Appendix M
Decommissioning Plan

Community Wind South Repower Project
Nobles County, Minnesota

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Westwood

DECOMMISSIONING PLAN

Community Wind South Farm

Lincoln County, Minnesota

September 2021

Prepared For:

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1.0 INTRODUCTION / PROJECT DESCRIPTION

The Community Wind South Project (the "Facility") is an existing 30.75 megawatt ("MW") wind power generation project owned and operated by Zephyr Wind, LLC, a subsidiary of Greenbacker Renewable Energy Company LLC ("Zephyr Wind" or "Owner") in Larkin and Summit Lake Townships, Nobles County, Minnesota. The Facility is located on approximately 3,080 acres of privately owned and leased land. The Facility includes the construction of permanent facilities of 15 repowered Vestas V110 2.2 MW turbines with a 105.05 meter hub height, 4.0 miles of access roads, met tower, a substation, under-ground transmission and approximately 12 miles of underground collection lines. The turbine towers and foundations will be retained from the original REpower MM92 2.05 MW turbines. The Facility has been in commercial operations since 2012. The commercial operation date for the repowered Facility is anticipated to be in 2022.

2.0 DECOMMISSIONING OBJECTIVE

The purpose of this "Decommissioning Plan" (and its succeeding and revised Decommissioning Plans, (the "Plans") is to describe the means and methods that can be used to remove project facilities, and reclaim, restore, and return the land altered during the construction and operation of the wind project to its predevelopment condition to the extent feasible. The Plans identify components which may be removed, and the areas that may be restored once the Facility is considered a discontinued use, after one year without energy production, or when the Facility has surpassed the useful lifespan of the turbines and facilities. This includes the disrepair of individual turbines which may pose a health or safety issues. The useful life of commercial size turbines is generally considered to be 30 years.

Zephyr Wind acknowledges that decommissioning is accomplished at its expense.

3.0 USE OF GENERATION OUTPUT

The Facility has an existing 20-year Power Purchase Agreement ("PPA") with Northern States Power (NSP) which started in 2012, and a Generator Interconnection Agreement ("GIA") with Northern States Power. (NSP is a subsidiary of Xcel Energy). The PPA expires in 2032.

4.0 PROPOSED FUTURE LAND USE

Prior to the development of the Facility, the land use in the areas affected by development was primarily agricultural land planted with row crops. After affected areas are decommissioned, these areas will be returned to their predevelopment topography and topsoil conditions.

5.0 NOTIFICATION

After the Facility has reached the end of its useful life, and prior to the start of decommissioning activities, the Zephyr Wind will notify the Commission, Nobles County, landowners, affected parties, and other local units of government in writing, of the intended decommissioning activities and schedule.

6.0 DECOMMISSIONING TASKS AND TIMING

Decommissioning includes several phases and activities such as:

- Removal of above ground components (turbines, transformers, met towers, and substation);
- Removal of turbine, transformer, met tower, substation foundations to a depth of forty-eight (48) inches;

- Removal of underground collection system and fiber optic cables to a depth of forty-eight (48) inches;
- Removal of access roads (unless the landowners request the roads to remain) and crane paths;
- Restoration of access roads, including decompaction;
- Reclamation, re-grading, and restoration of disturbed areas including topsoil reapplication and decompaction of soils;
- Application of necessary sediment and erosion controls during and following decommissioning; and
- Repair of public roads and culverts to pre-construction condition

During decommissioning, participating landowners will be consulted to determine the scope and extent of reclamation work to be completed. Some Facility infrastructure such as the access roads may be left in place at the landowners' requests. Underground utility lines deeper than forty-eight (48) inches below ground may be left in place to minimize land disturbance and associated impacts to future agricultural land use. Any agreement for removal of project infrastructure to a depth of less than forty-eight (48) inches, or no removal, will be recorded with the county and will show the locations of all such foundations.

Decommissioning will include the removal and transportation of all turbine components and debris from the Facility site. Decommissioning will also include the removal of cabling, electrical components, access roads, and any other associated facilities in the manner described in the Plan, unless otherwise agreed upon by Applicant and the applicable landowner. All dismantling, removal, recycling, and disposal of materials generated during decommissioning will comply with rules, regulations, and prevailing laws at the time decommissioning is initiated, and will use approved local or regional disposal or recycling sites as available. Recyclable materials will be recycled to the extent practicable. Non-recyclable materials will be disposed of in accordance with state and federal law.

There are no known hazardous materials contemplated for incorporation in the Facility, except for the oil in the gearboxes, and hydraulic fluids and grease in some mechanical components. It is anticipated that a dry transformer system will be used instead of conventional oil filled pad mounted transformers. During decommissioning, current regulations for identifying, handling, and disposing of hazardous materials will be followed.

