

Appendix D: Analysis and Supporting Documentation

Attachment D-1
EA Determination

PMC-EF2a

(20102)

**U.S. DEPARTMENT OF ENERGY
EERE PROJECT MANAGEMENT CENTER
NEPA DETERMINATION**

**RECIPIENT:** Monarch Wind Power LLC**STATE:** IL**PROJECT TITLE :** Monarch Warren County Turbine Project

Funding Opportunity Announcement Number Procurement Instrument Number NEPA Control Number CID Number
GOO

Based on my review of the information concerning the proposed action, as NEPA Compliance Officer (authorized under DOE Order 451.1A), I have made the following determination:

CX, EA, EIS APPENDIX AND NUMBER:

Description:

- A9** Information gathering (including, but not limited to, literature surveys, inventories, audits), data analysis (including computer modeling), document preparation (such as conceptual design or feasibility studies, analytical energy supply and demand studies), and dissemination (including, but not limited to, document mailings, publication, and distribution; and classroom training and informational programs), but not including site characterization or environmental monitoring.
- B3.1** Onsite and offsite site characterization and environmental monitoring, including siting, construction (or modification), operation, and dismantlement or closing (abandonment) of characterization and monitoring devices and siting, construction, and associated operation of a small-scale laboratory building or renovation of a room in an existing building for sample analysis. Activities covered include, but are not limited to, site characterization and environmental monitoring under CERCLA and RCRA. Specific activities include, but are not limited to:
- C12** Siting, construction, and operation of energy system prototypes including, but not limited to, wind resource, hydropower, geothermal, fossil fuel, biomass, and solar energy pilot projects.

Rational for determination:

The proposed project consists of the development and construction of a 20MW wind generation facility on approximately 750 acres of land leased in Warren County, Illinois in collaboration with GE Energy (turbine supplier). The site is located about four miles south of Monmouth in West Central Illinois along both sides of Route 67. Eight turbines are proposed to be constructed on land leased from private landowners, with the other five turbines to be installed on County property. Monarch Wind Power has completed a wind study that uses two years of site-specific data and provides estimates of renewable energy generation for various turbines, as well as an avian/environmental study. The entire 20MW facility will be interconnected to an Ameren 69kv distribution line that runs along Route 67. The line bifurcates the site.

The turbines will be located on active agricultural fields. The five parcels are flat in topography and are undeveloped aside from agricultural uses. No structures or buildings are present at the proposed locations. The existing vegetation consists completely of agricultural crops. No undeveloped areas containing non-agricultural vegetation are present within the project extents. According to the applicant, no wildlife preserves or natural areas are located in the vicinity of the proposed project, and no mapped wetland areas are depicted in the USGS map for the area. No listed floodplains are depicted in the FEMA Flood Insurance Rate Maps (FIRMs) for the project. The current site plan complies with the Warren County zoning statutes for wind energy systems, and Monarch's land leases comply with the County's decommissioning statute. A County side road runs the depth of the County property and all the other turbine sites are close to existing roads, with most of them within easy access to Route 67 itself. With some upgrading and culverts, all the turbine sites will be easily accessible with a minimal amount of roadwork. The County will handle most of the construction and erection permits in compliance with its Wind Ordinance.

The project description and area covered was submitted to the on-line service EcoCAT of the Illinois Department of Natural Resources (DNR). The report generated indicated no state-listed threatened or endangered species and no Illinois Nature Preserves or registered Land and Water Reserves in the vicinity of the project location. Further consultation with the Illinois DNR indicates that migratory birds and bats will be the principal concern with the proposed project. Also of possible concern is the nearby prairie remnant that was originally established for a relict population of Massasauga rattlesnakes.

The impact of wind turbines on birds and bats is the most significant area for potential concern. The proposed Monarch wind facility lies within the Mississippi migratory flyway and as such has the potential to intercept migrants during inclement weather or when birds are landing or taking off. However, because the sites are not located near any significant habitat such as ponds, lakes or large forested tracts that would be sought by resting migrants, it is believed the potential for collision with turbines while ascending or descending is probably very low. Thus, inclement weather forcing birds to migrate at lower altitudes would carry the most potential for causing mortality.

Although studies of bird and bat mortality at wind facilities is in its infancy, recent studies have shown that bats are more at risk than birds. At the time of the EcoCAT study, no endangered bats had been recorded in Warren County and the intensively farmed area reduces the likelihood of any roosting sites. Although the EcoCAT report is a good first step in assessing wildlife impact, a pre-construction survey for breeding birds should be conducted. The survey is recommended for the June timeframe and to last for a minimum of two weeks.

