- 1-83) Will the GE 2.3 MW 116 turbine cause wake in the CRW project to cross a public road or section line used for travel of any kind?

**Response:** Crowned Ridge objects to the question because it is vague and calls for speculation. Subject to and without waiving the objections, depending on the proximity of the wind turbine to the public road or section line, the GE 2.3MW 116 turbine can cause wake at the 80m or 90m height that crosses the road or line.

**Respondent:** Mark Thompson, Manager of Wind Engineering

- 1-84) Will the GE 2.3 MW 116 turbine cause air turbulence in the CRW project to cross a non-participators property line?

**Response:** Crowned Ridge Wind objects to the question because it is vague and calls for speculation. Subject to and without waiving the objection, depending of the proximity of the non-participant to the turbine, the GE 2.3MW 116 turbine can cause air turbulence at the 80m or 90m height that could cross their property line.

**Respondent:** Mark Thompson, Manager of Wind Engineering

- 1-85) Will the GE 2.3 MW 116 turbine cause air turbulence in the CRW project to cross the CRW footprint boundary line?

**Response:** Crowned Ridge Wind objects to the question because it is vague and calls for speculation. Subject to and without waiving the objection, depending of the proximity of the boundary line to the turbine, the GE 2.3MW 116 turbine can cause air turbulence at the 80m or 90m height that could cross the boundary line.

**Respondent:** Mark Thompson, Manager of Wind Engineering

- 1-86) Will the GE 2.3 MW 116 turbine cause air turbulence in the CRW project to cross a public road section used for travel of any kind?

**Response:** Crowned Ridge Wind objects to the question because it is vague and calls for speculation. Subject to and without waiving the objection, depending of the proximity of the public road section to the turbine, the GE 2.3MW 116 turbine can cause air turbulence at the 80m or 90m height that could cross their property line.

**Respondent:** Mark Thompson, Manager of Wind Engineering

- 1-87) Will the GE 2.3 MW 116 turbine cause noise in the CRW project to cross a non-participators property line?

**Response:** Crowned Ridge objects to the question because it is vague and calls for speculation. Subject to and without waiving the objections, depending on the proximity of the wind turbine to the non-participator's property line sound may cross the property line. As modeled, sound from the GE 2.3 MW 116 turbine meets Codington and Grant County ordinances at all participating and non-participating receptors. See Appendix D in the Crowned Ridge Wind Farm Sound Study Report for Project specific maps showing parcel and property lines.

**Respondent:** Jay Haley, Consultant

- 1-88) Will the GE 2.3 MW 116 turbine cause noise in the CRW project to cross the CRW footprint boundary line?

**Response:** Crowned Ridge objects to the question because it is vague and calls for speculation. Subject to and without waiving the objections, depending on the proximity of the wind turbine to the Project boundary sound may cross the boundary. As modeled, sound from the GE 2.3 MW 116 turbine meets Codington and Grant County ordinances at all participating and non-participating receptors. See Appendix D in the Crowned Ridge Wind Farm Sound Study Report for Project specific maps showing parcel and boundaries.

**Respondent:** Jay Haley, Consultant

- 1-89) Will the GE 2.3 MW 116 turbine cause noise in the CRW project to cross a public road or section line used for travel of any kind?

**Response:** Crowned Ridge objects to the question because it is vague and calls for speculation. Subject to and without waiving the objections, depending on the proximity of the wind turbine to the public road or section line sound may cross the road or section line. As modeled, sound from the GE 2.3 MW 116 turbine meets Codington and Grant County ordinances at all participating and non-participating receptors. See Appendix D in the Crowned Ridge Wind Farm Sound Study Report for Project specific maps showing the Crowned Ridge footprint boundary line with a topographic map background detailing major roads.

**Respondent:** Jay Haley, Consultant

- 1-90) Will the GE 2.3 MW 116 turbine cause vibration in the CRW project to cross a non-participators property line?

**Response:** A vibration study was not conducted.

**Respondent:** Kim Wells, Environmental Services Manager

- 1-91) Will the GE 2.3 MW 116 turbine cause vibration in the CRW project to cross the CRW footprint boundary line?

**Response:** A vibration study was not conducted.

**Respondent:** Kim Wells, Environmental Services Manager

- 1-92) Will the GE 2.3 MW 116 turbine cause vibration in the CRW project to cross a public road or section line used for travel of any kind?

