Appendix J

Updated Decommissioning Plan

Northern States Power Company
Nobles Wind Farm Repower Project
Docket No. IP-6646/WS-09-584
February 2021



NOBLES WIND REPOWERING PROJECT

Decommissioning Plan

February 2021

Table of Contents

1.0 Introduction

2.0 Project Description

3.0 Decommissioning Process Description

4.0 Site Restoration Process Description

5.0 Estimated Cost of Decommissioning

6.0 Permitting and Notifications

7.0 Financial Surety

1.0 INTRODUCTION

Xcel Energy has prepared this Decommissioning Plan in accordance Minn. R. 7854.0500, subp. 13 and Section G.1 of the Nobles Wind Energy Site Permit (MPUC Docket Number: IP-6646/WS-09-584) to provide documentation of the activities necessary to decommission The Nobles Wind Energy Project. Xcel Energy is a regulated utility governed by the laws of the State of Minnesota and will observe all regulatory requirements with respect to decommissioning the Nobles Wind Energy Project.

The Nobles Wind Energy Project is located in Nobles County, southwestern Minnesota, five miles northwest of Worthington, Minnesota. The project was placed in service in December 2010 and GE 1.5 sle turbines were installed with a rotor size of 77 meters (252.6 feet) in diameter. Xcel Energy plans to repower all 134 turbines (Repower) which will increase energy production from the facility, improve overall reliability, and extend the service life of the turbines. The Nobles Wind Energy Project is an important part of Xcel Energy's generation portfolio.

2.0 PROJECT DESCRIPTION

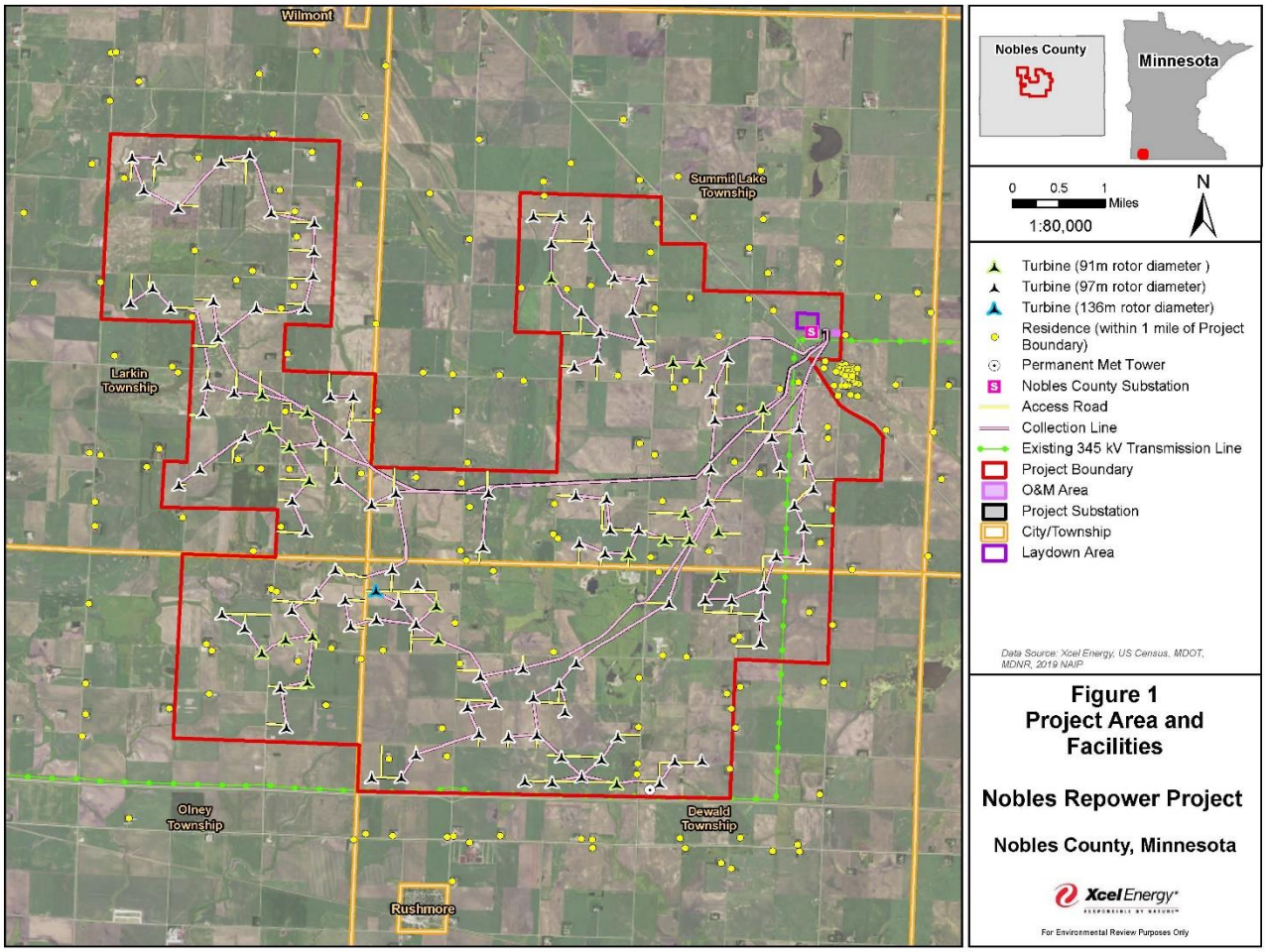
Commercial Operation Date of Re-power: December 31, 2022
Project Ownership: Xcel Energy / Northern States Power Company
Location: Nobles County, MN
Generation Capacity: 201MW
Number of Turbines: 134
Existing Turbine Type: 134 GE 1.5 MW-77m rotor diameter sle turbines
Proposed Repower Turbine Type:

