APPENDIX K – Decommissioning Plan

DECOMMISSIONING PLAN

Dodge County Wind Energy Facility

Docket No. IP-6981/WS-20-866

Dodge County Wind, LLC

July 27, 2021

Decommissioning Plan: Dodge County Wind Energy Facility

1.0 INTRODUCTION

1.1 Background

Dodge County Wind, LLC (DCW) is filing a Site Permit application with the Minnesota Public Utilities Commission (Commission) to construct and operate a 258.92-megawatt (MW) wind energy facility. The Dodge County Wind Energy Facility (Project) will comprise of 60 GE 3.4 MW (HH = 98m) turbines, 8 GE 3.4 MW (HH = 81m) turbines, and 11 GE 2.52 MW (HH = 90m) turbines; 26 miles of access roads; 72 miles of underground electrical collection; and associated facilities. The Project is located in Dodge and Steele Counties, Minnesota, and includes approximately 19,802 acres of mostly farmland. A power purchase agreement has been signed with Great River Energy for a duration of 30 years. The anticipated commercial operation date for the Project is end of 2023.

1.2 Decommissioning Plan Objective

DCW anticipates that a condition of the Site Permit will be submission of a Decommissioning Plan prior to construction of the facility, with updates to the Plan every five years thereafter. The Plan will provide information identifying all surety and financial securities established for decommissioning and site restoration of the Project in accordance with the requirements of Minnesota Administrative Rules 7854.0500, subpart 13.

At the end of the project's useful life, DCW plans to decommission the facility. The purpose of this Decommissioning Plan is to establish the protocols for disassembly of the Project and to financially guarantee funding of the decommissioning process for assurance the site can be restored to a condition as close to its preconstruction state as feasible.

As part of this Decommissioning Plan, DCW is providing a third-party detailed estimated cost schedule prepared by Atwell, LLC, for project decommissioning activities (see Attachment A). Estimated costs of decommissioning have increased since DCW last filed its Decommissioning Plan in March 2019. This is largely attributable to increases in the estimated cost of concrete foundation demolition and disposal, which are decommissioning undertakings associated with both wind turbine and substation equipment.

DCW will furnish a financial surety, bond, or other form of surety equal to the total estimated cost to Dodge and Steele Counties. The financial surety will ensure adequate financing for the decommissioning process, available to Dodge and Steele Counties, for administering the decommissioning and restoration process.

This Decommissioning Plan has been created to establish the approach for the following decommissioning activities:

- Site preparation and acquisition of necessary permits required for the structural

dismantling activities (crane pads, crane paths, etc.)
- Installation of soil erosion and sedimentation control best management practices (BMPs)
- Disassembly and removal of existing turbines
- Abandonment or removal of existing infrastructure associated with the turbines
- Scarification and reseeding of disturbed areas, where applicable
- Establishment of vegetation on disturbed soils
- Mitigation for potential impacts on sensitive environmental features including agricultural soils
- Mitigation for potential impacts to agricultural facilities, agricultural drainage tiles, and public drainage ditches, if affected

The Decommissioning Plan has been developed per the following guidelines:

- Conformance with Minnesota Administrative Rules 7854.0500, subp.13
- Energy Environmental Review and Analysis (EERA) Large Wind Energy Conversion System (LWECS) Application Guidance
- EERA Recommendations on Review of Solar and Wind Decommissioning Plans (Commission Docket Number E999/M-17-123)

1.3 Anticipated Life of the Project

DCW estimates that the Project will have a useful life of at least 30 years. Once the Project has reached its useful life, implementation of the steps described in this Decommissioning Plan can be completed to restore the land to the condition it was in prior to operation of the Project. This Decommissioning Plan also provides a guarantee that DCW has a surety, bond, or other form of financial surety in place that will cover the cost of that decommissioning effort.

2.0 DECOMMISSIONING PROCESS PROTOCOL

2.1 Decommissioning Notification

Once DCW has determined that the Project has reached the end of its useful life and is ready to be decommissioned, DCW will first notify participating landowners, local governments, and the Commission of initiation and commencement of planned decommissioning activities via a mailed letter 10 days prior to inception of those planned activities. This letter will also provide the name and contact information of an individual designated by DCW to manage landowner inquiries. Once decommissioning restoration is completed, DCW will notify all participating landowners, local government, and the Commission of decommissioning completion via a mailed letter within 30 days of completion.