**Response:** A vibration study was not conducted.

**Respondent:** Kim Wells, Environmental Services Manager

- 1-93) Will the GE 2.3 MW 116 turbine cause shadow in the CRW project to cross a non-participators property line?

**Response:** Please see response to 1-42.

**Respondent:** Jay Haley, Consultant

- 1-94) Will the GE 2.3 MW 116 turbine cause shadow in the CRW project to cross the CRW footprint boundary line?

**Response:** Please see response to 1-44.

**Respondent:** Jay Haley, Consultant

- 1-95) Will the GE 2.3 MW 116 turbine cause shadow in the CRW project to cross a public road or section line used for travel of any kind?

**Response:** Please see response to 1-45.

**Respondent:** Jay Haley, Consultant

- 1-96) Will the GE 2.3 MW 116 turbine cause electromagnetic interference in the CRW project to cross a non-participators property line?

**Response:** No.

**Respondent:** Mark Thompson, Manager of Wind Engineering

- 1-97) Will the GE 2.3 MW 116 turbine cause electromagnetic interference in the CRW project to cross the CRW footprint boundary line?

**Response:** No.

**Respondent:** Mark Thompson, Manager of Wind Engineering

- 1-98) Will the GE 2.3 MW 116 turbine cause electromagnetic interference in the CRW project to cross a public road or section line used for travel of any kind?

**Response:** No.

**Respondent:** Mark Thompson, Manager of Wind Engineering

- 1-99) Will the GE 2.3 MW 116 turbine cause electrical interference in the CRW project to cross a non-participators property line?

**Response:** No.

**Respondent:** Mark Thompson, Manager of Wind Engineering

- 1-100) Will the GE 2.3 MW 116 turbine cause electrical interference in the CRW project to cross the CRW footprint boundary line?

**Response:** No.

**Respondent:** Mark Thompson, Manager of Wind Engineering

1-101) Will the GE 2.3 MW 116 turbine cause radio frequency interference in the CRW project to cross a non-participators property line?

**Response:** No.

**Respondent:** Mark Thompson, Manager of Wind Engineering

1-102) Will the GE 2.3 MW 116 turbine cause radio frequency interference in the CRW project to cross the CRW footprint boundary line?

**Response:** No.

**Respondent:** Mark Thompson, Manager of Wind Engineering

1-103) Will the GE 2.3 MW 116 turbine cause radio frequency interference in the CRW project to cross a public road or section line used for travel of any kind?

**Response:** No.

**Respondent:** Mark Thompson, Manager of Wind Engineering

1-104) Will the GE 2.3 MW 116 turbine cause audio effects in the CRW project to cross a non-participators property line?

**Response:** Please see response to 1-87.

**Respondent:** Jay Haley, Consultant.

1-105) Will the GE 2.3 MW 116 turbine cause audio effects in the CRW project to cross the CRW footprint boundary lines? Explain.

**Response:** Please see response to 1-88.

**Respondent:** Jay Haley, Consultant.

1-106) Provide the manufactures documentation of the maximum sound pressure levels for the 2.3 MW 116 turbine.

**Response:** The requested documents are confidential and proprietary, and, therefore, Crowned Ridge Wind objects to providing them.

**Respondent:** Mark Thompson, Manager of Wind Engineering

1-107) Provide the amount of oil that is required in the GE 2.3 MW 116 turbine and tower?

**Response:** There is approximately 100 gallons of oil for the gearbox and 20 gallons for the remaining motors for the GE 2.3MW turbine.

**Respondent:** Mark Thompson, Manager of Wind Engineering

1-108) Do GE 2.3MW 116 ever have net negative energy production?

**Response:**

During calm wind periods, the power demand of the GE 2.3 MW 116 wind turbine generator system could amount to a maximum of 40 kW if all loads are operating at the same time (yaw motor, control system, cold weather package, lighting and hydraulic pump). In these short periods negative energy production may occur. However, the GE 2.3MW 116 wind turbine generator systems will generate an annual net positive energy production.

**Respondent:** Mark Thompson, Manager of Wind Engineering

1-109) Who pays for the net negative energy production? Explain

1. Is it deducted from the leaseholder production payment?
2. Is it deducted from the production report to the State of South Dakota Department of Revenue?

**Response:**

The project pays for net negative energy production. When the project is generating a net positive energy production, revenue is generated and reported as such. If the project pays for net negative energy production, it's counted as a cost.