- (111) GE 1.6 MW-97m rotor diameter turbines
- (22) GE 1.6 MW-91m rotor diameter turbines
- (1) Vestas V136 3.6 MW-136m rotor diameter turbine

Repower Project Boundary: Reduced from 25,535 acres to 23,910 acres
Underground Collection Cable: 42 Miles
Access Roads: 13.5 Miles

The repowering project will help improve turbine technology, maximize energy yield, and extend the service life of the turbines. The new blades will provide an increase in the rotor swept area, which, when coupled with the upgraded generators, results in a corresponding increase in the nominal production capacity of the Project from 201 MW to 216.4 MW, a 7 percent increase. Xcel Energy's General Interconnection Agreement with MISO will limit the production capacity to 201 MW. Xcel Energy plans to complete the work during the 2022 construction season and is currently targeting the second quarter of 2022 for construction start. The work is anticipated to take 6-7 months, with commercial operation by December 31, 2022.

NOBLES SITE MAP



2.1 Anticipated Life of Project

Xcel Energy estimates the service life of the Repowering Project to be approximately 25 additional years. The project will be decommissioned once it has met its full design life.

2.2 Wind Turbine Generators

The Project will repower all existing 134 General Electric 1.5MW sle turbines with 133 GE 1.6MW sle turbines and one Vestas V136 3.6MW turbine. Xcel Energy will be repowering 111 turbines with 97-meter rotors and 22 turbines with 91-meter rotors. The repower will consist of removing and replacing the existing GE 1.5MW-77m blades, hub, gearbox, and generator with a new repower package of GE 1.6MW blades, hub, gearbox, and generator. 111 turbines will receive 97m (318 ft) rotor diameter blades and 22 turbines will receive 91m (299 ft) rotor diameter blades. The different rotor sizes are required to maintain the project's compliance with the applicable noise standards. 133 of the GE 1.6MW turbines will reuse the existing 80m (262 ft) structural steel tower, remaining in the same location as the original tower.

The GE 1.5MW-77m turbine identified as T-47 will be completely removed and replaced with a new construction Vestas V136 3.6MW-136m turbine. The V136 will be constructed as close as practicable to the previous T-47 location, likely within 100 feet. A new foundation will be completed with the V136 turbine erected upon it.

All turbine components will be fully removed as part of Project decommissioning at the end of the designed life of the repowered facility.

2.3 Wind Turbine Foundations

The existing GE 1.5MW-77m reinforced concrete foundations are octagonal spread footings consisting of the typical pedestal and base configuration. The spread footing measures 50 feet in diameter with a centered 17-foot diameter pedestal to support the turbine. The height of the foundation is 7 feet with a designed pedestal reveal of 6 inches, leaving a depth underground of 6.5 feet.

Based on preliminary desktop and field assessment work that's been completed, Xcel Energy understands the existing foundations may need structural modifications to meet design requirements for repowering with the GE 1.6MW-97m turbines. It is understood that foundation modifications will not be needed for the GE 1.6MW-91m turbines.