6.1 DECOMMISSIONING

Public Road Modifications and Removal

Prior to the commencement of decommissioning activities, Zephyr Wind will inform state and local road authorities of the transportation plan and reach a road use agreement with road authorities. Temporary turning radius modifications are not expected to be needed for decommissioning as turbines that have reached the end of useful life have scrap value, but little resale value. Transportation of the turbine components off site will be accomplished using conventional over the road trucks. Following removal of the decommissioned turbine components, any turning radius modifications required for decommissioning will be removed and any disturbed areas will be restored to preconstruction condition using thorough decompaction techniques and re-application of topsoil. After all hauling activities are complete Zephyr Wind will restore public roads to pre-decommissioning condition, or reimburse road authorities for wear and tear on roads consistent with its road agreement.

Crane Path and Crane Pad Preparation and Removal

This cost estimate is based on the felling of all turbines, which eliminates the need for large industrial cranes, and the associated crane paths and crane pads.

Wind Turbine Removal

There are two different approaches in use to remove the wind turbines and the towers supporting them: 1) disassembling the individual components using large industrial cranes; and 2) felling.

Disassembling the turbine components is essentially the reverse of the construction of the turbines. Each individual component, blades, hub, nacelle, and tower sections is supported by a large crawler crane, capable of lifting hundreds of tons, while the bolts holding the pieces together are removed. Then the components are lowered to the ground to be processed (cut into smaller pieces) for transportation off of the site.

To estimate costs for the decommissioning, the felling method will be used, as described in more detail below. The felling method was chosen because of the advantages described below, including less crop loss and fewer impacts to land within the project area. If the turbine materials are sold as scrap and recycled, there is no advantage to disassembling the turbines. Please note that at the time of decommissioning, the successful bidder may choose either method, use a hybrid of the methods, or develop an alternative method.

This cost estimate assumes the technique of "felling" will be used to bring the turbine components to the ground for disassembly and processing for recycling. The felling technique has been used on numerous wind turbine decommissioning projects and has several advantages over disassembly using large crawler cranes. Felling of turbines eliminates the use of crane paths and crane pads that are otherwise necessary to disassemble the components of a turbine. In addition to the costs associated with preparing crane paths and pads, this method will reduce the total disturbed area that needs to be reclaimed and restored during the decommissioning process, as well as the amount of crop loss. The elimination of the use of large cranes also reduces the number of trucks delivering and removing equipment, and reduces the time required for decommissioning. Felling consists of disconnecting electrical connections and draining oil, hydraulic fluid, and any other liquids from the turbine. A long cable is attached to the nacelle, and to a piece of heavy equipment, such as a bulldozer, positioned on the access road. Wedge shaped areas are then cut out of the tower steel using cutting torches to create a hinge that will direct the turbine to fall on, or next to, the access road when pulled by the dozer.

Each turbine consists of three (3) steel tower segments, an additional 23 foot adapter at the top, nacelle, rotor and hub assembly, and three blades. If it is not cost effective to resell the turbines, the turbines will be removed using the felling method, the components will be processed on-site into sizes which conform to scrap metal recycling requirements. The materials can then be sold for scrap material value and recycled. The tower sections, in particular, represent a substantial amount of high quality steel materials. The processed scrap materials will be loaded on tractor-trailers and removed from the site to a prearranged receiving location, or directly to a recycling or disposal facility. The technology for recycling turbine blades is changing rapidly. Global Fiberglass Solutions (GFS), opened a blade recycling facility in Newton, Iowa in 2020. Other companies and manufactures, such as Siemens Gamesa and GE are developing recycling processes and materials that can be recycled more easily. It is expected that by the end of life of the Project the technology will be sufficiently developed that the blades will be recycled. At this time it is not possible to accurately determine the costs for recycling, so for this estimate we have assumed that the cost of disposing of the blades in a landfill represents an upper limit to the recycling costs.

If the components are resold, the individual components will be loaded onto turbine transport vehicles similar to the vehicles originally used to deliver the turbine parts.

Turbine Foundation Removal and Restoration

Turbine foundations are fabricated of concrete and rebar. Topsoil and aggregate from the area surrounding the foundations will be stripped, segregated, and stockpiled near the work site for reapplication during restoration. The turbine foundation will be exposed using backhoes, bull-dozers, or other earth moving equipment. The pedestal (upper part of the turbine foundation) will be removed to a depth of forty-eight (48) inches below the final ground surface. Demolition of mass concrete is generally accomplished using hydraulic hammers mounted on a backhoe or similar equipment (hoe ram), or by the use of expansive chemicals placed in holes drilled in the concrete. The chemicals are not absorbed by the concrete and do not affect the recyclability of the concrete, nor do they require special handling or disposal. Concrete and rebar will be broken into manageable-sized pieces and loaded into dump trucks to be hauled off site for recycling as aggregate or disposal.

Following the removal of turbines and foundation pedestals, the resulting voids will be backfilled with clean native subsoils and compacted to a density similar to surrounding subsoils (typically approximately 90% of the fill material's standard Proctor density). Topsoil will then be reapplied to the site and graded to blend with the surrounding grade and preserve pre-existing drainage patterns. The soil and topsoil will be decompacted and restored to a tillable agriculture ready condition similar to the pre-construction condition, or re-seeded to promote re-vegetation. The site will be temporarily or permanently re-vegetated, depending upon location, time of year, and anticipated post-decommissioning land use. Any drain tile lines damaged during removal and restoration of turbine foundation areas will be repaired to ensure drainage is maintained.