Finally, the size of the wind towers will require FAA review and permitting. There are no airports in the immediate area, but a municipal airport is in the vicinity.

The sheer size of the project (i.e., 13 399ft tall wind turbines spread over 750 acres) raises the potential for public concern and environmental impact. Similarly, the nature of the project does not lend itself to any listed categorical exclusion applicable to general agency actions. As a result, an EA is recommended. In review of the environmental studies already completed, there is little reason to suspect that the project will require an EIS.

NEPA PROVISION

DOE has made a final NEPA determination for this award

Insert the following language in the award:

DOE has made a conditional NEPA determination for this award, and funding for certain tasks under this award is contingent upon the final NEPA determination.

Insert the following language in the award:

You are restricted from taking any action using federal funds, which would have an adverse affect on the environment or limit the choice of reasonable alternatives prior to DOE/NNSA providing either a NEPA clearance or a final NEPA decision regarding the project.

Prohibited actions include:

Construction of the Monarch Warren County Turbine Wind Farm. An Environmental Assessment must be completed and approved by DOE prior to initiating construction of the facility.

This restriction does not preclude you from:

Performing work to collect information and generate data required for the Environmental Assessment including, but not limited to, conducting environmental studies and public meetings in regard to the proposed project.

If you move forward with activities that are not authorized for federal funding by the DOE Contracting Officer in advance of the final NEPA decision, you are doing so at risk of not receiving federal funding and such costs may not be recognized as allowable cost share.

Insert the following language in the award:

You are required to:

Submit an Environmental Assessment to the Golden Field Office. A Finding of No Significant Impact (FONSI) is required before funds will be release for construction of the facility.

Note to Specialist :

According the the Project Officer, \$30,000 should be made available to the State and Applicant to support completion of the Environmental Assessment (EA). Additional funds are to be withheld pending review of the EA and issuance of a FONSI.

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: Steve Blazek
NEPA Compliance Officer

Date: 3/17/2010

FIELD OFFICE MANAGER DETERMINATION

Field Office Manager review required

NCO REQUESTS THE FIELD OFFICE MANAGER REVIEW FOR THE FOLLOWING REASON:

- Proposed action fits within a categorical exclusion but involves a high profile or controversial issue that warrants Field Office Manager's attention.
- Proposed action falls within an EA or EIS category and therefore requires Field Office Manager's review and determination.

BASED ON MY REVIEW I CONCUR WITH THE DETERMINATION OF THE NCO :

Field Office Manager's Signature: _____
Field Office Manager

Date: 5/13/2010

Attachment D-2

GE 1.6 xle Model Specifications Sheet



GE Energy

Technical Documentation Summary

Wind Turbine Generator Systems

GE 1.6xle – 50 Hz / 60 Hz

1 Introduction

This document summarizes the technical description and specifications of the GE Energy (GE) 1.6xle wind turbine generator system.

2 Technical Description of the Wind Turbine and Major Components

The wind turbine is a three bladed, upwind, horizontal-axis wind turbine with a rotor diameter of 82.5 m. The turbine rotor and nacelle are mounted on top of a tubular tower giving a rotor hub height of 80 or 100 m. The machine employs active yaw control (designed to steer the machine with respect to the wind direction), active blade pitch control (designed to regulate turbine rotor speed), and a generator/power electronic converter system.

The wind turbine features a distributed drive train design wherein the major drive train components including main shaft bearings, gearbox, generator, yaw drives, and control panel are attached to a bedplate.

2.1 Rotor

The rotor diameter is 82.5 m, resulting in a swept area of 5,346 m², and is designed to operate between 9.8 and 18.7 revolutions per minute (rpm). Rotor speed is regulated by a combination of blade pitch angle adjustment and generator/converter torque control. The rotor spins in a clock-wise direction under normal operating conditions when viewed from an upwind location.

Full blade pitch angle range is approximately 90°, with the 0°-position being with the airfoil chord line flat to the prevailing wind. The blades being pitched to a full feather pitch angle of approximately 90° accomplishes aerodynamic braking of the rotor; whereby the blades “spill” the wind thus limiting rotor speed.



2.2 Blades

There are three rotor blades used on each wind turbine. The airfoils transition along the blade span with the thicker airfoils being located in-board towards the blade root (hub) and gradually tapering to thinner cross sections out towards the blade tip.

2.3 Blade Pitch Control System

The rotor utilizes three (one for each blade) independent electric pitch motors and controllers to provide adjustment of the blade pitch angle during operation. Blade pitch angle is adjusted by an electric drive that is mounted inside the rotor hub and is coupled to a ring gear mounted to the inner race of the blade pitch bearing.