**Respondent:** Mark Thompson

1-110) If the Project changes and uses another turbine model, as proposed in Grant CRW and CRWF, CUP application and Codington County CRW, CUP applications, do industrial wind turbines have net negative energy production? Explain

**Response:** Crowned Ridge Wind objects to the information request, because it is vague and calls for speculation. Subject to and without waiving these objections, Crowned Ridge Wind provides the following response: if the Project uses another turbine model, the Project will have a positive energy production.

**Respondent:** Mark Thompson, Manager of Wind Engineering

1-111) Will CRW, CRWF or NEER or any other affiliated entity, receive carbon tax credits (CTC), associated with the CRW project? Explain

**Response:** Crowned Ridge Wind objects to the data request as overly broad, calls for speculation and is not reasonably calculated to lead to the discovery of admissible evidence in this proceeding before the PUC. Subject to and without waiving these objections, Crowned Ridge Wind provides the following response: No, it will not receive carbon tax credits associated with the CRW project.

**Respondent:** Sam Massey, Director of Renewable Development  
Tyler Wilhelm, Project Manager

1-112) Will CRW, CRWF or NEER or any other affiliated entity, receive renewable energy credits (REC) associated with the CRW project? Explain

**Response:** Crowned Ridge Wind objects to the data request as overly broad, calls for speculation and is not reasonably calculated to lead to the discovery of admissible evidence in this proceeding before the PUC. Subject to and without waiving these objections, Crowned Ridge Wind is unaware of RECs that are available for the Crowned Ridge Wind project.

**Respondent:** Sam Massey, Director of Renewable Development  
Tyler Wilhelm, Project Manager



1-113) Will CRW, CRWF or NEER or any other affiliated entity, receive green energy tax credit associated with the CRW project? Explain

**Response:** Crowned Ridge Wind objects to the data request as vague, overly broad, calls for speculation and is not reasonably calculated to lead to the discovery of admissible evidence in this proceeding before the PUC. Subject to and without waiving these objections, Crowned Ridge Wind is unaware of green energy tax credits available for the Crowned Ridge Wind project.

**Respondent:** Sam Massey, Director of Renewable Development  
Tyler Wilhelm, Project Manager

1-114) Will CRW, CRWF or NEER or any other affiliated entity, receive green tag credits associated with the CRW project? Explain

**Response:** Crowned Ridge Wind objects to the data request as vague, overly broad, calls for speculation and is not reasonably calculated to lead to the discovery of admissible evidence in this proceeding before the PUC. Subject to and without waiving these objections, Crowned Ridge Wind is unaware of green tag credits available for the Crowned Ridge Wind project.

**Respondent:** Sam Massey, Director of Renewable Development  
Tyler Wilhelm, Project Manager

1-115) Will CRW, CRWF or NEER or any other affiliated entity sell carbon credits associated with the CRW project? Explain

**Response:** Crowned Ridge Wind objects to the data request as vague, overly broad, calls for speculation and is not reasonably calculated to lead to the discovery of admissible evidence in this proceeding before the PUC. Subject to and without waiving these objections, Crowned Ridge Wind is unaware of an ability to sell carbon credits for the Crowned Ridge Wind project.

**Respondent:** Sam Massey, Director of Renewable Development  
Tyler Wilhelm, Project Manager

1-116) Will CRW, CRWF or NEER or any other affiliate entity, receive production tax credit (PTC) associated with the CRW project? Explain

**Response:** Crowned Ridge Wind objects to the data request as overly broad, calls for speculation and is not reasonably calculated to lead to the discovery of admissible evidence in this proceeding before the PUC. Subject to and without waiving these objections, Crowned Ridge Wind is eligible to receive the Production Tax Credit if it is constructed by

December 31, 2020.

**Respondent:** Sam Massey, Director of Renewable Development  
Tyler Wilhelm, Project Manager

1-117) Will CRW, CRWF or NEER or any other affiliate, receive payment in lieu of taxes (PILOT) from the State of South Dakota? Explain

**Response:** Crowned Ridge Wind objects to the data request as vague, overly broad, calls for speculation and is not reasonably calculated to lead to the discovery of admissible evidence in this proceeding before the PUC. Subject to and without waiving these objections, Crowned Ridge Wind is unaware of the ability to receive payment in lieu of taxes (PILOT) from the State of South Dakota for the Crowned Ridge Wind project.