Access Road/Met Tower Road Removal and Restoration

Access roads will be removed or left in place based on the individual landowner's request. Re-moval of access roads will entail removal of the road base aggregate and any other materials used for constructing the roads. During removal, the topsoil adjacent to both sides of the roads will be stripped and stockpiled in a windrow paralleling the road. The road base materials will then be removed by bulldozers and wheeled loaders, or backhoes, and hauled off site in dump trucks to be recycled or disposed at an off-site facility. Several options are available for reusing, recycling, or disposing of the road aggregates. On-site processing (passing the material through sieves, and then blending the different fractions to meet road construction specifications) would allow much of the aggregate to be re-used to improve public roads, if there is a need at the time of decom-missioning. The decommissioning contractor will also likely seek disposal/reuse opportunities for clean fill from nearby landowners to reduce hauling and disposal costs. The road aggregate may also be disposed of at a nearby landfill and used as "daily cover" at no cost. If geotextile fabric was utilized under the aggregate base, it will be removed and disposed of in a landfill off-site. The access road removal will proceed from the turbine area to the public roads to limit tracking and provide a stable access during removal. Following removal, topsoil will be reapplied and graded to blend with surrounding contours to promote pre-construction drainage patterns. Topsoil to cover the access roads, turbine rings, and met tower rings will be acquired from areas adjacent to

access roads where it was spread during construction.[1] The soil and topsoil will then be decompacted and restored to pre-construction tillable condition or re-vegetated.

Underground Electrical Collection Lines

The electrical cables and fiber optic cables are typically installed at a minimum depth of 48 inches (by plan), and contain no material known to be harmful to the environment. The only locations where the cables are less than 48 inches deep is where cables enter pad mounted transformers and junction boxes. Accordingly, the majority of underground cables will be left in place, non-functional once disconnected. Any cable at a depth of less than forty-eight (48) inches will be removed. Following cable, junction box, and route marker removals, disturbed areas will be restored by the restoration methods described above for access roads, including the reapplication of topsoil to match the surrounding grade and preserve or promote pre-existing drainage patterns.

Substation

All steel framing, conductors, switch gear, capacitors, transformers, control building, security fence, and other components of the step-up facility will be disassembled and recycled or reused off-site. Foundations and underground components will be removed to a depth of forty-eight (48) inches. The rock base will be removed using bulldozers and wheeled loaders or backhoes. The material will be hauled from the site using dump trucks to be recycled or disposed at an off-site facility as described in the access removal section above. Topsoil will be reapplied to blend with the surrounding grade to promote pre-construction drainage patterns. Soil and topsoil will be decompacted and the site will be restored to the pre-construction tillable condition or re-vegetated. The existing Project substation/switchyard is located north of 190th Street and west of Jones Avenue, near T-9. The connection to the point of interconnection at the existing Nobles Substation is via two separate feeders approximately 3.8 miles east of the Project substation. The feeder lines are located underground at a sufficient depth where they can be abandoned in place as is typical of underground utilities.

Operations and Maintenance Facility

The Project doesn't include an O&M Facility on site.

6.2 RECLAMATION

In addition to the reclamation activities described above for each decommissioning activity, all unexcavated areas compacted by equipment and activity during the decommissioning will be decompacted to a depth of 18 inches or to a depth as needed to ensure proper density of topsoil consistent and compatible with the surrounding area and associated land use. All materials and debris associated with the Facility decommissioning will be removed and properly recycled or disposed of at off-site facilities.

As necessary, the topsoil will be stripped and isolated prior to removal of structures and facilities for reapplication to promote future land use activities. The topsoil will be reapplied following backfill, as necessary, and graded to blend with adjacent contours to maintain pre-construction drainage patterns. The topsoil reapplied will be free from rocks larger than four inches and will not contain debris from decommissioning. Decompaction of the soil and topsoil will be done to a

[1] During construction, a nominal depth of topsoil is excavated through the plant root zone to construct the access roads to the existing grade. The excavated topsoil is spread on the areas adjacent to the access road maintaining pre-construction drainage patterns and ensuring farming operations are not inhibited.

minimum depth of 18 inches. If the area is not going to be used for crops, the topsoil will then be re-vegetated using seed mixes approved by the local Farm Service Agency, Soil and Water Conservation District, or Natural Resource Conservation Service. Temporary erosion protection such as mulch, hydromulch, or erosion control blanket will be applied in accordance with the requirements of the project Storm Water Pollution Prevention Plan (SWPPP).

