

APPENDIX A

Environmental Scoping Decision

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**In the Matter of the Application of
Buffalo Ridge Wind, LLC Project for a
Certificate of Need for a 109.2 MW Wind
Project in Lincoln and Pipestone Counties
PUC Docket No. IP-7006/CN-19-309**

**ENVIRONMENTAL REPORT
SCOPING DECISION**

The above matter has come before the assistant commissioner of the Department of Commerce (DOC) for a decision on the scope of the Environmental Report (ER) to be prepared in consideration of the Buffalo Ridge Wind, LLC (BRW) Application for a Certificate of Need (CN) for the proposed 109.2 Megawatt (MW) Buffalo Ridge Wind Project (BRWP) in the Minnesota counties of Lincoln and Pipestone. BRW is a wholly-owned indirect subsidiary of NextEra Energy Resources, LLC (NEER).

The project requires a CN and a Site Permit (SP) for the wind farm from the Minnesota Public Utilities Commission (Commission) before construction and operation. The CN (CN-19-309) and the SP (WS-19-394) are being considered by the Commission in separate dockets.

Statute and rule requires that an ER be prepared in a CN docket. The Department of Commerce's Energy Environmental Review and Analysis (EERA) staff is responsible for preparing the ER. The ER will be prepared per Minnesota Rules 7849.1100-2100, and is part of the record which the Commission will consider in making a decision on issuance of a CN for the BRWP.

On July 12, 2019, BRW, LLC filed a CN Application with the Commission for the BRWP.¹ On August 9, 2019, the Applicant submitted a revised CN Application.² On July 17, 2019, BRW submitted a Site Permit Application and on August 12, 2019, the Applicant submitted a revised SPA.³ The revisions provided information regarding certain changes to the Project; these changes were necessary, in part, to bring projected noise levels in line with Minnesota Pollution Control Agency (MPCA) state noise standards.

On November 12, 2019, the Commission issued an order accepting the Application as substantially complete and authorizing an informal review process.⁴

¹ Application for a Certificate of Need – Buffalo Ridge Wind, July 12, 2019, eDocket No. [20197-154343-01](#), [20197-154345-01](#), and [20197-154346-01](#)

² Revised Application for a Certificate of Need – Buffalo Ridge Wind, August 9, 2019, eDockets No. [20198-155093-01](#)

³ See eDockets No. [20198-155166-01](#), [20198-155124-01](#), [20198-155124-02](#), [20198-155124-03](#) and [20198-155124-04](#)

⁴ Order –Accepting Application Directing Use of Informal Review Process, November 12, 2019, eDocket No. [201911-157439-01](#)

The proposed project encompasses approximately 17,610 acres. The Applicant has proposed 45 wind turbine sites (40 proposed turbines plus five alternate sites) with a combination of three turbine sizes for the project: 31 General Electric (GE) 2.82 MW wind turbine generators (WTGs), five GE 2.52 MW WTGs, and four GE 2.3 MW WTGs. The turbine towers at hub height will be 292 feet for the two larger turbines and 262.5 feet for the smaller turbine size. The proposed Project collector substation will connect to the existing Buffalo Ridge Substation via a short transmission jumper (less than 1,500 feet in length) that will cross existing transmission lines owned by NSP. The Project will also include installation of one (1) permanent meteorological tower (MET) tower.

A Public Meeting was held on December 5, 2019, in Lake Benton to receive comments on the scope of the ER.⁵ Approximately 35 to 40 persons attended the meeting. A public comment period following the meeting closed on December 27, 2019. Several members of the public commented during the Public Meeting.⁶ The speakers and their comments are summarized as follows:

Bob Worth: commented as a farmer and as the mayor of the city of Lake Benton. As a farmer, Mr. Worth noted that the turbine access roads were helpful in getting his commodities out of the fields, presented no problems in farming around them and expressed support for the project. As the mayor of Lake Benton, his comments noted that this project is an opportunity for the community to benefit the businesses and jobs it will provide.⁷

Mike Appel: commented about the purpose of the project boundary extending into Fountain Prairie Township in Pipestone County.⁸ EERA staff and NextEra identified this extension as an access buffer.⁹