2.2 Decommissioning Preparation Activities

The first step in the Decommissioning Plan will be for DCW to contact all participating landowners to determine their preference on removal or abandonment of project infrastructure. For example,

some landowners may prefer to leave access roads in place because often the access roads benefit their farming activities. Electrical collection lines may also be left in place at the landowner's request to reduce disruption of their fields.

DCW has a contractual obligation with landowners for restoration of properties back to a condition comparable to that of the property prior to the installation of the Project. Per section 11.4 of the LWECS Application Guidance, DCW is providing example decommissioning, abandonment, and removal condition language for reference from the landowner lease agreements below:

> *Removal of Improvements. (a) Within eighteen (18) months after termination or expiration of the Easement Term, Operator shall, unless otherwise agreed by Owner, remove all of the Improvements on the Owner's Property and restore the Owner's Property to its approximate original condition that existed before Operator constructed its Improvements all at Operator's sole cost and expense. At termination or expiration of the Easement Term, Operator shall be required to remove facilities down to a level of forty-eight (48) inches below grade and return the grade to a condition comparable to conditions prior to Operator's installation of Improvements on the Owner's Property. If Operator fails to remove any portion of the Improvements or restore the Owner Property as required within the required time period, that portion of the Improvements shall be considered abandoned by Operator and Owner may remove that portion of the Improvements from the Owner's Property and dispose of it in its sole discretion without notice or liability to Operator. In the event Operator fails to remove any of the Improvements or restore the Owner's Property as required, and Owner removes any portion of the Improvements or restores the Owner's Property at Owner's expense, Operator shall reimburse Owner for all reasonable costs of removing that portion of the Improvements or restoration of the Owner's Property as required by the Site Permit and/or this Agreement, less any salvage or resale value received by Owner, within thirty (30) days after receipt of an invoice from Owner. If Operator fails to pay or reimburse Owner for any decommissioning, removal or restoration costs, Owner may withdraw such funds from the Decommissioning Security or pursue any other lawful remedy or recourse.*

Once the landowner coordination has occurred and the extent of disturbance areas are understood, DCW will develop a Storm Water Pollution Prevention Plan (SWPPP) and submit for a National Pollutant Discharge Elimination System permit based on the anticipated disturbances for both demolition and new temporary construction required for project component removal. Crane pads and potential crane walks will be installed to support the turbine removal process after soil erosion BMPs are in place. Other permits (such as those that may be needed for impacts to wetlands or other sensitive environmental features) will also be obtained, as applicable.

2.2.1 Erosion and Sedimentation Control Measures

General erosion and sedimentation control measures will be integrated, as appropriate, in the SWPPP. Example measures include, but are not limited to, the following BMPs:

- Silt fence or straw wattle installation on the downslope and adjacent to sensitive water features
- Slopes greater than four to one should be protected with erosion control blankets or mulch blankets
- Stabilization of disturbed soils with seed application
- Stripped topsoil shall be placed in soil stockpiles and placed in a manner to not interfere with natural drainage to waterways, which could promote soil erosion. Topsoil stockpiles should be surrounded by either silt fence or straw wattles. If the stockpile is to remain for an extended period of time, it should be temporarily seeded.
- Temporary construction entrances should be established consisting of 1-inch x 3-inch aggregate to reduce erosion onto roadways.
- Dust control measures
- Use of filtration bags for dewatering activities

2.2.2 Project Disconnection Measures

Before any demolition begins, the Project will first be disconnected from the electrical grid by following all energy industry safety standards and best practices to allow for the safe dismantling of the project components including turbines, electrical collection lines, and substation components. The general process for disconnecting the Project from the grid is as follows:

- Power down and lock all turbines to prevent the flow of electricity from the Project to the substation
- Place generator step-up transformer (GSU) breaker in open position (if this is an option on GSU)
- Place the GSU disconnect switch in the open position to electrically disconnect/isolate the Project from the gen-tie
- Place collection feeder breakers in open position
- Place the collection feeder disconnect switches in the open position
- In coordination with the Transmission Operator, de-energize the gen-tie line between the DCW plant/substation and the Point of Interconnection (POI) substation, which will effectively de-energize the main step-up transformer (GSU)
- Remove the POI connection wires from the substation and gen-tie line, disconnecting the project substation from the grid
- Safely begin the dismantling of substation, turbines, ADLS radar sites, operations and maintenance (O&M) building, and electrical components of the Project

2.3 Removal of Facilities

Decommissioning will include the dismantling and removal of the wind towers, wind turbine generators, foundations, meteorological (MET) towers, access roads, underground collection lines, pad-mounted transformers, collection substation, and the O&M facility to a depth of 4 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. MET 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. Unsalvageable materials will be disposed of at authorized sites in accordance with applicable regulations.

Following the dismantling and removal of project infrastructure, DCW will return the Project Area to a condition that is as close to preconstruction conditions as feasible in accordance with the lease agreement between the landowners and DCW.

2.3.1 Turbines and Meteorological 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 4 feet. DCW 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 project MET tower will be removed in a similar fashion to the turbines. A small crane will be used to dismantle the structure from the top down, and the pieces of the structure will be loaded onto trucks to be removed from the site.

2.3.2 Access Roads

DCW will work with landowners regarding whether the landowner prefers to keep the access roads in place. In the event landowners do not want to keep the access roads, or portions thereof, the access roads will be removed, and the land will be restored. Any geotextile fabric that is encountered during demolition will be removed and taken to an approved landfill.

2.3.3 Underground Collection and Pad-Mounted Transformers

Where feasible, all underground collection lines buried less than 4 feet below the surface will be removed unless requested by the landowner, or other entity, to remain in place. DCW will work with landowners or applicable entities to determine whether underground collection lines may be left in place when located less than 4 feet below the surface to minimize impacts to agricultural activities and the environment. If the underground collection lines are to be removed, a trench will be opened, and the cables will be pulled out. Cables will be cut into manageable sections and removed from the site.

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

2.3.4 Collection Substation and O&M

All aboveground 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 facility 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 and O&M facility, including underground conduits and grounding wires, will also be removed to a depth of 4 feet, unless it has been negotiated with the landowner that this infrastructure may be abandoned in place.

2.4 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 of where disposal is permitted and where there is capacity for the disposal. Generally, turbines, turbine blades, transformers, electrical components, and towers are refurbished and resold or are recycled for scrap. 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.

2.5 Hazardous Materials

During decommissioning, required hazardous materials will be temporarily stored and utilized. These hazardous materials may consist of fuel, lubricating oil, hydraulic oil, propylene glycol, and other materials required for the decommissioning. Decommissioning will require the removal of pad-mounted and grounding transformers that contain large quantities of cooling fluids, likely consisting of mineral oil.

Due to the presence of hazardous materials during decommissioning, there is the potential for spills and/or leaks. The primary concerns associated with these spills and/or leaks are potential impacts to surface water and groundwater resources and/or soil contamination. A Spill Prevention, Control, and Countermeasure Plan (SPCC) will be created for decommissioning. The SPCC Plan will detail the appropriate storage, cleanup, and disposal of hazardous wastes to ensure potential impacts are avoided.

Any hazardous material wastes generated will be handled and disposed of in accordance with Minnesota Rule Chapter 7045, local rules and regulations, and the site-specific SPCC. Any monitoring, transportation, or handling of materials will be conducted by trained and qualified personnel utilizing established procedures and proper equipment.

2.6 Restoration

Following the dismantling and removal of project infrastructure, DCW will return the Project Area to a condition that is as close to preconstruction conditions as feasible. DCW will implement the following:

- All areas where infrastructure has been removed will be graded and reseeded, as appropriate, in coordination with landowners or other entities.
    - After removal of all foundation materials, the areas will be filled with clean, compatible subgrade material compacted to a density similar to the surrounding subgrade material.
    - DCW 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.