7.0 BEST MANAGEMENT PRACTICES (BMPs)

During decommissioning, erosion and sediment control BMPs will be implemented to minimize potential for sedimentation of surface waters and waters of the state. Because decommissioning will entail disturbance to more than one acre of soil, Zephyr Wind will prepare a Storm Water Pollution Prevention Plan (SWPPP) and obtain a National Pollutant Discharge Elimination System (NPDES) permit prior to initiating soil disturbing activities. Potential BMPs described below are examples which will be subject to refinement in the SWPPP prepared prior to decommissioning. The decommissioning team will review the permitting requirements at the time of decommissioning, and obtain any other necessary permits, which may include a U.S. Army Corps of Engineers Section 404 Permit to Discharge Dredged or Fill Material. Because virtually all of the project area is currently used to grow crops, exposed soil is a common condition and only minor erosion and sediment control is expected.

7.1 EROSION CONTROL

Erosion control measures are described generally here but will be refined based on the standard of practice current at the time the SWPPP is developed for decommissioning. All disturbed areas without permanent impermeable or gravel surfaces, or planned for use as crop land, will be vegetated for final stabilization. All slopes steeper than 4:1 should be protected with erosion control blankets. Restoration should include seed application prior to application of the blanket. All slopes 4:1 or flatter should be restored with seed and mulch, which will be disc anchored.

Project Phasing/Design BMP: Time periods during which disturbed soils are exposed should be minimized the degree possible. Stabilization of soils will generally be accomplished immediately following decommissioning of the access roads, turbine sites, electrical and fiber optic cables, and substation. Where this is not possible, temporarily exposed soils will be temporarily stabilized with vegetation in accordance with the SWPPP for decommissioning.

Erosion Control Blankets and Seed BMP: Erosion control blanket (double sided netting with wood fiber or weed-free straw fiber blanket) will be used as temporary stabilization for areas of slopes steeper than 4:1 and for areas of concentrated flow, such as ditches, swales, and similar areas around culverts. Seed will be applied in these areas with the blanket for temporary and/or permanent vegetative growth as necessary. The SWPPP developed for decommissioning will provide detailed specifications for erosion control blankets to be used under various slope and drainage conditions.

Ditch/Channel Protection: Where new channels are formed, as in the case of culverts removed from access roads and the removal of low water crossings, the resulting channel will be protected with erosion control blankets as described in the section above.

Surface Roughening: Surface roughening or slope tracking is the act of running a dozer or other heavy tracked equipment perpendicular to the grade of disturbed slopes with a grade of 3H:1V and steeper with a continuous length of 75 feet or greater. The tracks will provide a rough surface to decrease erosion potential during an interim period until a smooth grade, seed and erosion control blanket can be applied.

Temporary Mulch Cover and Seed BMP: Temporary mulch cover (wood fiber to resist loss from grazing by wildlife or domestic animals) will be applied at a rate of two tons per acre to provide temporary erosion protection of exposed soils areas with slopes flatter than or equal to 3:1. Seed will be applied with the mulch for temporary and/or permanent vegetative growth as called for in the SWPPP. Mulch will be used for all soil types where slopes are flatter than 3:1 and no significant concentrated flows are present. The mulch will be disc-anchored to the soil to keep it from blowing away. The mulch prohibits the impact of the rain drop from dislodging soil and subsequently carrying the soil away during sheet drainage. In sandy soils tackifier may be used to assist the disc anchoring if the mulch cannot be secured to the sandy soils.

Soil Stockpiles: Topsoil that is stripped from the construction site and base materials will be stockpiled on-site. Stockpile areas will be located in areas that will not interfere with the decommissioning activities, and be located away from pavement, site drainage routes, or other areas of concentrated flow. Stockpiles will be located away from wetlands and surface waters. Perimeter controls, such as silt fence, will be installed around all stockpiles if stockpiles are not placed within existing silt fences or other sediment control, where the potential exists for material to be eroded and transported to sensitive nature resources. Soils that are stockpiled for longer durations will be temporarily seeded and mulched, or stabilized with a bonded fiber polymer emulsion.

Permanent seed and temporary mulch and/or erosion control blanket BMP: In areas at final grade that will not be used for agriculture, permanent seed will be applied to promote vegetative cover for permanent erosion control. Temporary mulch and/or erosion control blanket will be applied as appropriate in areas to provide temporary erosion protection until the permanent seed is established.

7.2 SEDIMENT CONTROL

Removal of Ditch Crossing BMP: Temporary ditch crossings may be needed to accommodate the movements of cranes or other heavy equipment. Perimeter controls such as silt fence will be used at crossing locations to minimize runoff from exposed soils. Crossings will be done during dry conditions, if possible. If a stream is wet at the time of the crossing, alternative BMPs will be applied. These could include a temporary dam and bypass pump to install the crossing in dry conditions. Timber construction mats will be used as needed to prevent compaction and rutting at crossing locations. All temporary fills and construction mats will be removed immediately after the crossing is successfully completed and the temporarily disturbed area restored using the appropriate BMPs as described above.

Dewatering: A temporary sump and rock base will be used if a temporary pump is used to dewater an area of accumulated water. If a rock base cannot be used, the pump intake will be elevated to draw water from the top of the water column to avoid the intake and discharge of turbid water. Energy dissipation riprap will be applied to the discharge area of the pump hose. The water will be discharged to a large flat vegetated area for filtration/infiltration prior to draining into receiving waters of conveyances/ditches. If discharge water is unavoidably turbid, dewatering bags, temporary traps, rock weepers, or other adequate BMP will be used to control sediment discharge.