Will Thomssen: commenting as a union rep for local 49, expressed full support for the proposed project.¹⁰

Jim Nichols: commented about the benefits of wind energy development to Lincoln County as the industry provides more than 50 permanent jobs that provide for good wages and benefits, how the production taxes benefit everyone in the community, annual payments to landowners and road development agreements. Mr. Nichols also noted that wind energy is a crop we can produce out here, transport instantaneously, and is an incredible deal for the consumers because of the cheap cost of power produced by wind. Mr. Nichols commented (later in the meeting) about the role the Federal Energy Regulatory Commission (FERC) and the Midwest Independent

⁵ Notice Public Information and Scoping Meeting, November 2, 2019, eDocket No. [201911-157565-01](#)

⁶ Public Comments – Public Scoping & information Meeting, eDocket No. [201912-158427-02](#) or [201912-158427-01](#)

⁷ *Id.*, eDocket No. [201912-158427-01](#), p. 27-28

⁸ *Id.*, eDocket No. [201912-158427-01](#), p. 30-31

⁹ *Id.*, eDocket No. [201912-158427-01](#), p. 30-31

¹⁰ *Id.*, eDocket No. [201912-158427-01](#), p. 32

System Operator (MISO) and the influence they have on determining additional transmission line costs, transmission line upgrades and interconnections.¹¹

Nate O'Reilly: commented as a member of the Ironworkers who erect and build the turbines and spoke in support of the project. Mr. O'Reilly thanked NextEra for their commitment to hiring local Minnesota workers and selecting contractors that will pay the established area wages and benefits.¹²

Dale Johnson: wanted to know if there are going to be transmission lines.¹³ NextEra responded by indicating that there will no transmission lines on the project and further stated that a parcel of land was purchased for a substation immediately adjacent to the Lake Benton substation and that all of the collector lines will be routed underground to the proposed substation.

Written Comments

Mike Czech: comments addressed three different topics: 1) how interference with TV and radio signals is tested before the towers are built; 2) who can attend the pre-construction meeting and if there will be a web page for comment and progress reports; and 3) how will issues be communicated to residents, townships, etc.¹⁴

Leslie Wigton: through his counsel, commented as follows: Presently the proposed connection lines marked in yellow on the ATWELL maps and in red on the Pictometry map will cross diagonally from the Northeast to the Southwest of Mr. Wigton's property. Crossing in this manner poses two (2) problems for Mr. Wigton.

First, the proposed crossing will potentially interfere with existing clay drainage tiles and hamper future tile maintenance because the connection lines cross directly through tiled areas of Mr. Wigton's property.

Second, the proposed connection lines cross directly through area that Mr. Wigton has developed for wildlife habitat including planting numerous and native grasses. This area has been maintained in that manner for over twenty years (20) years. Mr. Wigton is concerned that the directional boring of the lines could physically damage his trees by destroying the root system.

In closing, Mr. Wigton noted that these impacts can be avoided by simply moving the proposed collection lines further to the east, preferably parallel to his fence line and outside of the wildlife area located in the Southwest corner of his property. As Mr. Wigton has been advised that he

¹¹ *Id.*, eDocket No. [201912-158427-01](#), p. 33-35 and 41

¹² *Id.*, eDocket No. [201912-158427-01](#), p. 37

¹³ *Id.*, eDocket No. [201912-158427-01](#), p.40

¹⁴ See, eDocket No. [201912-158646-01](#) or [201912-158644-01](#)

will not receive a tower, he would prefer that the project would impact his property as little as possible.¹⁵

MnDOT: The Minnesota Department of Transportation (MnDOT) stated in its comments that wind farm construction work, including delivery/storage of structures, materials and/or equipment that may affect MNDOT right of way is of concern such that MNDOT should be involved in planning and coordinating such activities. Additionally, MNDOT stated that the site permit should include language specifying that the Permittee shall obtain all relevant permits from road authorities relating to the transport of oversize materials and equipment related to the project over public roads, as well as installation of facilities that may be proposed to occupy portions of public road rights of way.