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 will be reestablished where feasible. 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 DECOMMISSIONING SECURITY

DCW will furnish a financial surety, bond, or other form of surety equal to the total estimated cost to Dodge and Steele Counties. An agreement describing 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 Dodge and Steele Counties prior to project operation.

Attachment A

Dodge County Wind Project Cost Estimate

DODGE COUNTY WIND PROJECT — THIRD-PARTY DECOMMISSIONING COST ESTIMATE

To: Mark Lennox, Dodge County Wind, LLC

From: Timothy Jones, Civil Engineer, Atwell, LLC

Date: July 27, 2021

RE: DODGE COUNTY WIND PROJECT – THIRD-PARTY DECOMMISSIONING COST ESTIMATE

Cost Estimate

Estimated Cost of Decommissioning

Dodge County Wind, LLC (DCW) retained Atwell, LLC (Atwell) to develop an independent, third-party cost estimate for the decommissioning of the Dodge County Wind Project (Project). The decommissioning cost estimate provided herein includes an estimate of the cost to return the site to a condition compatible with the surrounding land and similar to the conditions that existed before development of the Project. This estimate is based upon the described Project and decommissioning methods summarized in the "Decommissioning Plan: Dodge County Wind Energy Facility" dated July 27, 2021 and associated with Minnesota Public Utility Commission Docket Number IP-6981/WS-20-866.

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 and thus, accordingly, the cost estimate provided herein is a "no resale" estimate.

At the time of decommissioning, 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.

Table 1. Decommissioning Cost (In Current U.S. Dollars)

Item		Quantity	Unit	Unit Price	Cost Estimate
1.0 Field Activities					
	1.1 Field Equipment, facilities & personnel	1	LS	$900,000	$900,000
	1.2 Site Facilities - Rental	1	LS	$10,000	$10,000
	1.3 Field Management	20	Weeks	$18,500	$370,000
2.0 Substation					
	2.1 Substation & Switchyard Removal	1	LS	$500,000	$500,000
3.0 Tower and Nacelle Units					
	3.1 Construct/remove temporary crane pads	79	EA	$9,000	$711,000
	3.2 Turbine Removal	79	EA	$35,000	$2,765,000
	3.3 Turbine Foundation Removal	79	EA	$20,000	$1,580,000
	3.4 Turbine Sizing & Loadout (Salvage Value)	79	EA	($22,000)	($1,738,000)
4.0 Pad Mounted Transformer & Collection Line Removal					
	4.1 Pad Mount Transformers	79	EA	$1,700	$134,300
	4.2 Underground collection line	72	Miles	$12,000	$864,000
5.0 Tower Access and Site Roads					
	5.1 Restoration of Gravel Road	81,351	CY	$13	$1,057,564
	5.2 Culvert Removals	27	EA	$1,000	$27,000
6.0 Site Restoration					
	6.1 Site Restoration, Seeding, and Revegetation	1	LS	$800,000	$800,000
7.0 Site Restoration					
	7.1 Meteorological Tower Removal	1	EA	$2,000	$2,000
	7.2 ADLS Radar Removal	2	EA	$2,000	$4,000
8.0 Administrative & Project Management					
	8.1 Office, Project Management	5	Percent	$399,300	$399,300
	8.2 Contrator OH & Fee (13%)	13	Percent	$1,038,300	$1,038,300
	TOTAL:				**$9,424,500**

Cost Assumptions

This estimate is based upon the described Project and decommissioning methods summarized in the "Decommissioning Plan: Dodge County Wind Energy Facility" dated July 27, 2021. The tasks associated with decommissioning 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. Typical average markups that are industry standard were applied for contingency, overhead, and fee. Atwell used the following estimating methods and assumptions 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 rates (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 and 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 costs 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. The 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 an additional 6 inches of topsoil will be applied. 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.

- Culverts required are estimated at a rate of 1/3 of total turbines.
- The costs for temporary facilities have been included in the restoration cost. These include one office trailer, two storage units, portable toilets, first aid supplies, and utilities.
- Field management during construction activities is included in the estimate. These costs include one superintendent, one health and safety representative, and two field engineers. These positions are critical to the safe and successful execution of work.
- Contractor Home Office, Project Management, Overhead, and Fee can vary widely. 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.