Silt Fence BMP or Fiber Logs: Silt fences or fiber logs will be used as perimeter controls downgradient of exposed soils during construction to capture suspended sediment particles on-site, to extent possible. The standard silt fence or fiber logs will also be used in smaller watershed areas where the contributing areas are typically less than 1/4 acre of drainage per 100 feet of standard silt fence or the fiber logs. Standard silt fence or fiber logs will also be used for stockpiles 8 feet

high or higher which have slopes of 3:1 or steeper. Standard silt fence or fiber logs should not be used in areas of highly erodible soils which are found within streams, slopes, or banks of creeks and streams within the Facility's site.

Rock Entrance/Exit Tracking Control BMP: Rock construction entrances will be installed where access to a construction area is needed from adjacent paved surfaces.

Street Scraping/Sweeping BMP: Street scraping and sweeping will be used to retrieve sediment tracked or washed onto paved surfaces at the end of each working day, or as needed.

7.3 CONTROLLING STORMWATER FLOWING ONTO AND THROUGH THE PROJECT

Given the low gradient of the slopes in the project area, controlling stormwater flow that enters the project area will likely require minimal effort during decommissioning activities. Only newly disturbed areas may require new, temporary stormwater control.

Diversion Berms/Swales/Ditches: It may be necessary to direct diverted flow toward temporary settling basins via berms, swales, or ditches. If diversion controls are deemed necessary for decommissioning activities, these must be stabilized by temporary mulch and seeding, erosion control blankets, or by installing riprap to protect the channel from erosive forces.

Rock Check Dams: It may be necessary to install temporary check dams within swales or ditches that convey storm water from areas disturbed by decommissioning activities. Rock check dams are effective for velocity control, sediment control, and to augment temporary stabilization of channels. Filter fabric can be utilized to help filter the flow, minimize the scour of the soil under the rock, and facilitate removal of the check dams once permanent stabilization is achieved. The height of check dams should be at least two feet. Spacing depends upon slope. Downgradient rock checks should have the top elevation at the same elevation as the bottom of the previous (upgradient) rock check.

Hay Bale Check Dams: Hay bale check dams may be used for velocity control within swales of the project to slow the water runoff within the drainage channels/swales. The bales should be approximately three feet in length and anchored into the soil. The midpoint elevation of the top of the bale (i.e. ponding height) must be lower than the end points of the bale where the bale meets grade, to prohibit water from flowing around the bales thus causing erosion and scour. If the bales cannot be applied properly in the field, the use of rock checks as a replacement is recommended.

Temporary Sedimentation Basins: Sedimentation basins serve to remove sediment from runoff from disturbed areas of the site. The basins allow runoff to be detained long enough to allow the majority of the sediment to settle out prior to discharge. The location and dimensions of temporary sedimentation basins, if any are necessary, will be verified in accordance with Minnesota Department of Natural resources (MNDNR) requirements at the time of decommissioning.

7.4 PERMITTING

All decommissioning and restoration activities will comply with federal and state permit requirements. Decommissioning activities that will disturb more than one acre of soil may trigger the NPDES Construction General permitting process and Minnesota general permit or Notice of Intent. The permits, if required, will be applied for and received prior to decommissioning construction activities commencing. A Storm Water Pollution Prevention Plan will be developed prior to filing a Notice of Intent. If permanent crossings are to be removed and no discharge of dredged or fill material will take place, a Section 404 permit is not anticipated for the decommissioning of

the Facility. No air permits are currently required for construction activities typical for decommissioning. Minnesota Pollution Control Agency (MPCA) air quality rules will be reviewed at the time the work is scheduled to determine if an air quality permit will be required. Further, no operating air quality permits are needed for ongoing operation of the wind farm facility. Should decommissioning activities cause temporary or permanent impacts to wetlands, a Minnesota Department of Natural Resources (MNDNR) Wetlands Permit will be obtained prior to any activities commencing, if required. Should decommissioning activities cause temporary or permanent impacts to vernal pools, an Army Corps of Engineers General Permit for the State of Minnesota will be obtained prior to any activities commencing. Should any interim permits become needed, they will be closed out with documentation of compliance at decommissioning. A Spill Prevention, Control and Countermeasures (SPCC) Plan for decommissioning, separate from the operating SPCC will likely be required.

8.0 TIMELINE

Decommissioning of the wind farm will be initiated after (1) year without energy production unless other mitigating circumstances prevail. See Section 8.1 below for the required schedule for decommissioning. The following sections outline a timetable for the decommissioning plan; steps towards compliance with applicable air and water quality laws and regulations; and steps for compliance with health and safety standards.