Additionally, for the site permit, MnDOT recommended the following:

1. MnDOT prefers that the proposed access road for turbine number 11 be from County Road 6 versus US 14 or for the Applicant to utilize an existing access road from US 14.
2. MnDOT requests the following be submitted in a timely manner for proper review:
 - a. Submittal of a crossing plan for the crane path affecting US 14
 - b. Submittal of a Traffic Control Plan
 - c. Submittal of a detour plan for temporary closures of any trunk highway.¹⁶

These comments deal with site specific construction issues and will be addressed in the LWECS site permit application process (Docket IP-7006/WS-19-394).

MN DNR: The Minnesota Department of Natural Resources (DNR) indicated in its comments that turbine locations should be reviewed to ensure they comply with the wind access buffer associated with DNR administered lands as a non-participating landowner. DNR also recommended that turbines be located an additional 200 feet beyond the existing wind access buffer from DNR administered lands to allow for future repowering because DNR does not support future exemptions to wind access buffers adjacent to their administered lands in order to avoid extending the rotor swept zone to minimize increasing potential avian and bat fatalities.¹⁷ The DNR comments also included an April 5, 2019 letter from the DNR Natural heritage Review regarding impacts to rare species identified in the vicinity of the proposed project. This letter was included in the site permit application.¹⁸

Alternatives to the Project:

¹⁵ See, eDocket No. [201912-158647-01](#) or [201912-158645-01](#)

¹⁶ Public Comment – MNDOT, eDocket No. [201912-158512-01](#) or [201912-158512-01](#)

¹⁷ Public Comment- MN NDR, eDocket No. [201912-158605-01](#) or [201912-158647-01](#)

¹⁸ Public Comment- MN NDR, eDocket No. [201912-158605-02](#) or [201912-158649-01](#)

None of the comments received from members of the public or any state agency recommended system or project alternatives to be considered in the ER.

The proposed project is intended to produce renewable energy in furtherance of Minnesota’s renewable energy objectives. Because of this objective, Buffalo Ridge Wind on May 12, 2019, requested that the Commission grant exemptions for certain CN information requirements not applicable to independent power producers (“IPPs”).¹⁹ On May 16, 2019, the Commission issued “Notice on Comment Period on Certificate of Need Exemption Requests.”²⁰ On May 28, 2019, comments were received from the Laborers International Union of North America (LIUNA)²¹ and the DOC, Division of Energy Resources (DER)²² in support of the requests for exemptions from BRW. On July 3, 2019, a Commission order granted the requested exemptions with conditions (see order for details of exemptions granted).²³

Accordingly, alternatives examined in the ER will be limited to “eligible energy technologies” that support Minnesota’s renewable energy objectives (Minnesota Statute 216B.1691). These alternatives will include: (1) a generic 109 MW wind generation project sited elsewhere in Minnesota, (2) a 109 MW solar farm, (3) a “no-build” option, and other possible renewable alternatives. An ER provides a high level environmental analysis of the proposed project and system alternatives, and reviews environmental impacts associated with named and alternative projects. It is a part of a larger Commission investigation of the CN Application. The Commission in its overall review will address all the issues and alternatives required by rule, except the exemptions granted on July 3, 2019.

Having reviewed the matter and consulted with the Department of Commerce EERA staff, and in accordance with Minnesota Rules 7849.1400 and 7849.1500, I hereby make the following scoping decision:

MATTERS TO BE ADDRESSED

Buffalo Ridge Wind Project

Abstract

- 1 Introduction**
- 2 Regulatory Framework**
 - 2.1 Environmental Report

¹⁹ Petition for Exemption from Certain Certificate of Need Application Requirements of Buffalo Ridge Wind Energy, LLC, see Dockets No. [20195-152773-01](#)

²⁰ Commission Notice of Comment period on Certificate of Need Exemption Requests, see eDockets No. [20195-152961-01](#)

²¹ Comments from Laborers International Union of North America, see eDockets No. [20195-153161-01](#)

²² Comments from the Minnesota Department of Commerce, Division of Energy Resources, see eDockets No. [20195-153161-01](#)

²³ Commission Order, July 3, 2019, see eDockets No. [20197-154183-01](#)