**Respondent:** Sam Massey, Director of Renewable Development  
Tyler Wilhelm, Project Manager

1-118) Will CRW, CRWF or NEER or any affiliate, receive PILOT from an entity other than South Dakota? Explain

**Response:** Crowned Ridge Wind objects to the data request as vague, overly broad, calls for speculation and is not reasonably calculated to lead to the discovery of admissible evidence in this proceeding before the PUC. Subject to and without waiving these objections, Crowned Ridge Wind is not in receipt of PILOT from an entity outside of South Dakota.

**Respondent:** Sam Massey, Director of Renewable Development  
Tyler Wilhelm, Project Manager

1-119) Has CRW, CRWF or NEER or any affiliate entity already received PTC money from any entity, agency or government regarding the development of any wind project activity in South Dakota? Explain

**Response:** Crowned Ridge Wind objects to the data request because it is overly broad, and is not reasonably calculated to lead to the discovery of admissible evidence in this proceeding before the PUC. Subject to and without waiving these objections, Crowned Ridge Wind has not already received PTCs for a wind project in South Dakota.

**Respondent:** Sam Massey, Director of Renewable Development  
Tyler Wilhelm, Project Manager

1-120) Has CRW, CRWF or NEER or any affiliate entity already received PILOT money from any entity, agency or government regarding the development of any wind project activity in South Dakota? Explain

**Response:** Please see response to 1-117. Crowned Ridge Wind has not received PILOT money.

**Respondent:** Sam Massey, Director of Renewable Development  
Tyler Wilhelm, Project Manager

1-121) Has CRW, CRWF or NEER or any affiliate entity already received carbon credit money from any entity, agency or government regarding the development of any wind project activity in South Dakota? Explain

**Response:** Please see response to 1-115. Crowned Ridge Wind has not received carbon tax money.

**Respondent:** Sam Massey, Director of Renewable Development  
Tyler Wilhelm, Project Manager

1-122) Has CRW, CRWF or NEER or any affiliate entity received funds from the South Dakota Governors Office of Economic Development (GOED)? Explain

**Response:** Crowned Ridge Wind objects to the data request because it is overly broad, and is not reasonably calculated to lead to the discovery of admissible evidence in this proceeding before the PUC. Subject to and without waiving these objections, Crowned Ridge Wind has not received funds from the South Dakota Governor's Office of Economic Development.

**Respondent:** Sam Massey, Director of Renewable Development  
Tyler Wilhelm, Project Manager

1-123) Application Page 102, 18.3.2, "grocery stores, hotels.... Will see an increase in business" .... Tyler Wilhelm and Sam Massey testimony Page 12 of 15 line 13 – 14, .... "including increasing the use of hotels" .... Has anyone affiliated with CRW, CRWF, or NEER ever stayed at the Grand Stay in Milbank, South Dakota?

1. Provide names of who stayed
2. Provide dates of stay
3. Provide dollar amount spent or any other form of compensation provided

**Response:** To the best of our knowledge, no representatives or affiliates of any of the named entities have ever stayed at the Grandstay Hotel in Milbank, South Dakota since the hotel's opening in November 2018.

**Respondent:** Sam Massey, Director of Renewable Development

Tyler Wilhelm, Project Manager

1-124) Application Page 102, 18.3.2, "grocery stores, hotels.... Will see an increase in business" .... Tyler Wilhelm and Sam Massey testimony Page 12 of 15 line 13 – 14, .... "including increasing the use of hotels" .... Has anyone affiliated with CRW, CRWF or NEER ever used the meeting room facilities, or conference rooms at the Grand Stay in Milbank, South Dakota?

1. Provide names of who used the meeting room facilities or conference room
2. Provide date of use
3. Provide dollar amount spent or any other form of compensation provided

**Response:**

To the best of our knowledge, no representatives or affiliates of any of the named entities have ever used the meeting room facilities, or conference rooms at the Grandstay Hotel in Milbank, South Dakota since the hotel's opening in November 2018.

**Respondent:** Sam Massey, Director of Renewable Development

Tyler Wilhelm, Project Manager

1-125) Application Page 102, 18.3.2, "grocery stores, hotels.... Will see an increase in business" .... Tyler Wilhelm and Sam Massey testimony Page 12 of 15 line 13 – 14, .... "including increasing the use of hotels" .... Has anyone affiliated with CRW, CRWF or NEER ever purchased food or drinks at the Grand Stay in Milbank, South Dakota?