8.1 DECOMMISSIONING SCHEDULE

It is anticipated that the decommissioning activities for the project can be completed in a 90 day period. The estimated costs for decommissioning are tied to assumptions about the amount of equipment mobilized, the crew sizes, weather and climate conditions, and the productivity of the equipment and crews. Few utility-scale wind farms have been decommissioned to date, and most that have been decommissioned have been repowered, so there are no historical activity durations available for some of the activities that can be applied directly.

8.2 WATER REGULATORY COMPLIANCE

Water Quality: NPDES permitting will include the following steps for compliance.

1. Complete a SWPPP consistent with the requirements of the Minnesota NPDES General Construction Permit applicable at the time of decommissioning.
2. Submit the NPDES Notice of Intent at least 30 days prior to starting construction activities associated with decommissioning.
3. Once notification of permit coverage is received, decommissioning will commence.
4. During decommissioning, compliance with the NPDES permit (applicable at the time of decommissioning) will be adhered to including inspections, documentation, maintenance of BMPs, record keeping, amendments to the Plans and implementation of the SWPPP.
5. Within 30 days of completing decommissioning and restoration, a Notice of Termination (NOT) will be submitted to the Minnesota Pollution Control Agency to terminate coverage of the NPDES permit.

Water Quality: Section 404 Discharge of dredged and fill material, if required, will include the following steps for compliance.

1. Notification to the Corps of Engineers if needed, of expected activities such as temporary stream/water body crossings.
2. Verification of necessary permits (if any).

3. Apply for any necessary Section 404 permits prior to commencing work within waterways/ wetlands.
4. As applicable, develop Plans to comply with necessary permit regulations.
5. Once receipt of applicable permits, decommissioning work will commence adhering to rules, timelines and requirements stated in applicable permits.

8.3 HEALTH AND SAFETY STANDARDS

Work will be conducted in strict accordance with Zephyr Wind's health and safety plan. The construction contractor hired to perform the decommissioning will also be required to prepare a site-specific health and safety plan. All site workers, including subcontractors, will be required to read, understand, and abide by the Plans. A site safety officer will be designated by the construction contractor to ensure compliance. This official will have stop-work authority over all activities on the site should unsafe conditions or lapses in the safety plan be observed.

9.0 PLAN UPDATES

The Decommissioning Plan will be updated and re-filed with the Minnesota Public Utility Commission at five-year intervals starting in 2023 based on Table 3 in the EERA Recommendations on Review of Solar and Wind Decommissioning Plans, after the commercial operations date (COD) of the repower project. The revised plans will reflect advancements in construction techniques, reclamation equipment, and standards. The revised plans will also update the cost estimate to reflect the changes in anticipated costs. In addition to regularly scheduled updates, the Decommissioning Plan will also be revised in the event of a change in ownership, as in the sale or purchase of assets, of the Project.

10. DECOMMISSIONING COSTS AND FINANCIAL ASSURANCE

Since there are few utility-scale wind farms that have been decommissioned to date, there are few historical costs available to base this estimate on. This cost estimate was prepared: (1) in current dollars; (2) with the salvage value of equipment or materials calculated separately. The estimate includes: (i) an analysis of the physical activities necessary to implement the approved reclamation plan, with physical construction and demolition costs based on applicable Minnesota Department of Transportation unit bid prices and RS Means material and labor cost indices; (ii) the level of effort or number of crews required to perform each of the activities; and (iii) an amount to cover contingencies above the calculated cost. The Estimate is shown on a total cost and on a per-turbine basis. The decommissioning plan and cost estimate will be revised periodically.

Cost and quantities for the Facility are based on as-built data provided by the client, and turbine component weights for some components were not available. Since this estimate is intended to cover the first five years of the repowered wind farm operation it can be assumed that there will be some resale value for the turbines, but to be conservative, no estimate of resale value was made.

Turbines that are not resold will have the materials recycled as scrap. The estimate uses a current structural scrap price of $245 per ton, in the Midwest, based on prices posted on scrapmonster.com, October 2020. The posted prices are three months old. Scrap metal prices are very volatile. Current prices are approximately 50 percent of the peak prices in 2008. Electrical transformers have significant value for aluminum or copper used in the windings and the steel used in other parts of the transformer. Newer transformers can be resold. Older transformers are recycled as scrap. There are few companies that accept used transformers for resale or recycling so finding

pricing is difficult. For this estimate we used pricing posted scrapmonster.com of $0.35 per pound for used transformers. We assumed the posted price is similar to the price offered by Dakota American Transformers/Solomon Corporation in Flandreau, South Dakota which was identified as a regional transformer recycler. In this first cycle of cost estimating it may be possible to resell all of the transformers at a much higher price than the scrap value used.

Spot prices for insulated copper wire (85% recovery) are $1.54 per pound, scrap electrical motors are $0.25 per pound, and E.C. aluminum wire are $0.83 per pound.

Discounts from the posted spot prices used in the cost estimate range from twenty-five percent (25%) for structural steel to fifty percent (50%) for aluminum wire to reflect the difficultly in realizing spot prices from local recyclers.