The GE 1.6MW-97m foundations are expected to require some form of modification to increase the overall weight of either the material above the foundation or by adding to the foundation directly. These foundation modifications are intended to ensure a repowering duration of 25 years based on 2020 standards. Proposed design options include;

- Removal of the existing soils above the foundation concrete and installing a material that is heavier such as an engineered fill.

- Removal of the existing soils around the pedestal and construction of a sufficiently sized reinforced concrete collar to achieve the designed overall weight of the foundation.

The final result of either foundation modification matches the existing conditions currently on the wind farm now with a 50-foot gravel ring surrounding each turbine foundation.

The Vestas V136 3.6MW-136m turbine foundation at T-47 will be a completely new spread footing foundation. A V136 foundation is typically 65-72 feet in diameter, extending 9 feet below ground, and with an 18-foot diameter pedestal.

2.4 Access Roads

Every turbine on the Nobles Wind Farm has an access road to allow for vehicle access to facilitate inspections and maintenance of the turbines and associated equipment during operation. The access roads are 16 feet wide and consist of crushed gravel overlying compacted subgrade. The Plan accounts for the removal of approximately 13.5 miles of access roads. All public and county roads are assumed to remain in place after decommissioning of the repowered Project.

2.5 Collection System

Each turbine has its step-up transformer located outside at the base of each unit that increases the voltage at the turbine terminals to the medium voltage level (34.5 kilovolts [kV]) of the buried collector circuits that transmit the power from the turbines to the project substation. At the project substation, the power from the collector circuits is combined into feeder circuits that run underground approximately 500 feet to the adjacent Nobles County Substation where the power is stepped up to 345 kV. The Nobles County Substation is immediately adjacent to and connected to the Split Rock to Lakefield Junction 345 kV transmission line. Any underground cables (including both power and communication cabling) buried at a below-grade depth of 4 feet or less will be removed when the repowered Project is decommissioned. All cables buried deeper than 4 feet below grade will be left in place when the project is decommissioned.

2.6 Project Substation & Transmission Line

The existing project substation is located in the northeast corner of the Project Area, approximately 0.4 miles north of Reading, Minnesota along McCall Avenue. Collection lines transmit the power from the turbines to the project substation. The existing substation equipment is installed on concrete foundations and consists of a gravel footprint area of approximately 0.80 acres. All above-grade equipment, conduit, cables, and equipment foundations will be removed to a depth of 4 feet below-grade as part of the Project decommissioning.

The transmission line consists of approximately 500 feet of underground cable connecting the project substation and the adjacent Nobles County Substation where the power is delivered onto the transmission grid. The Repower Project does not require a new transmission line or any

modifications to the existing transmission line. The project decommissioning plan will remove the 500 feet of underground cable.

2.7 O&M Building

This O&M building serves as a center for the Project's O&M efforts. It provides Project access and storage and houses the SCADA system. The facility has an existing footprint of approximately 2.7 acres (1.1 hectares) and includes a parking lot and O&M building. The O&M building is approximately 5,000 square feet (465 square meters) and houses Project equipment. There will be no upgrades to the existing O&M facility. The O&M building, perimeter fencing, and gravel surfacing will be removed as part of the Project decommissioning.

2.8 Meteorological Tower

The Nobles Wind Farm currently has a single, permanent, free-standing, 80 m (262.5 feet) tall met tower that meets Federal Aviation Administration (FAA) and local requirements for lighting and marking. Xcel Energy is not currently planning to construct any new permanent met towers. The tower, guy wires, foundations, and fencing will be fully removed as part of decommissioning, to a depth of 4 feet below-grade.

2.9 Aircraft Detection Lighting System

Xcel Energy will coordinate with the FAA on the potential implementation of an Aircraft Detection Lighting System (ADLS) radar. The location of the radar unit(s) will be determined based on participating landowners, environmental conditions, an analysis of radar coverage from an ADLS technology vendor, and, ultimately, a review and approval by the FAA and Federal Communications Commission (FCC).

The ADLS unit or units depending on design typically consist of an approximately 125-175 foot tall radar tower, a power or generation skid, and control equipment. The ADLS unit(s) is anticipated to have about 1000-square foot graveled area surrounding the 25-foot by 25-foot square foundation. Underground power and communication cabling will be installed from the ADLS location to the nearest associated turbine or wind farm network location. The cable will be approximately 42 inches below grade. If other suitable lighting systems are approved by the FAA before construction, the Project plans on maintaining flexibility on which system is used. The ADLS unit and the surrounding gravel lot will be removed and restored as part of decommissioning.