2.2 Permitting Authority and Additional Permits

2.3 Public Participation

3 Description of the Proposed Project [Minn. Rule 7849.1500, subp. 1, A]

3.1 Project Description

3.2 Project Location

3.3 Project Cost and Schedule

4 Description of Project Alternatives [Minn. Rule 7849.1500, subp. 1, B]

4.1 109 MW LWECs

4.2 109 MW Solar Farm

4.3 No Build Alternative

5 The No Build Alternative

5.1 Impacts

5.2 Benefits

6 Human and Environmental Impacts [Minn. Rule 7849.1500, subp. 1, C, D, E]

6.1 Air Quality [Minn. Rule 7849.1500, subp. 2,]

6.1.1 Criteria Pollutants

6.1.2 Hazardous Air Pollutants and Volatile Organic Compounds

6.1.3 Ozone

6.2 Water Resources

6.2.1 Water Appropriations [Minn. Rule 7849.1500, subp. 2, G]

6.2.2 Wastewater [Minn. Rule 7849.1500, subp. 2, H]

6.2.3 Groundwater

6.2.4 Surface Water

6.2.5 Wetlands

6.3 Solid and Hazardous Wastes [Minn. Rule 7849.1500, subp. 2, I]

6.4 Natural Resources

6.4.1 Environmental Setting

6.4.2 Wildlife

6.4.3 Vegetation

6.4.4 Rare and Unique Natural Resources

6.5 Human and Social Environment

6.5.1 Demographics

6.5.2 Aesthetic Impact and Visibility Impairment

6.5.3 Shadow Flicker

6.5.4 Facility and Turbine lighting
Aircraft detection lighting systems (ADLS)

6.5.5 Noise [Minn. Rule 7849.1500, subp. 2, J]

6.5.6 Property values

6.5.7 Local Economy

6.5.8 Public Health and Safety

6.6 Associated Electrical Facilities and Existing Infrastructure

- 6.6.1 Associated Electrical Facilities [Minn. Rule 7849.1500, subp. 2, F]
- 6.6.2 Existing Infrastructure
- 6.7 Fuel Availability [Minn. Rule 7849.1500, subp. 2, E]
- 6.8 Agriculture
 - 6.8.1 Cropland
 - 6.8.2 Livestock
- 7 Availability and Feasibility of Alternatives [Minn. Rule 7849.1500, subp. 1, F]**
 - 7.1 Buffalo Ridge Wind Project
 - 7.2 109 MW LWECs
 - 7.3 109 MW Solar Farm
 - 7.4 No-build Alternative
 - 7.5 Additional Renewable Alternatives

8 Permits [Minn. Rule 7849.1500, subp. 1, G]

The above outline is not intended to serve as a “Table of Contents” for the ER document, and as such, the organization (i.e., structure of the document) of the information and the data may not be similar to that appearing in the ER.

ISSUES OUTSIDE OF THE ENVIRONMENTAL REPORT

The ER will not consider the following matters:

1. Impacts or mitigative measures associated with specific sites, including specific tower or road locations for the proposed project and alternatives.
2. The negotiation and content of easement agreements by which land owners are paid for property rights, including wind rights.
3. Any alternatives not specifically described in this scoping decision.

SCHEDULE

The Environmental Report will be completed no later than March 6, 2020. A public hearing will be held in the Project Area before an Administrative Law Judge after the ER has been issued and notice served.

Signed this 10 day of January 2020

STATE OF MINNESOTA
DEPARTMENT OF COMMERCE
DIVISION OF ENERGY RESOURCES



Katherine Blauvelt, Assistant Commissioner

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APPENDIX B
Decommissioning Plan

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DECOMMISSIONING PLAN

Buffalo Ridge Wind Energy Facility

Buffalo Ridge Wind, LLC

February 19, 2020

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Decommissioning Plan for the Buffalo Ridge Wind Energy Facility

1.0 INTRODUCTION

1.1 Background

Buffalo Ridge Wind, LLC (“BRW”) has prepared this Decommissioning Plan (“Plan”) to provide documentation of activities necessary to decommission the Buffalo Ridge Wind Energy Facility (“Project”) and restore the Project area in accordance with the requirements of Minn. R. 7854.0500, subp.13.