1. Provide names of who purchase food or drink
2. Provide dates
3. Provide amount spent or any other form of compensation provided

**Response:**

To the best of our knowledge, no representatives or affiliates of any of the named entities have ever purchased food or drinks at the Grandstay Hotel in Milbank, South Dakota since the hotel's opening in November 2018.

**Respondent:** Sam Massey, Director of Renewable Development

Tyler Wilhelm, Project Manager

1-126) Tyler Wilhelm and Sam Massey testimony on page 13 of 15 line 1, “the wind facility will deliver enough energy to power more than 150,000 homes” is that continuous, night time, winter time, high load time, annually, weekly, hourly? Specify kilowatt of power provided per house hold, size of residence, location of the residences, duration of power provided. Be specific.

**Response:** Crowned Ridge Wind objects to the data request because it is overly broad, requests information not in Crowned Ridge Wind’s possession, and is not reasonably calculated to lead to the discovery of admissible evidence in this proceeding before the PUC. Subject to and without waiving these objections, the 150,000 homes figure for Crowned Ridge Wind was developed by Xcel Energy and set forth in a March 16, 2017 press release in the Argus Leader. This is a link to the press release:

<https://www.argusleader.com/story/news/business-journal/2017/03/16/xcel-energy-plans-largest-ever-wind-farm-sd/99247184/>

**Respondent:** Sam Massey, Director of Renewable Development  
Tyler Wilhelm, Project Manager

1-127) Tyler Wilhelm and Sam Massey testimony on page 13 of 15 line 1, “the wind facility will deliver enough energy to power more than 150,000 homes” Are those homes in South Dakota?

**Response:** Crowned Ridge Wind will sell the power to Northern States Power Company (NSP). It will, therefore, be NSP decision where to use the power.

**Respondent:** Sam Massey, Director of Renewable Development  
Tyler Wilhelm, Project Manager

1-128) Tyler Wilhelm and Sam Massey testimony on page 13 of 15 line 1, “the wind facility will deliver enough energy to power more than 150,000 homes” Is it possible this energy may be sold to corporations such as Facebook, Google, IKEA? Explain

**Response:** Please see response to 1-127.

**Respondent:** Sam Massey, Director of Renewable Development  
Tyler Wilhelm, Project Manager

1-129) Application, Page 102 section 18.2.2, last two lines, “Landowners will be compensated for any crop damage that occurs during the construction”

1. What provisions are made for payment?
2. What percentage of compound interest will be paid between the date that damage occurs to date of requirement to the aggrieved?
3. Is the aggrieved the landowner or crop owner?

**Response:****1. What provisions are made for payment?**

- Each time Crowned Ridge Wind exercises its rights under the Construction Right it shall compensate Owner for all crops lost or destroyed.
- Damages will be calculated by the following formula:  
*Unit Price x Unit Yield Per Acre x Acres Damaged = Damages*
- Prices for damaged or destroyed crops will be based on the average of the last previous March 1<sup>st</sup> and September 1<sup>st</sup> Chicago Board of Trade prices for that crop. If the crop is not traded on the Chicago Board of Trade, the price shall be based on the dominant trading exchange for that crop, but the formula should remain the same. Yield will be the average of the previous three (3) years' yields according to Owner's records for the smallest parcel of land that includes the damaged area. If Owner does not have yield records available, the parties will use Farm Service Agency records or other commonly used yield information available for the area.
- The parties shall try in good faith to agree to the extent of damage and acreage affected. If they cannot agree, they shall have the area measured and extent of damage assessed by an impartial party such as a crop insurance adjuster or extension agent. Any costs for such assessment shall be paid by Crowned Ridge Wind. If damage occurs during the initial construction of the Project, a crop compensation form shall be completed and delivered to Crowned Ridge Wind within two hundred forty (240) days after the completion of construction of the Project.
- If damage occurs during operation of the Project, a crop compensation form shall be completed and delivered to Crowned Ridge Wind within two hundred and forty (240) days after the damage occurs.
- Payment shall be made within sixty (60) days after mutual execution of the crop compensation form.

**2. What percentage of compound interest will be paid between the date that damage occurs to date of requirement to the aggrieved?**

- Crowned Ridge Wind does not include compounded interest in the crop compensation process.

**3. Is the aggrieved the landowner or crop owner?**

- Crop compensation will be issued to the crop owner. The crop owner could be the owner of the property or the tenant farmer of the property depending on how the farming operations or ownership of crops is structured for the given property.