The method and schedule for updating the cost estimates for decommissioning and restoration of the Facility site will be similar to this cycle of revisions. An engineering evaluation of the current construction techniques and equipment used for decommissioning will be performed and the cost estimate will be revised to reflect any changes in productivity resulting from new techniques and equipment. Current unit prices from industry recognized sources, such as RS Means, will be used to compute the revised costs. The markets for scrap materials – steel, copper, aluminum, transformer oil, etc. – will be investigated, and the salvage value of materials will be recomputed. The estimated decommissioning cost is scheduled to be updated every five years, as described in Section 9.0, and will be provided to both the Minnesota PUC and the County at that time.

Table 1: Detailed Cost Estimate

Community Wind South Decommissioning Cost Estimate				
	Quantity	Unit	Unit Cost	Total Cost
Number of Turbines	15	Each		
Mobilization/Demobilization	1	Lump Sum	$52,000.00	$52,000
Permitting				
State Permits (SWPPP, SPCC)	1	Lump Sum	$5,000.00	$5,000
Subtotal Permits				$5,000
Disconnect Turbine Wiring	15	Each	$2,725.60	$40,884
Fell Turbine	15	Each	$1,678.88	$25,183
Process to Size and Load Turbine Components	2,975	Tons	$83.27	$247,721
Haul Turbine Components Offsite for Recycling	2,975	Tons	$20.28	$60,343
Haul Turbine Components For Disposal	2,144	Tons	$3.13	$6,722
Turbine Components Disposal	2,144	Tons	$74.00	$158,680
Excavate Around Turbine Foundation	15	Each	$187.00	$2,805
Remove Turbine Foundation to a Depth of 4 feet and Load	630	Cubic Yards	$195.39	$123,105
Backfill Excavation Area from Turbine Foundation Removal	15	Each	$239.94	$3,599
Haul Concrete (Turbine Foundation)	1,276	Tons	$3.13	$4,000
Disposal of Concrete from Turbine Foundation	1,279	Tons	$74.00	$94,648
Remove and Load Transformer (in nacelle for Vestas Turbines)	15	Each	$574.17	$8,613
Freight Transformer to Recycler	15	Each	$122.93	$1,844
Transformer Disposal - All material can be recycled	15	Each	$0.00	$0
Decompact Wind Turbine Generator Site	15	Each	$144.18	$2,163
Grade Wind Turbine Generator Site	15	Each	$2,030.19	$30,453
Erosion and Sediment Control at Turbine/Transformer Site	15	Each	$88.00	$1,320
Till to Farmable Condition	5.2	Acres	$236.80	$1,223
Subtotal Wind Turbine Generators				$813,306

Met Towers (Free Standing)				1
Disconnect Tower Wiring	1	Each	$681.40	$681
Dismantel, Disassemble, and Load Tower Components	1	Each	$3,665.70	$3,666
Freight Tower Components Offsite for Recycling	4.0	Tons	$20.28	$82
Excavate Around Tower Foundation	1	Each	$56.10	$56
Remove Tower Foundation to a depth of 4 feet and Load	1	Cubic Yards	$195.39	$158
Haul Concrete (Tower Foundation)	1.6	Tons	$3.13	$5
Disposal of Concrete from Met Tower	2	Cubic Yards	$74.00	$122
Remove and Load Gravel Surfacing from Met Tower Road (Incl w/ Access Roads)	30	Cubic Yards	$2.42	$72
Haul Gravel from Met Tower Site	44	Tons	$1.22	$54
Disposal of Gravel from Met Tower Site	30	Cubic Yards	$0.00	$0
Grade Met Tower Site - Includes Met Tower Road	1	Each	$338.37	$338
Erosion and Sediment Control at Met Tower Site	1	Each	$176.00	$176
Till to Farmable Condition	0.04	Acre	$236.80	$9
Subtotal Met Towers (Free Standing)				$5,418
Electrical Collection/Transmission System (Remove at Junction Boxes)				11.9
Removal of Underground Collector System Cables (34.5 kV)	17	Each	$400.00	$6,800
Haul Underground Collector System Cables (34.5 kV)	1.0	Tons	$20.28	$21
Removal of Junction Box	2	Each	$100.00	$200
Erosion and Sediment Control at Junction Box Location	3	Each	$100.00	$300
Grading and Till to Farmable Condition at Junction Box Location	3	Each	$759.22	$2,278
Subtotal Electrical Collection/Transmission System				$9,598
Access Roads				21,356
Remove and Load Gravel Surfacing from Access Roads	6,328	Cubic Yards	$2.42	$15,281
Haul Gravel Removed from Access Roads	10,251	Tons	$3.13	$32,134
Disposal of Gravel Removed from Access Roads (Use as "Daily Cover")	10,251	Tons	$0.00	$0
Remove and Load Culvert from Beneath Access Roads	10	Each	$448.00	$4,480
Haul Culvert Removed from Access Roads	5	Tons	$3.13	$16
Disposal of Culverts	5	Tons	$10.00	$51
Remove Low Water Crossing from Access Roads	1	Each	$3,400.00	$3,400
Decompact Access Road Corridor	21,356	Linear Feet	$0.19	$4,106
Grade Access Road Corridor	21,356	Linear Feet	$1.33	$28,386
Erosion and Sediment Control Along Access Roads	3,203	Linear Feet	$1.76	$5,638
Till to Farmable Condition on Removed Access Road Area	11.8	Acres	$236.80	$2,786
Subtotal Access Roads				$96,279