GE's active-pitch controller enables the wind turbine rotor to regulate speed, when above rated wind speed, by allowing the blade to "spill" excess aerodynamic lift. Energy from wind gusts below rated wind speed is captured by allowing the rotor to speed up, transforming this gust energy into kinetic which may then be extracted from the rotor.

Three independent back-up units are provided to power each individual blade pitch system to feather the blades and shut down the machine in the event of a grid line outage or other fault. By having all three blades outfitted with independent pitch systems, redundancy of individual blade aerodynamic braking capability is provided.

2.4 Hub

The hub is used to connect the three rotor blades to the turbine main shaft. The hub also houses the three electric blade pitch systems and is mounted directly to the main shaft. Access to the inside of the hub is provided through a hatch.

2.5 Gearbox

The gearbox in the wind turbine is designed to transmit power between the low-rpm turbine rotor and high-rpm electric generator. The gearbox is a multi-stage planetary/helical gear design. The gearbox is mounted to the machine bedplate. The gearing is designed to transfer torsional power from the wind turbine rotor to the electric generator. A parking brake is mounted on the high-speed shaft of the gearbox.

2.6 Bearings

The blade pitch bearing is designed to allow the blade to pitch about a span-wise pitch axis. The inner race of the blade pitch bearing is outfitted with a blade drive gear that enables the blade to be driven in pitch by an electric gear-driven motor/controller.



The main shaft bearing is a roller bearing mounted in a pillow-block housing arrangement.

The bearings used inside the gearbox are of the cylindrical, spherical and tapered roller type. These bearings are designed to provide bearing and alignment of the internal gearing shafts and accommodate radial and axial loads.

2.7 Brake System

The electrically actuated individual blade pitch systems act as the main braking system for the wind turbine. Braking under normal operating conditions is accomplished by feathering the blades out of the wind. Any single feathered rotor blade is designed to slow the rotor, and each rotor blade has its own back-up to provide power to the electric drive in the event of a grid line loss.

The turbine is also equipped with a mechanical brake located at the output (high-speed) shaft of the gearbox. This brake is only applied as an auxiliary brake to the main aerodynamic brake and to prevent rotation of the machinery as required by certain service activities.

2.8 Generator

The generator is a doubly-fed induction type. The generator meets protection class requirements of the International Standard IP 54 (totally enclosed). The generator is mounted to the bedplate and the mounting is designed so as to reduce vibration and noise transfer to the bedplate.

2.9 Flexible Coupling

Designed to protect the drive train from excessive torque loads, a flexible coupling is provided between the generator and gearbox output shaft this is equipped with a torque-limiting device sized to keep the max. allowable torque below the maximum design limit of the drive train.

2.10 Yaw System

A roller bearing attached between the nacelle and tower facilitates yaw motion. Planetary yaw drives (with brakes that engage when the drive is disabled) mesh with the outside gear of the yaw bearing and steer the machine to track the wind in yaw. The automatic yaw brakes engage in order to prevent the yaw drives from seeing peak loads from any turbulent wind.

The controller activates the yaw drives to align the nacelle to the average wind direction based on the wind vane sensor mounted on top of the nacelle.

IA cable twist sensor provides a record of nacelle yaw position and cable twisting. After the sensor detects excessive rotation in one direction, the controller automatically brings the rotor to



a complete stop, untwists the cable by counter yawing of the nacelle, and restarts the wind turbine.

2.11 Tower

The wind turbine is mounted on top of a tubular tower. The tubular tower is manufactured in sections from steel plate. Access to the turbine is through a lockable steel door at the base of the tower. Service platforms are provided. Access to the nacelle is provided by a ladder and a fall arresting safety system is included. Interior lights are installed at critical points from the base of the tower to the tower top.

2.12 Nacelle

The nacelle houses the main components of the wind turbine generator. Access from the tower into the nacelle is through the bottom of the nacelle. The nacelle is ventilated. It is illuminated with electric light. A hatch at the front end of the nacelle provides access to the blades and hub. The rotor can be secured in place with a rotor lock.

2.13 Anemometer, Wind Vane and Lightning Rod

An anemometer, wind vane and lightning rod are mounted on top of the nacelle housing. Access to these sensors is accomplished through a hatch in the nacelle roof.

2.14 Lightning Protection

The rotor blades are equipped with a lightning receptors mounted in the blade. The turbine is grounded and shielded to protect against lightning, however, lightning is an unpredictable force of nature, and it is possible that a lightning strike could damage various components notwithstanding the lightning protection deployed in the machine.