**Respondent:** Sam Massey, Director of Renewable Development  
Tyler Wilhelm, Project Manager

1-130) Application, Page 102 section 18.2.2, last two lines, "Landowners will be compensated for any crop damage that occurs during the construction" What if the landowner does not own the crop? Explain

**Response:**

Please refer to response to DR 1-129.

**Respondent:** Sam Massey, Director of Renewable Development  
Tyler Wilhelm, Project Manager

1-131) Tyler Wilhelm and Sam Massey testimony page 7 of 15 lines 21 – 22 .... “as well as implement a mitigation plan” .... Provide the mitigation plan.

**Response:** A mitigation plan has not been formally adopted at this time. Crowned Ridge Wind will continue to collaborate with all local utilities to implement a mitigation plan to address how interferences would be cured though the operations and maintenance phase of the Project. This collaboration will continue until the Project’s layout is finalized.

**Respondent:** Sam Massey, Director of Renewable Development  
Tyler Wilhelm, Project Manager

1-132) Application Page 25 last paragraph, Provide the training, operation, maintenance, repair, service and safety manuals, documentations and checklists and warranty/guarantee documents for the “preventative maintenance on wind turbines”

**Response:** The requested documents are confidential and proprietary, and, therefore, Crowned Ridge Wind objects to providing them.

**Respondent:** Miles Schumacher, Attorney

1-133) Application Page 25 last paragraph, Provide the training, operation, maintenance, repair, service and safety manuals, documentations and checklists and warranty/guarantee documents for the “semi -annual maintenance checks”

**Response:** The requested documents are confidential and proprietary, and, therefore, Crowned Ridge Wind objects to providing them.

**Respondent:** Miles Schumacher, Attorney

1-134) Application Page 25 last paragraph, Provide the training, operation, maintenance, repair, service and safety manuals, documentations and checklists and warranty/guarantee documents for the “annual maintenance checks”

**Response:** The requested documents are confidential and proprietary, and, therefore, Crowned Ridge Wind objects to providing them.

**Respondent:** Miles Schumacher, Attorney

1-135) Application Page 25 of the application, Provide the training and safety material for employees for the “preventative maintenance”

**Response:** The requested documents are confidential and proprietary, and, therefore, Crowned Ridge Wind objects to providing them.

**Respondent:** Miles Schumacher, Attorney

1-136) Application Page 25 of the application, Provide the training and safety material for employees for the “semi-annual maintenance checks”

**Response:** The requested documents are confidential and proprietary, and, therefore, Crowned Ridge Wind objects to providing them.

**Respondent:** Miles Schumacher, Attorney

1-137) Application Page 25 of the application, Provide the training and safety material for employees for the “annual maintenance checks”

**Response:** The requested documents are confidential and proprietary, and, therefore, Crowned Ridge Wind objects to providing them.

**Respondent:** Miles Schumacher, Attorney

1-138) Application Page 25 of the application, Provide the manual and documentation for “turbine functionality checks”

**Response:** The requested documents are confidential and proprietary, and, therefore, Crowned Ridge Wind objects to providing them.

**Respondent:** Miles Schumacher, Attorney

1-139) Provide date and who CRW, NEER or any of its affiliates or agents contracted with to seismograph?

1. Where?
2. What data was collected including but not limited to natural resources, geology, mineral deposits, oil and gas formations, aquifers?
3. Who owns the collected data?
4. Who was this data shared with?
5. Has or will CRW, NEER, any of it’s affiliates or the entity contracted to seismograph or its affiliates receive payment or in-kind services for the information?

**Response:** A standard seismograph was not used for the project; instead, Bar Geotech hired Conetec to perform Geotech and Seismic/Piezocone Penetration testing (CPT) soundings were performed at a total of 165 current and former potential wind turbine locations. The testing was performed in accordance with ASTM D5778, “Standard Test Method for Performing Electronic Friction Cone and Piezocone Penetration Testing of Soils”. Tests were conducted to a depth of 60 feet, or until refusal. This testing occurred from May 2018



to January 2019. The purpose of the testing was solely for identifying the ground conditions and determining foundation design requirements. The data does not pertain to natural resources, geology, mineral deposits, oil and gas formations, aquifers. Crowned Ridge Wind owns the data associated with the soil conditions. The data has been shared with consultants, engineers and the general contractor for Crowned Ridge Wind. The information is solely used for design purposes and will not be sold or exchanged for services.

**Respondent:** Mark Thompson, Manager of Wind Engineering

1-140) Application Page 16 of application, section 4.2 Is South Dakota part of the ....  
“Renewable Portfolio Standard (RPS). . . .”