3.0 DECOMMISSIONING AND RESTORATION

All decommissioning and restoration activities will adhere to the requirements of appropriate governing authorities and will be in accordance with all applicable federal, state, and local permits. Prior to commencing decommissioning activities, there will be written notification sent to landowners, the PUC, and Nobles County advising of the Project's intent to decommission. Removal and restoration obligations will be completed within 18 months after the expiration of the Site Permit, or in the event that the Project, or any specific turbine, ceases operation for a period of one year, and in general accordance with the requirements of Minnesota Rules 7854.0500, subpart 13.

The decommissioning and restoration process for the repowered Project comprises removal of all above ground structures; work with MPCA to obtain prior approval to limit the removal of below ground structures to a depth of 4 feet; restoration of topsoil, revegetation and seeding; and a two-year monitoring and remediation period.

Above ground structures include the turbines, step-up (pad-mounted) transformers, O&M building, meteorological towers, ADLS unit, overhead electrical transmission lines, interconnection switchyard equipment and the substation. Below ground structures include turbine foundations, collection system conduits/cable, foundations for meteorological towers, foundation for the O&M building, substation equipment foundations, ADLS unit foundations and cabling, and drainage structures.

It is assumed that the Project will incur costs for the removal and disposal of the turbines, foundations, and other Project facilities, as well as costs for the restoration of the Project site. Above-grade steel, aluminum, and copper equipment, however, is expected to have significant scrap value to a salvage contractor. All recyclable materials will be recycled to the extent possible, while all other non-recyclable waste materials will be disposed of in accordance with state and federal law.

The process of removing structures involves evaluating and categorizing all components and materials into categories of reconditioning and reuse, salvage, recycling, and disposal at suitable facilities. In the interest of increased efficiency and minimal transportation impacts, components and material may be stored on-site in a pre-approved location until the bulk of similar components or materials are ready for transport. The components and material will be transported to the appropriate facilities for reconditioning, salvage, recycling, or disposal.

3.1 Decommissioning Objective

The objective of decommissioning is to restore and reclaim areas disturbed by the construction and operation of the Nobles project to pre-construction topography and soil quality. Access roads and construction pads will be reclaimed to agricultural land suitable for its purpose. The Company has internal resources with the experience necessary to conduct a financial analysis of decommissioning and; therefore, did not rely upon an independent preparer for this analysis. Necessary updates to the decommissioning plan will be filed with the Commission every five years.

3.2 Decommissioning Scope

Decommissioning of the Nobles Wind Project will include:

1. Removal of all turbines and towers;
2. Removal of all pad mounted transformers;
3. Removal of all above-ground distribution facilities;
4. Removal of foundations to a depth of four feet below grade;

5. Removal of surface road material and restoration of the roads and turbine sites to previous conditions to the extent feasible, consistent with the landowner's desires.

The removed components will either be scrapped and properly disposed of or recycled. The determination will be made based on the expected market for the used components. Removal and restoration obligations shall be completed within eighteen (18) months, and in general accordance with the requirements of Minnesota Rules 7854.0500, subp. 13.

3.3 Turbine Removal

Access roads to turbines will be widened to a sufficient width to accommodate movement of appropriately sized cranes, trucks, and other machinery required for the disassembly and removal of the turbines. Control cabinets, electronic components, and internal cables will be removed. The rotor, nacelle, and tower sections will be lowered to the ground where they may be transported whole for reconditioning and reuse or disassembled/cut into more easily transportable sections for salvageable, recyclable, or disposable components.

Once the turbine components and materials have been transported off-site, each turbine pad area will be thoroughly cleaned to ensure all potential debris has been removed prior to beginning restoration activities.

3.4 Turbine Foundation Removal

Topsoil will be stripped from the area surrounding the foundation and stockpiled for restoration once foundation removal activities are complete. Turbine foundations will be excavated sufficiently to allow for the removal of all foundation materials; anchor bolts, reinforcing steel, concrete, conduit, and cables, to depth of 4 feet below-grade. The void will then be backfilled with a suitable clean subgrade soil and compacted to a density similar to the surrounding soils.