2.15 Wind Turbine Control System

The wind turbine machine can be controlled automatically or manually from either an interface located inside the nacelle or from a control box at the bottom of the tower. Control signals can also be sent from a remote computer via a Supervisory Control and Data Acquisition System (SCADA), with local lockout capability provided at the turbine controller.

Service switches at the tower top prevent service personnel at the bottom of the tower from operating certain systems of the turbine while service personnel are in the nacelle. To override any machine operation, Emergency-stop buttons located in the tower base and in the nacelle can be activated to stop the turbine in the event of an emergency.

2.16 Power Converter



The wind turbine uses a power converter system that consists of a converter on the rotor side, a DC intermediate circuit, and a power inverter on the grid side.

The converter system consists of a power module and the associated electrical equipment. Variable output frequency of the converter allows operation of the generator.

3 Technical Data for the 1.6xle

3.1 Rotor

Diameter	82.5 m
Number of blades	3
Swept area	5346 m ²
Rotor speed range	9 - 18 rpm
Rotational direction	Clockwise looking downwind
Maximum tip speed	77.2 m/s
Orientation	Upwind
Speed regulation	Pitch control
Aerodynamic brakes	Full feathering

Attachment D-3
Special Use Conditions

SPECIAL USE EXCEPTIONS CONDITIONS

The following conditions shall apply to the special use exceptions granted to Monarch Wind Power LLC (hereinafter “Applicant”) by the Warren County Board of Supervisors on August 5, 2010, for the construction and operation of a “wind farm” in Warren County, Illinois. Applicant agrees to comply with the following conditions unless specifically exempt before any building or construction permits shall be issued.

1. Applicant will comply with all of the provisions of the Warren County Zoning Code for which a variance has not been allowed.
2. Applicant will provide the design specifications for the turbines it shall use and such will be at a minimum the 1.5 megawatt size and shall not have a total height of more than 500 feet from ground level to the tip of the rotor at its highest apex.
3. Applicant will construct and operate turbines only within the demarcated areas described in the site plan it included as part of its applications and must provide exact legal location for each turbine and substation location after construction.
4. All electrical lines that are not associated with the interconnection with the power grid will be run underground. Applicant, after completion of construction, will become a member of the Joint Utility Location Information for Excavation (“JULIE”) and agrees to identify the location of any underground electrical lines, to provide a list of the same to County, and to register the same with JULIE.
5. Applicant will repair drain tile breaks and damage within 15 days of actual notice of break or damage unless affected persons and entities agree otherwise. Applicant will maintain records of each drain tile repair, including photo and GPS location. Tile repair records will be available for inspection by the County.
6. Applicant will meet with all fire departments responsible for providing fire protection to the wind farm with respect to its fire protection plan prior to beginning construction. Applicant further agrees that it shall where reasonably possible link the wind farms detection system with the appropriate local fire districts for immediate emergency response to potentially dangerous conditions and that it will comply with the existing fee structure associated with false alarms.
7. Applicant will undertake all construction activities associated with the Project only between the hours of 6:00 a.m. and 9:00 p.m. excluding for delivery of equipment and erection of towers and installation of nacelles and blades.
8. All wind turbines constructed as part of the wind farm will be set back at least 1,500 feet from any inhabited residence as provided in the application, except where landowner consents to less restrictive setbacks.

9. All towers and blades of turbines will be painted a non-reflective and unobtrusive color which will be uniform in style and color, and that all colors, finishes, and designs will conform to Federal Aviation Administration requirements. Any onsite building or other structures will be designed so that they are unobtrusive. Applicant shall not place any lettering, insignia, advertising, or graphics on any part of the towers, hubs or blades, with the exception of required safety warnings, and manufacturer supplied identification.
10. All blades of turbines will rotate in the same direction.
11. Applicant will comply with all Federal Aviation Administration lighting guidelines and will work with the Federal Aviation Administration to establish an effective lighting plan to minimize visual impacts, both on and off site. In addition, Applicant agrees the flash intervals of any lighting scheme shall be synchronized over the entire project.
12. A monopole tower will be used on all turbines and they will be constructed without guy wires.
13. Applicant will execute a road use and maintenance agreement with Lenox Township and provide appropriate financial assurances related thereto acceptable to Lenox Township.
14. Applicant will comply with all applicable Illinois Pollution Control Board regulations.
15. Applicant will respond to all complaints from person directly affected by the Project within 48 hours and will attempt to resolve all complaints in a prompt and responsible manner. Applicant will keep a log of all complaints and the method of resolution, and will make the log available to the County. Applicant shall submit all unresolved complaints to non-binding mediation provided the complainant agrees to pay one-half (1/2) of the cost of the non-binding mediation.
16. Applicant will provide Storm Water Pollution Prevention Plan for the Project prior to the start of construction and a determination of whether a National Pollutant Discharge Elimination System (NPDES) or any other permit is required and receive such permit(s) before commencing construction.
17. Applicant will use commercially reasonable efforts to remedy or mitigate any reported and verifiable interference with radio, microwave path, TV or wireless phone interference caused by the wind farm.
18. Applicant will provide annually to the Warren County Zoning Office, within 60 days of its issuance, a certificate indicating that all facilities included in the Project have been inspected by a qualified third party engineer and are in good working condition.