**Response:** South Dakota is not part of the Renewable Portfolio Standard (RPS) but is one of the states that has a voluntary renewable energy standard or target. The South Dakota Codified Law 49-34A-94 defines renewable electricity and recycled energy as including “wind that uses wind as the source of energy to produce electricity” (South Dakota Legislature Legislative Research Council 2019). The South Dakota Codified Law 49-34A-101 establishes the state renewable, recycled, and conserved energy objective “that ten percent of all electricity sold at retail within the state by the year 2015 be obtained from renewable, recycled, and conserved energy sources. In the case of renewable and recycled energy, the objective shall be measured by qualifying megawatt hours delivered at retail or by certificates representing credits purchased and retired to offset nonqualifying retail sales” (South Dakota Legislature Legislative Research Council 2019).

References:

South Dakota Legislature Legislative Research Council. 2019. South Dakota Codified Law 49-34A-94. Available at

[https://sdlegislature.gov/Statutes/Codified\\_Laws/DisplayStatute.aspx?Type=Statute&Statute=49-34A-94](https://sdlegislature.gov/Statutes/Codified_Laws/DisplayStatute.aspx?Type=Statute&Statute=49-34A-94). Accessed March 12, 2019.

South Dakota Legislature Legislative Research Council. 2019. South Dakota Codified Law 49-34A-94. Available at

[https://sdlegislature.gov/Statutes/Codified\\_Laws/DisplayStatute.aspx?Type=Statute&Statute=49-34A-101](https://sdlegislature.gov/Statutes/Codified_Laws/DisplayStatute.aspx?Type=Statute&Statute=49-34A-101). Accessed March 12, 2019

**Respondent:** Sam Massey, Director of Renewable Development

Tyler Wilhelm, Project Manager

1-141) Application Page 16 do any of the states have that have RPS policies have cost caps to limit increases to certain percentage of ratepayers?

**Response:** Crowned Ridge Wind objects to the data request because it is vague, overly broad, and is not reasonably calculated to lead to the discovery of admissible evidence in this proceeding before the PUC. Crowned Ridge Wind has no information responsive to this request.

**Respondent:** Sam Massey, Director of Renewable Development  
Tyler Wilhelm, Project Manager

1-142) Does the energy produced by the CRW project go to the Ottertail Power Plant?

**Response:** Crowned Ridge Wind objects to the data request because it is not reasonably calculated to lead to the discovery of admissible evidence in this proceeding before the PUC. Subject to and without waiving this objection, Crowned Ridge Wind will sell the power to Northern States Power Company (NSP). As contracted with NSP, the energy produced by Crowned Ridge Wind will be delivered to the Big Stone South 230kV substation owned by Otter Tail Power Company. Therefore, it will be NSP's decision where to use the power. Crowned Ridge Wind is unaware of the energy produced will go to any power plant.

**Respondent:** Sam Massey, Director of Renewable Development  
Tyler Wilhelm, Project Manager

1-143) Does the Ottertail Power Plant supply power to states with RPS policies?

**Response:** Crowned Ridge Wind objects to the data request because it is vague, overly broad, and is not reasonably calculated to lead to the discovery of admissible evidence in this proceeding before the PUC. Subject to and without waiving these objections Crowned Ridge Wind has no information responsive to this request.

**Respondent:** Sam Massey, Director of Renewable Development  
Tyler Wilhelm, Project Manager

1-144) Application, Page 21 regarding Access Roads and Crane Paths, "the Project will include 41.6 miles of new permanent access roads".

1. How will access roads be taxed?
2. Who will bear the tax burden?

**Response:**

**1. How will access roads be taxed?**

- Consistent with SDCL 10-35-18 and 10-35-19.1

**2. Who will bear the tax burden?**

- Tax increases that are based on Crowned Ridge Wind improvements are addressed with the landowners per the project's wind farm easement agreement.

**Respondent:** Sam Massey, Director of Renewable Development

Tyler Wilhelm, Project Manager

1-145) Application Page 41 regarding Groundwater Resources, Impacts and Mitigation. Turbine Foundations ... "typically up to 8 feet deep for spread foot style turbine foundation and up to 32 feet deep for P & H style foundation." Describe in detail:

1. Spread foot style foundations. Include: materials used, amounts of each material used, specification of materials used, methods of construction, reason for determination of foundation choice. Be Specific
2. P & H style foundations. Include: materials used, amounts of each material used, specification of materials used, methods of construction, reason for determination of foundation choice. Be Specific
3. How many of each style of foundation are in the CRW project and the location of the turbine of each foundation type.