On July 17, 2019, BRW filed a Site Permit application with the Minnesota Public Utilities Commission (“Commission”) to construct and operate the 109 megawatt (“MW”) wind energy facility (MPUC Docket Number: IP-70061/WS-19-394). BRW subsequently filed a revised Site Permit Application on August 9, 2019. BRW also submitted a Certificate of Need (“CON”) application for the Project on July 12, 2019, and subsequently filed a revised CON application on August 9, 2019. BRW submitted a Site Permit and CON application amendment on February 19, 2020. The proposed Project includes the installation of up to 40 wind turbines, associated access roads, underground collection system, and associated facilities.

1.2 Anticipated Life of the Project

BRW expects the Project to be in service for 25 years. This estimate is based on BRW’s experience operating projects, turbine models, and technology.

2.0 DECOMMISSIONING AND RESTORATION

2.1 Decommissioning Preparation Activities

The wind farm will be disconnected from the grid to allow for the safe dismantling of the Project in coordination with the transmission line owner.

2.2 Removal of Facilities

Decommissioning will include the dismantling and removal of the wind towers, wind turbine generators, foundations, meteorological towers, access roads, underground collection lines, pad mounted transformers, collection substation, and the operations and maintenance (O&M) facility to a depth of four feet, unless requested by the landowner or other entity. Turbine tower sections will be dismantled utilizing cranes. A single large crane is typically used to disassemble the turbines, and smaller cranes would lift the parts onto trucks to be hauled away. Meteorological towers will also be similarly removed.

After dismantling and excavating the facility, high value components will be removed for scrap value. The remaining materials will be left on the landowner property where expressly requested by the landowner or will be reduced to transportable size and removed from the site for disposal. Materials will be disposed where disposal is permitted and where there is capacity for the disposal. Generally, turbines, transformers, electrical components, and towers are refurbished and resold or are recycled for scrap. All unsalvageable materials will be disposed of at authorized sites in accordance with applicable regulations. Decommissioning of the existing turbines will include removal and transport of generators and towers offsite to disposal facilities and/or sale of towers and generators.

Following the dismantling and removal of Project infrastructure, BRW will return the Project Area as close to preconstruction conditions as reasonable in accordance with the lease agreement between the landowner and BRW.

2.2.1 Turbines and MET Tower

The disassembly and removal of this equipment will essentially be the same as its installation, but in reverse order. For turbines, the rotor (hub and blades) are removed from the nacelle and, with the help of a smaller crane, turned horizontally and set on the ground. Next, the nacelle will be removed from the top of the tower, followed by each portion of the tower. Once the turbine rotor has been removed, a crew and small crane will disassemble it into the hub and three loose turbine blades. When the rotor is disassembled, the blades will be placed into a carrying frame, which can then be loaded onto a truck for removal from the site. The hub can also be removed once it is disassembled from the blades. Turbine foundations will be removed to a depth of four feet. BRW will work with landowners regarding whether the landowner prefers to keep extracted concrete on their property. If landowners prefer to keep extracted concrete, the concrete will be crushed and provided to the landowner.

The MET tower will also be removed in a similar fashion to the turbines. A small crane will be used to dismantle the structure from the top down and will be loaded onto trucks to be removed from the site.

2.2.2 Access Roads

BRW will work with landowners regarding whether the landowner prefers to keep the access road in place. In the event landowners do not want to keep the access road, or portions thereof, the access roads will be removed and the land will be restored.

2.2.3 Underground Collection and Pad Mounted Transformers

Where feasible, all underground collection lines buried above four feet below the surface will be removed. Underground collection buried below the plow line will be left in place unless requested by the landowner or other entity. BRW will work with landowners or applicable entities to

determine if underground collection lines may be left in place when located above four feet below the surface to minimize impacts to the environment. If the cables are to be removed, a trench will be opened and the cables pulled out. The cables will be cut into manageable sections and removed from the site.

Pad mounted transformers will be disconnected from the collection system and wind turbine generators once the electrical system has been shut off and hauled offsite. The concrete pads will be crushed and either hauled offsite or provided to the landowner, if requested.

2.2.4 Collection Substation and O&M

All above ground structures at the collection substation including the conductors, switches, transformers, fencing, and other components will be dismantled and removed from the site. Additionally, the structures at the Project O&M facilities will be removed. All concrete foundations will be crushed and either hauled offsite or provided to the landowner, if requested. Where feasible, all underground infrastructure associated with the substation or O&M, including underground conduits and grounding wires, will also be removed to a depth of four feet, unless it has been negotiated with the landowner that this infrastructure may be abandoned in place.