19. Applicant shall provide Warren County with an estimate of decommissioning costs for the wind farm and post adequate financial assurance commensurate with the estimate, by escrow, bond, irrevocable letter of credit, or corporate surety bond in the name of Warren County. Should applicant elect to include the salvage value of turbines in applicant's estimate of decommissioning costs, salvage value will be reviewed every five (5) years for the life of the wind farm. Said review shall be completed on or before the five (5) years anniversary date of the onset of commercial operations and for each subsequent five (5) years period. Applicant shall adjust the financial assurance to Warren County to adequately reflect any changes in the salvage value.
20. Payment to non-participating residents upon completion of the wind farm shall consist of a one-time payment of \$1,000 for each residence within one mile of a turbine and \$1,500 for each residence within one-half mile of a turbine. Said payment shall not limit in any manner recipients right to bring any claim or cause of action against applicant.
21. It is the Applicant's intention to sustain Warren County's tax revenue from the facility at least equivalent to what the County would receive under the existing Illinois turbine tax statute. Pursuant to this aim, the Applicant shall pay to Warren County each year of the life of the wind farm not less than the amount of property tax that would have paid to Warren County pursuant to 35 ILCS 200/10-600, 35 ILCS 200/10-605, 35 ILCS 200/10-610, 35 ILCS 200/10-615, and 35 ILCS 200/10-620. Should such tax be repealed, revoked or otherwise made inapplicable to the Project, the Applicant agrees to continue to pay Warren County an amount equal to the turbine tax that would have been paid to Warren County under the current law as codified in 35 ILCS 200/10 *et seq* for the remaining life of the project. If, subsequent to repeal or revocation of the current turbine tax, an alternative or substitute fee or tax on turbines or the wind energy facility is imposed by the County or State of Illinois, the amount paid under this condition will be reduced by the value of the new or alternative tax or fee. The turbine tax as now constituted less any new alternative fees or taxes shall be paid to Warren County on or before the first day of June in the year following the accrual of the said tax or fee. This condition shall not prohibit the United States, State of Illinois, Warren County or any other taxing body from collecting from applicant any tax, fee, assessment or other financial obligation as allowed by United States or Illinois law. Warren County shall distribute the fee collected pursuant to this condition to local taxing bodies as required by law in the same manner as prescribed by 35 ILCS 200/18 *et seq* or as may be amended.
22. Applicant will identify a primary point of contact for community relations, complaint resolution, and public reporting.
23. Applicant shall indemnify and hold harmless the County and the County's elected officials, officers, Board of Supervisors, agents and employees ("Indemnities")

from and against any and all claims, demands, appeals, losses, attorneys' fees and expenses to the extent arising out of or resulting from Applicant's zoning, development, construction and operation of the wind farm.

24. Applicant will provide evidence that the exact location of the wind turbines and meteorological tower was provided to the County, to the IAAA and to all aerial sprayers in the County who have operated in the area in the past five years including the exact GPS coordinates, township, section number and tower heights. The County will provide to the Applicant a listing of all of the known aerial sprayers in Warren County on an annual basis.
25. Applicant will provide a notification form to all aerial spraying companies who have operated in the area in the past five years. The form may be utilized to notify Applicant when aerial crop dusting is going to occur.
26. Applicant will provide a map to all aerial sprayers showing the exact location of all turbines and meteorological towers.
27. Applicant will comply with all applicable laws and regulations and will allow County officials or their agents to investigate any issues arising from the Project at any time by entering the special use area and providing any requested documentation.
28. Applicant shall obtain all required permits from other governmental agencies (such as the Federal Aviation Administration) prior to commencing construction or as otherwise required by the applicable laws and regulations. Copies or evidence of such permits shall be submitted to the County on or before issuance of the first Building Permit for an individual wind tower. Building Permits shall be obtained from Warren County for the wind towers.
29. Should shadow flicker in excess of 30 hours per year affect any occupied residence whose owner is not a participant in the project, Applicant shall use commercially reasonable efforts to remedy the problem on a case-by-case basis by undertaking measures such as tress or vegetation plantings or awning installation.
30. Applicant shall provide to the County the following:
 - a. A site plan depicting the exact location of each turbine, substation, access road, electrical line or other components(s) of the project.
 - b. Location and description of all existing structures located within a radius equal to two times the height of the proposed tower where the wind tower site is proposed.