3.5 Turbine Access Roads

Once the turbine access roads are no longer needed to facilitate the decommissioning process, all of the access road surfacing material will be stripped off to the native soil subgrade. Access road surfacing material will be hauled away for repurposing as roadway material or disposal. The subgrade will then be sufficiently ripped to remove any compacted soils. Topsoil will then be spread over the exposed access road subgrade as to restore existing drainage conditions. The topsoil will then be stabilized as required by local and state pollution control requirements.

3.6 Collection System

All underground collection cable, junction boxes, and conduits will be removed to a depth of at least 4 feet below grade. The valuable materials generated will be sold as scrap, with the remaining materials recycled or properly disposed of offsite.

3.7 Project Substation & Transmission Line

The collector substation above ground structural steel and control equipment will be dismantled and removed from the project. Structural steel, cables, electrical control equipment, transformers, etc... will be reused, sold as scrap, recycled, or properly disposed of based on market values. Concrete foundations and underground conduit will be removed to a depth of 4 feet below grade. All gravel surfacing will be removed and disposed of. The approximately 500 feet of underground transmission line connecting to the grid interconnect will be removed and disposed of through recycling, selling for scrap, or hauled to a waste management facility. All the areas previously occupied by either substation or transmission line infrastructure will be properly decompacted, re-spread with topsoil, and revegetated to achieve restoration.

3.8 Operations & Maintenance (O&M) Building

The approximately 7,000 square-foot O&M building will be demolished with the resulting materials being disposed of offsite. The 2-acre gravel surface lot surrounding the building site will be reclaimed, thoroughly cleaned of any construction debris, and restored back to agricultural use. All building foundation and communications cable will be removed to a depth of 4 feet below grade. The site will be cleaned of debris, graded, decompacted, and re-spread with topsoil to ensure revegetation and proper restoration.

3.9 Meteorological Tower

The single 80m tall meteorological tower will be disassembled with all of the materials/equipment being removed from the site. Tower steel will be sold as scrap, recycled, or disposed of appropriately depending upon market value. Foundations and underground components (cabling) will be removed to a depth of 4 feet below grade and the excavation filled, contoured, and revegetated. The area will be cleaned, and all debris will be removed.

3.10 Aircraft Detection Lighting System Removal

The ADLS unit will be disassembled, and all material/equipment will be removed from the site. Tower steel, conductors, switches, transformers, etc... will be reconditioned and reused, sold as scrap, recycled, or disposed of appropriately depending upon market value. Foundations and underground components (cabling) will be removed to a depth of 4 feet below grade and the excavation filled, contoured, and revegetated. The site surface gravel will be removed for disposal. All unexcavated areas compacted by equipment used in decommissioning shall be decompacted to adequately restore the topsoil and subgrade material to the proper density consistent and compatible with the surrounding area. The area will be cleaned, and all debris will be removed.

4.0 SITE RESTORATION PROCESS

To the extent possible, topsoil will be removed prior to removal of structures from all work areas and stockpiled, clearly designated, and separated from other excavated material. Prior to topsoil replacement, all rocks 4 inches or greater will be removed from the surface of the subsoil. The topsoil will be de-compacted to match the density and consistency of the immediate surrounding

area. The topsoil will be replaced to original depth, and original surface contours reestablished where possible. All rocks 4 inches or larger will be removed from the surface of the topsoil. Any topsoil deficiency and trench settling will be mitigated with imported topsoil consistent with the quality of the affected site.

All disturbed soil surfaces will be seeded with a seed mix agreed upon with the landowner(s) and/or applicable local, state or federal agencies such as the U.S. Department of Agriculture. These areas will be restored to a condition and forage density similar to the original condition. In all areas restoration will include, as reasonably required, leveling, terracing, mulching, and other necessary steps to prevent soil erosion, to ensure the establishment of suitable grasses and forbs, and to control noxious weeds. Areas restored in agricultural fields will only be reseeded at the request of the landowner. It is assumed that 90 percent of the access roads will be in agricultural areas.

5.0 DECOMMISSIONING COSTS

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 discontinue the Project facilities, with all equipment and structures 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 material.

The estimated decommissioning costs for the Project were primarily derived from *"Document X01-1776-001, Rev. A, March 2020 Xcel Energy Dismantling Cost Study"* which calculates and details the costs associated with dismantling Xcel Energy's generating facilities. The estimated decommissioning costs presented for the repowering project were derived using cost escalation to account for the new turbine technology as well as 1 year of inflation. As summarized in Appendix A, the current cost of decommissioning the Project is estimated to be approximately $285,855 per turbine in 2021 dollars. This cost includes a partial offset from the salvage value of the towers, turbine components, and electrical equipment.