**Response:**

1. Spread foot style foundations are the most common foundations for wind turbines. The foundations are made by first excavating to the required depth for the bottom of the footing, and then constructing the footing. The diameters typically range from 45 to 75 feet in diameter. A rebar cage is assembled which ultimately takes on tensile forces, then some formwork is put in place for pouring the concrete. Concrete, typically 3500-5000 PSI is used. A steel embedment ring is at the top of the foundation where the tower will bolt. The excavated material will then be placed back into the area on top of the spread foot foundation. The spread foot style foundations serve to distribute the building load to the soil, while adding strength to the foundation system in weak or expanding soils. Shifting soils push on foundation walls above the footing and laterally.

2. The P&H style foundation consists of two corrugated metal piles (CMP); one outer, typically 14 to 16 feet in diameter, and one inner, usually 10 to 12 feet in diameter. The depth is typically 26 to 34 feet deep depending on wind turbine generation loads and site geo-materials. The inner CMP is filled with compacted excavation spoils, and the annular space between the excavation and outer CMP is filled with lean concrete. PVC-encased threaded steel anchor bolts are aligned to match the WTG base flange holes and are installed between the CMPs, with a steel embedment ring at the bottom. Post-tensioning of the bolts, after the bottom tower section is installed place the foundation into compression, creating a tensionless foundation system.

Though these foundations require less volume of soil disturbance and less concrete, P&H style foundations are not ideal in the event that hard bedrock, soft clay soils, or loose sands with high groundwater levels are encountered.

3. All of the foundations are expected to be spread-footer foundations.

**Respondent:** Mark Thompson, Manager of Wind Engineering

- 1-146) Application, Page 41, regarding temporary impacts to groundwater:
1. Describe each type of potential impact
  2. Expected duration of each type of impact
  3. Mitigation measures during the impact (human, livestock and property)

**Response:**

1. 146-1) Section 10.1.1 (Page 41) of the Application describes potential impacts of the project on groundwater resources.
2. 146-2) Section 6.11 (Page 24) of the Application describes the duration of activities that may result in impacts to groundwater resources.
3. 146-3) Appropriate Best Management Practices (BMPs) are discussed in the following sections:
  - Section 2.1 (Page 12) - general BMPs;
  - Section 6.11 (Page 24) - livestock mitigation measures;
  - Section 10.2.2 (Page 44) - general BMPS;
  - Section 18.2.2 (Page 101) - agricultural impacts and mitigation to propety and livestock;
  - Section 22.2 (Page 114) - safety for physical and property damage and personal injury.

**Respondent:** Kim Wells, Environmental Services Manager

- 1-147) Application, Page 41 bottom of page, Provide the spill prevention and response plan mentioned.

**Response:** The spill prevention and response plan has not been drafted; and, therefore, there is no document to provide.

**Respondent:** Kim Wells, Environmental Services Manager

- 1-148) What well testing will be provided by CRW before, construction? Explain

**Response:** There is no well testing anticipated by Crowned Ridge Wind before construction.

**Respondent:** Mark Thompson, Manager of Wind Engineering

- 1-149) What well testing will be provided by CRW during construction? Explain

**Response:** There is no well testing anticipated by Crowned Ridge Wind during construction.

**Respondent:** Mark Thompson, Manager of Wind Engineering

1-150) What well testing will be provided by CRW after construction? Explain

**Response:** There is no well testing anticipated by Crowned Ridge Wind after construction.

**Respondent:** Mark Thompson, Manager of Wind Engineering

1-151) Application, page 47, line 7, of the first paragraph, provide the name of the biologists cited in 11.1.1, Existing Vegetation.

**Response:** The affiliation and name of the environmental report authors are set forth on the title page of those reports located in the Application's Appendices.

**Respondent:** Kim Wells, Environmental Services Manager

1-152) Provide copies of all data requests submitted by the PUC Staff and any party status entity to the applicant in this proceeding and copies of all responses to those data requests. Provide this information to date and on an ongoing basis.

**Response:** Attached are copies of copies of all data requests submitted by the PUC Staff and any party status entity to the applicant in this proceeding and copies of all responses to those data requests, with the exception of confidential documents, which are not provided.

**Respondent:** Miles Schumacher, Attorney