c. Location of all above ground utility lines within a radius equal to two (2) times the height of the proposed wind tower.

d. Location of all underground utility lines on the wind tower site.

e. Dimensional representation of the structural components of the tower construction including the case and footings.

f. Schematic of electrical systems associated with the wind tower including all existing and proposed electrical connections.

g. Manufacturer's specifications and installation and operation instructions or specific wind tower design information.

h. Certification by a registered professional engineer that the tower design is sufficient to withstand wind load requirements for the structure as defined by ICC.

i. Other information as reasonably required by the County Zoning Administrator.

31. The Applicant shall provide dust control measures as may be commercially and reasonably required by the County during construction, and shall repair any roads or other infrastructure damaged by the construction or maintenance in accordance with the Road Agreement approved by Lenox Township. Any roads or bridge damage caused by the Applicants construction or maintenance of the wind farm as determined by the process set forth in the Road Agreement shall be repaired per the terms of those Agreements. Furthermore, the Road Agreement shall provide provisions to insure that costs for future decommissioning repairs to Lenox Township roads are completed to the commercially reasonable satisfaction of those bodies as described and in the amount determined by the Road Agreement.
32. All solid waste, whether generated from supplies, equipment, parts, packaging, or operation or maintenance of the wind farm, including old parts and equipment, shall be removed from the site in a timely manner consistent with industry standards.
33. All hazardous waste generated by the operation and maintenance of the wind farm, including but not limited to lubrication materials, shall be handled in a manner consistent with all local ordinances, and state and federal laws, rules and regulations.

34. The Applicant shall reimburse non-participating owners of farmland for any additional cost of aerial chemical application due to the presence of the wind farm. The reimbursement shall not exceed fifty (50) percent of the ordinary and customary cost for such aerial application. This reimbursement is limited to those parcels of farmland that are contiguous with the turbine site as identified by the following tax identification numbers:

0801900500 0801900510 0801900600 0802000100 0802000500
0802000800 0802100400 0802100500 0802100600 0802900110
0802900200 0802900300 0803000110 0803000600 0803000800
0803000900 0803001200 0803100100

No property north of the Burlington Northern/Santa Fe Railroad line near the property is included. A person claiming reimbursement pursuant to this paragraph shall submit to Applicant a verifiable expense invoice for the effected aerial application.

35. The Applicant shall reimburse non participating landowners of farmland with property adjoining the wind farm the monetary value of the loss of agricultural production that is demonstrably the consequence of changes in drainage attributable to the construction and presence of any wind tower. This reimbursement is limited to those parcels of farmland that are contiguous with the turbine site as identified by the tax identification numbers included in Condition 34.

36. An engineer's certificate shall be completed for each wind turbine by an engineer registered in the State of Illinois certifying that the foundation for the wind turbine to be installed is adequate to support such wind turbine, the specific soils at the site of each turbine are able to support the wind turbine to be installed upon them, and the foundation will not settle to a degree more than a reasonable and acceptable industry standard allows.

37. All wind turbines must utilize self-supporting, tubular towers with an internal ladder and locked door and a sign shall be placed on each tower stating "No Trespassing. No Unauthorized Person Allowed on or In Tower. Warning Electrical Shock Hazard."

38. Substation lighting shall be limited to that necessary to provide safety and security. Normal substation nighttime operation shall utilize minimal lighting.

39. These Special Use Permits may be transferred or assigned by Monarch Wind Power LLC only upon the transferee's or assignee's execution and delivery to the Warren County Zoning Office of a letter agreeing to be bound by the foregoing conditions. Said letter shall be delivered by personal service or certified mail with return receipt.

Attachment D-4
Ameren Interconnect Study



Interconnection Impact & Facilities Study

Monarch Wind Power LLC

20.8 MW Generating Facility

near Roseville, IL

(DG-23)

December, 2010

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Interconnection Impact and Facilities Study for 20.8MW Monarch Wind Power (DG23)
Wind Farm Facility

This generation Interconnection Impact and Facilities Study fulfills the agreement made between Ameren Services Company and Monarch Wind Power LLC.