Substation				
Disassembly and Removal of Main Power Transformer(s)	1	Each	$2,000.00	$2,000
Freight Transformer(s) Offsite for Recycling	1	Each	$420.00	$420
Disposal of Transformer (Including Oil) - has Salvage Value	1	Each	$0.00	$0
Excavate Around Transformer Foundation(s)	1	Each	$935.00	$935
Remove Complete Transformer Foundation(s)	1	Each	$1,040.00	$1,040
Backfill Excavation Area from Transformer Foundation Removal	1	Each	$239.94	$240
Haul Concrete (Transformer, Switch Gear, etc. Foundations)	11	Tons	$3.13	$34
Disposal of Concrete from Transformer Foundation	11	Tons	$74.00	$801
Demolish Substation Site Improvements (fences, etc)	1	Lump Sum	$2,500.00	$2,500
Demolish Control Building and Foundation	1	Lump Sum	$6,000.00	$6,000
Remove Medium/High Voltage Equipment	1	Lump Sum	$1,500.00	$1,500
Remove Structural Steel Substation Frame	1	Lump Sum	$1,000.00	$1,000
Haul - Demolition Materials, Removed Equipment & Structural Steel	1	Lump Sum	$125.39	$125
Disposal of Demolition Materials, Removed Equipment and Structural Steel	1	Lump Sum	$0.00	$0
Remove and Load Gravel Surfacing from Substation Site	194	Cubic Yards	$2.42	$468
Haul Gravel Removed from Substation Site	287	Tons	$3.13	$901
Disposal of Gravel from Substation Site (Use as "Daily Cover")	287	Tons	$0.00	$0
Decompact Substation Site	0.18	Acres	$418.71	$75
Grade Substation Site	1	Each	$1,661.49	$1,661
Erosion and Sediment Control at Substation Site	1	Lump Sum	$633.60	$634
Till to Farmable Condition at Substation Site	0.18	Acres	$236.80	$43
Subtotal Substation				$20,377
Public Roads Restoration	2.0	Miles	$44,000.00	$88,000
Total Direct Costs				$1,089,979
Contingency (10%)				$108,998
Total Demolition Costs				$1,198,977
Cost Per Turbine				$79,932
County Administration Costs (2.5%)	1	Lump Sum	$29,970.00	$29,970
Crop Loss	7.5	Acres	$500.00	$3,750
Total Cost				$1,232,697
Salvage/Recycle				
Turbine Towers (Structural Steel)	2,029	Tons	$183.75	$372,793
Turbine Nacelles (Structural Steel)	946	Tons	$183.75	$173,848
Met Towers (Structural Steel)	4.0	Tons	$183.75	$739
Substation Structural Steel)	5.0	Tons	$183.75	$919
Turbine Generators	150,961	Pounds	$0.19	$28,305
Aluminum Electrical Conductor (Supported)	635	Pounds	$0.19	$119
Transformers (copper windings)	267,500	Pounds	$0.26	$70,219
Transformers (oil)	5,000	Gallons	$0.70	$3,500
Subtotal Slavage				$650,442
Total Demolition Minus Resale and Salvage Value				$582,255
Total Demolition Minus Salvage per Turbine				$38,817

11. Financial Assurance

The form of financial assurance is a financial resource mutually agreed upon by Nobles County Board of Commissioners and Zephyr Wind, and will be adjusted upward or downward to offset any increases or decreases in decommissioning costs and salvage values determined during periodic Plan updates. The financial resource will be established on dates mutually agreed to by Zephyr Wind and the Nobles County Board. The amount of the financial assurance will be based on the net decommissioning cost estimate which includes project management/administration costs, dismantling and removal costs of project infrastructure, restoration and reclamation costs of the land used by the facility, disposal cost of materials that cannot be salvaged and recycled, public road restoration costs, a contingency amount, county administration costs, and crop loss costs. From these costs the salvage values of the materials, after deducting transportation costs, will be deducted to determine the net cost. If decommissioning of the Facility or individual turbines is undertaken, Zephyr Wind will, upon satisfactory completion, provide supporting documentation to the Nobles County Board with a request for the release of the financial resources.

In the event Zephyr Wind fails to decommission the Project according to its obligations, the County can draw on the Financial Assurance to decommission the project, and Zephyr Wind grants the Nobles County Board the right to sell and transfer recycled material to salvage firms.

The total cost of the decommissioning of the Community Wind South Project is approximately $1,233,000 ($82,200 per turbine) including a ten percent (10%) contingency on the demolition costs and engineering/administration costs and crop loss. Salvage/scrap value of the turbines, transformers, and other materials is approximately $650,000, or $43,400 per turbine. Including resale and salvage values the net cost is approximately $583,000, or $38,800 per turbine.