2.3 Salvage and Disposal

After dismantling the Project, high value components will be removed for scrap value. The remaining materials will be left on the landowner property where expressly requested by the landowner, or will be reduced to transportable size and removed from the site for disposal. Materials will be disposed where disposal is permitted and where there is capacity for the disposal. Generally, turbines, transformers, electrical components, and towers are refurbished and resold or are recycled for scrap. All unsalvageable materials will be disposed of at authorized sites in accordance with applicable regulations. Decommissioning of the turbines will include removal and transport of generators and towers offsite to disposal facilities and/or sale of towers and generators.

2.4 Restoration

Following the dismantling and removal of Project infrastructure, BRW will return the Project Area as close to preconstruction conditions as reasonable. BRW will implement the following:

- All areas where infrastructure has been removed will be graded and reseeded, as appropriate.
 - BRW will coordinate with local Natural Resources Conservation Service staff to revegetate non-cropland and pasture areas disturbed during decommissioning with native seed mixes appropriate to the region. Reseeding with native seed mixtures will be used on restoration areas except in cropland areas and in areas where

landowners indicate preference for other seeding plans. Reseeding of cropland areas will be conducted in coordination with the landowner.

- After removal of all foundation materials, the areas will be filled with clean compatible sub-grade material compacted to a density similar to the surrounding sub-grade material.
- Topsoil will be removed prior to removal of structures from all work areas and stockpiled and separated from other excavated material. The topsoil will be replaced to original depth and original surface contours reestablished where possible. Any topsoil deficiency and trench settling shall be mitigated with imported topsoil consistent with the quality of the affected site
- Areas compacted by equipment used in the decommissioning may be tilled in a manner adequate to restore the topsoil and subgrade material to a density consistent with the surrounding areas and then will be reseeded. The depth of compaction relief will depend on site-specific conditions.

3.0 COST ESTIMATE

3.1 Estimated Cost of Decommissioning

At the time of retirement, the above-grade steel structures and turbine nacelles are assumed to have significant scrap value that will offset a portion of the cost to remove these items. However, the Project will also incur costs for removal and disposal of the wind turbine generator blades, foundations, and other Project facilities, along with the costs for the restoration of the site following the removal of salvageable equipment and disposal of other items.

The decommissioning cost estimate provided herein includes the costs to return the site to a condition compatible with the surrounding land and similar to the conditions that existed before development of the Project. Included in the estimate are the costs to decommission the power generating equipment associated with the Project, as well as the costs to retire the Project facilities, with all turbine foundations removed to a depth of 4 feet below grade. These costs are offset by the estimated revenue that will be received for scrap value of steel, aluminum, and copper equipment; no resale of the Project facilities for reuse is considered. Accordingly, it is a “no resale” estimate.

This cost estimate will be revised once every ten years to take into account market-based fluctuations in commodity pricing and associated salvage value.

Table 1. Decommissioning Cost (in current dollars)