Purpose

Monarch Wind Power LLC has requested that an interconnection study be performed to determine the impact on the Ameren distribution system for connecting a 19.5 MW wind generation facility near Roseville, Illinois. Ameren owns a 69 KV line in the area. The point of interconnection will be on a circuit known to Ameren as Line 6630, a short distance from the Roseville Switching Station near a customer owned substation, the East Ponemah REA Substation.

Study Overview

The scope of this study includes the following:

- Analysis of the Ameren 69 KV system for the year 2010, for the normal and single contingency peak load conditions, as well as normal and single contingency light loading conditions (approximately 30% of peak loading).
- A short circuit study and an analysis of the equipment interrupting rating and protection requirements.
- Identification of any equipment on the Ameren distribution system requiring changes due to any thermal overload or voltage limit violations resulting from the generation interconnection.
- Non-binding cost estimates for any system modifications necessary to connect the generating facility to Ameren's electric distribution system, along with the time required to complete those modifications.
- A determination of any operating constraints required of Monarch Wind Power.

Study Assumptions and Inputs

1. 20.8 MW wind farm generation consisting of 13 wind turbines of 1.6MW each (GE 1.6xle NAMTS doubly fed asynchronous wind turbines), with capability to operate at power factors ranging from 0.9 lagging to 0.9 leading.
2. The customer site for distribution service is adjacent to Line 6630 on the west side of Rte 67, just south of the 1400 N Rd.
3. Monarch Wind Power (DG23) total cable charging capacitance assumed to be 1.03 Mvar.
4. Monarch Wind Power (DG23) total "plant load" assumed to be about 0.15 MW and 0.053 Mvar.
5. Monarch Generators will be requested to regulate the 69 kV at 1.0 per unit voltage, but only so far as the generation facility can do so within a power factor

Interconnection Impact and Facilities Study for 20.8MW Monarch Wind Power (DG23)
Wind Farm Facility

range of 0.95 leading (absorbing vars from the system) or 0.95 lagging (supplying vars to the system) at the Point of Interconnection (POI).

Need for Transmission Analysis

While dispatched at 20.8 MW during the light load study, no MW flowed to the 138 kV system. Consequently, no need for Transmission Analysis is presently indicated.

Load Flow Analysis

The Impact & Facilities Study analysis did not identify any thermal overloads or voltage violations. The load flow analysis did model the Monarch Generators as regulating the 69 kV at 1.0 per unit voltage.

The Monarch Generators are requested to regulate the 69 kV at 1.0 per unit voltage, but only so far as the generation facility can do so within a power factor range of 0.95 leading (absorbing vars from the system) or 0.95 lagging (supplying vars to the system) at the Point of Interconnection (POI). For 20.8 MW being delivered from this facility to the system at the POI, that is ± 6.84 MVAR.

It is understood by Ameren and should be understood by Monarch Wind Power that after operational experience is gained, the 1.0 p.u. voltage regulation level, may need to be adjusted. The models used in load flow analyses resulted in Monarch Wind Power facility absorbing vars at Ameren system light load and contributing vars at peak load during normal operating conditions.

The previous Feasibility Analysis was performed with both situations of 13 and 4 wind generators installed. For the Impact & Facilities Study analyses only 13 wind generators were studied since Monarch has stated that they will install all 13 wind generators.

In the Feasibility Analysis, the contingent operating condition studied with 4 wind generators did show that the 4 wind generators were not by themselves able to regulate voltage within ± 0.95 PF at 1.0 p.u. at the 69 kV POI. This is illustrative of the fact that under some operating condition(s), Monarch will not be able to maintain 1.0 p.u. voltage regulation.

There is a significant possibility that this project, Monarch Wind Power (DG23), at 20.8 MW of generation, can support local load during off peak load times and create an island. Therefore, transfer trip protection will be required with the customer's 69 kV tie breaker, on the high side of the customer's transformer, from facilities identified in the Protection Requirements section of this report. As system loading, configuration and/or operational experience change in the future, protection requirement details may need to change.

Fault Analysis

At this time, no protective equipment was identified as overdutied.

Because the generator's MW output is greater than the local distribution load, a transfer-trip relaying scheme will be required for system protection upon loss of the 69kV source. This scheme will require a transfer trip signal to be sent from locations identified in the Protection Requirements section of this report to the customer's main 69 kV breaker. If feasible, radio can be used for the transfer trip signal. The customer will have to install compatible equipment for transfer trip to their 69 kV breaker.