In Docket No. E,G002/D-19-723 (the 2020 Annual Review of Remaining Lives), the Company has proposed the following net salvage percentages for those wind facilities currently in operation:

Plant	Location	Proposed net salvage percent
Blazing Star I Wind	Minnesota	-11.6%
Border Winds	North Dakota	-9.5%
Courtenay Wind	North Dakota	-10.4%
Foxtail Wind	North Dakota	-9.1%

Grand Meadow Wind	Minnesota	-12.5%
Lake Benton II Wind	Minnesota	-10.8%
Nobles Wind	Minnesota	-8.5%
Pleasant Valley	Minnesota	-11.7%
Average		**-10.5%**

6.0 PERMITTING AND NOTIFICATIONS

- All decommissioning and restoration activities will comply with federal and state permit requirements. The permits, if required, will be applied for and received prior to decommissioning construction activities commencing.
- 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. A Storm Water Pollution Prevention Plan will be developed prior to filing a Notice of Intent.
- 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. No air permits are currently required for construction activities typical for decommissioning.
- Should decommissioning activities cause temporary or permanent impacts to wetlands, permit applications will be submitted, as appropriate, to the Army Corps of Engineers for dredge and fill within waters of the U.S. under Section 404 of the Clean Water Act, to the Local Government Unit for Minnesota Wetland Conservation Act coverage and the MPCA for Water Quality Certification under Section 401 of the CWA prior to construction.
- A Spill Prevention, Control and Countermeasures (SPCC) Plan for decommissioning, separate from the operating SPCC will likely be required.
- A Case Specific Beneficial Use Determination is required from the MPCA Solid Waste Division for approval to leave portions of the foundations in place.

7.0 FINANCIAL SURETY

The cost of decommissioning is estimated to be approximately $38,304,638 in 2021 dollars. NSP will be responsible for all costs associated with decommissioning. A negative net salvage rate will be used to ensure that there are adequate funds for decommissioning and restoration costs. The net salvage rate reflects the net of the estimated decommissioning costs and any offsetting proceeds from the salvaging and/or recycling of generation equipment. The net salvage rate will be negative in this case because the forecasted costs of decommissioning the facility are higher than the expected salvage proceeds. NSP is required to conduct a comprehensive dismantling study every 5 years, and report to the PUC as part of the Annual Review of Remaining Lives. A third-party evaluation will be conducted every 5 years to determine the accuracy of decommissioning costs and make any necessary adjustments to the guaranty.

Dismantling Cost Estimate

XCEL ENERGY - NOBLES REPOWER

ITEM	DESCRIPTION	QTY	UNIT	UNIT PRICE	NOBLES REPOWER AMOUNT
1	TURBINE SITE REMOVAL				
1a	Dismantle Wind Turbine Generators - GE1.6-91	22	EA	$140,000	$3,080,000
	Dismantle Wind Turbine Generators - GE1.6-97	111	EA	$145,000	$16,095,000
	Dismantle Wind Turbine Generators - V136-3.6	1	EA	$180,000	$180,000
1b	Haul Off of Materials (Trucking/Rail)	134	EA	33,000	$4,422,000
1c	48” Foundation Removal - GE1.6-9X	133	EA	$3,500	$465,500
	48” Foundation Removal - V136-3.6	1	EA	$5,000	$5,000
1d	Crane Mobilization & Demobilization	1	LS	$1,947,813	$1,947,813
		SUBTOTAL			**$26,195,313**
2	SITE CIVIL WORK REMOVAL				
2a	Balance of Site Civil Work Removals	1	LS	$14,103,382	$14,103,382
		SUBTOTAL			**$14,103,382**
3	COLLECTION SYSTEM REMOVAL				

3a	Remove MV Collection Cable	1	LS	$600,000	$600,000
3b	Remove Junction Boxes & Turbine Switchgears	1	LS	$75,000	$75,000
		SUBTOTAL			**$675,000**
		SITE SUBTOTAL			**$40,973,694**
	CONTINGENGY (15%)				$6,146,054
	Project Total (before scrap credit)				$47,119,748
	APPROXIMATE SCRAP VALUE OF COMPONENTS				($8,815,111)
TOTAL PRICE					**$38,304,638**