1.0 Field Activities		Quantity	Unit	Unit Price	Cost Estimate
	1.1 Field Equipment, facilities, & personnel	1	Lump Sum	\$907,218	\$907,218
	1.2 Site Facilities - Rental	1	Lump Sum	\$8,620	\$8,620
	1.3 Field Management	15	Weekly	\$18,282	\$274,234.65
2.0 Substation					
	2.1 Substation & Switchyard Removal	1	Lump Sum	\$146,941	\$146,941
3.0 Tower and Nacelle Units					
	3.1 Construct/remove temporary crane pads	40	Each	\$7,593	\$303,720
	3.2 Turbine Removal	40	Each	\$30,000	\$1,200,000
	3.3 Turbine Foundation Removal	40	Each	\$2,936	\$117,440
	3.4 Turbine Sizing & Loadout (Salvage Value)	40	Each	(\$21,770)	(\$870,800)
4.0 Pad Mounted Transformer & Collection Line Removal					
	4.1 Pad Mount Transformers	40	Each	\$1,734	\$69,364
	4.2 Underground collection line (~28 miles of electrical collection line)	28	Miles	\$11,189	\$313,292
5.0 Tower Access and Site Roads					
	5.1 Restoration of Gravel Road (~20.6 miles of gravel road)	21,270	Cubic Yard	\$11	\$235,459
	5.2 Culvert Removals	12	Each	\$488	\$5,859
6.0 Site Restoration					
	6.1 Site Restoration, Seeding, and Revegetation (~20.6 miles access roads, 5.6 acre substation, and 0.5 acres/turbine site)	1	Lump Sum	\$305,000	\$305,000
7.0 Ancillary Equipment Removal					
	7.1 Meteorological Tower Removal	1	Each	\$1,681	\$1,681
	7.2 ADLS Radar Removal	2	Each	\$1,992	\$3,984
8.0 Administrative & Project Management Tasks					
	8.1 Home Office, Project Management	1	Lump Sum	\$154,736	\$154,736
	8.21 Contractor OH & Fee (13%)	1	Percent	\$412,977	\$412,977
TOTAL:					\$3,589,726

3.1 Assumptions

The Project was broken into individual tasks that were each estimated separately to include labor requirements, equipment needs, and duration. Production rates were established in accordance with similar decommissioning plans. Labor rates prevalent to the geographic area of the Project were obtained by referencing U.S. Department of Labor wage determinations. After the estimate was completed, typical average markups that are industry standard were applied for contingency, overhead, and fee. Estimating methods and assumptions specific to this estimate are as follows:

- Labor costs were developed by reviewing U.S. Department of Labor wage determinations and rates published by RS Means. An average rate was developed that includes base wage, fringe, and payroll tax liability. The final rate used in the estimate is an average of 40 hours standard (ST), and 10 hours overtime (OT) per week, assuming a 50-hour work week during decommissioning activities.
- Equipment (commonly referred to as yellow iron) rates used in the estimate are developed based on historical vendor quotes derived from RS Means. Rates include fuel, maintenance and wear & tear of ground engaging components. Rates utilized assume the use of rental equipment, not owned.
- Mobilization and demobilization costs reflect the actual cost to mobilize equipment, facilities and crew to the project site. A substantial portion of this cost is for the crane and crew required for turbine removal. This amount does not include the front loading of cost from other tasks.
- Work was estimated on a unit cost basis, priced by task that follows the progression of work from start to finish. Unit costs are developed by including the labor, equipment and production rate required for each individual task. Historical vendor quotes and estimator's experience are utilized to establish the crew, equipment and production for each individual task.
- Turbine removal will require the construction and subsequent removal of temporary crane pads. Estimated cost of crane pads is based on an engineered design from a similar project.
- All concrete foundations will be removed to a depth of 4 feet below grade. Gravel from road removal will be utilized to backfill to within 6 inches of final grade, and then completed with an additional 6 inches of topsoil. Concrete foundation removal will be accomplished with the use of excavators with concrete breakers. Processed concrete will be transported offsite under the same assumptions as road gravel.
- The costs for temporary facilities have been included in the restoration cost. These include one office trailer, two Conex storage units, portolets, first aid supplies and utilities
- Field management during construction activities has been added to the estimate. These costs include one Superintendent, one Health and Safety Rep and two Field Engineers. These positions are critical to the safe and successful execution of work.
- A contractor's Home Office, Project Management, Over Head and Fee can vary widely by contractor. As such, averages were developed for the estimate and added as a percentage of total cost. These include 5 percent for Home Office and Project Management, and 13 percent for Overhead and Fee. Note that Contractor contingency costs are not included.

Several other miscellaneous costs have been approximated, including permits, engineering, signage, fencing, traffic control, utility disconnects, etc. In the context of the overall estimate, these are incidental costs that are covered in the estimate markups.

4.0 DECOMMISSIONING SECURITY

BRW will establish performance bonds with Lincoln County for the total amount of infrastructure located within those communities. A preliminary form of the agreement was shared with Lincoln County on February 25, 2020. The amount of the assurance, a timeline for funding of the assurance, a description of how the amount of security available will be reconciled with the changing cost estimates, and the proposed beneficiary of the security will be finalized with Lincoln County prior to operation.