Ameren requires that Monarch install a transformer with a DELTA connected 69 kV high side for compatibility with Ameren's system protection scheme.

Stability Analysis

A system stability assessment is not required since islanded operation is not planned for.

Protection Requirements

Transfer Trip Requirements:

The transfer trip relaying scheme will include transmitters at Ameren's Monmouth Substation and Monmouth Switching Station. At those locations a radio signal will be keyed to send a direct transfer trip signal when the breaker serving the lines to DG23 is open. Both Monmouth Substation and Monmouth Switching Station will be sending a direct transfer trip signal, so the DG23 69 kV tie breaker will need to be opened when a direct transfer trip is received from either location. Details of changes at the locations follow:

1. At the Monmouth Substation, a SEL-2411 will need to be installed to close a contact to the direct transfer trip communication equipment whenever breaker 6628 is open. The reclosing sequence will be revised to a single reclose after 30 seconds. The reclosing of the remote terminal at the Galesburg Monmouth Blvd Substation will be changed to single reclose after 5 seconds for compatibility. A new cabinet will be required at the Monmouth Substation to install the relay and communication equipment at this location. The cost estimate is \$100,000.
2. At the Monmouth Switching Station, a SEL-2411 will need to be installed to close a contact to the direct transfer trip communication equipment whenever breaker 6622 is open. The reclosing relay will be revised for a two shot reclosing scheme

Interconnection Impact and Facilities Study for 20.8MW Monarch Wind Power (DG23)
Wind Farm Facility

with 5 second and 30 second intervals. The panel has space available to mount the relay equipment. The cost estimate is \$50,000.

3. At the DG23 station there will be required a radio and associated auxiliary and testing equipment to be installed by the applicant. The radio will be as per specification from Ameren for compatibility with the remote ends. The applicant will need to build testing provisions into the control output of the radio so that periodic testing of the channel can be done.
 - a. Even with the above transfer trip equipment, DG23 will be required to install the 81OU equipment shown in the Attachment 1, "Typical Protection and Metering Installation for Generators Greater than 100kW". The overfrequency trip should be set for 61Hz with 0.5 seconds delay, and the underfrequency trip should be set for 58.3Hz with 0.5 seconds delay.
4. If repeater stations are required for a reliable communication channel, there will be additional costs.

It is Applicant's responsibility to:

1. Design, install, operate, protect, and maintain all necessary equipment for connection to Ameren's electric system, unless otherwise stated in the contractual agreement.

The Customer is responsible for protecting Customer-owned equipment in such a manner that faults or other disturbances on the Ameren electric system or on Customer's system do not cause damage to his equipment.

2. Comply with all local, state, and federal rules, regulations and codes which are applicable; including, but not limited to, National Electrical Safety Code (NESC) and Article 705 of the National Electrical Code (NEC) latest revision or the requirements of this document, if more restrictive.

Applicant's interconnecting transmission and/or distribution lines shall be designed, constructed and maintained in accordance with applicable National Electrical Safety Code standards except that in no case shall applicant utilize a standard less than adhered to by Ameren.

3. Submit specifications and detailed plans to Ameren for the installation of the control and protective devices for review and written approval prior to the purchase and installation of such equipment as summarized in Attachment 1.

Attachment 1 shows a typical protection and metering installation for generators greater than 100 KW connected to Ameren's system. It lists the minimum protective equipment which Ameren requires for operation of its electric system in parallel with a generating source greater than 100 KW. A transfer-trip relaying scheme will be required. The high-

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side interconnection breaker, as well as all of the relay and protection equipment, is owned and installed by the customer. The equipment specifications and relay settings for coordination with Ameren's system will be determined during the Interconnection Facilities Study. The Figure for Attachment 1 is out of date with respect to the Meter and Disconnect sequence. Attachment 2 correctly shows the metering first, followed by the disconnect to the customer's facilities.

Ameren will tap the 69 KV line for connecting to the generating facilities. It is assumed that no significant line extension is necessary for connecting Ameren's line to customer's facilities. A lockable 3-phase gang-operated load-break switch will have to be installed by the customer as a means for electrically isolating the customer's generating facility from the Ameren system. The disconnecting devices will be furnished and installed by the customer as part of customer's wiring, and is subject to the following requirements:

- a. Only devices specifically approved by Ameren for this purpose may be used. The device must provide a visible means of disconnection and be capable of being locked open with Ameren's padlocks.
- b. The device shall be located for ease of access and visibility.
- c. Ameren personnel shall inspect and approve the installation before initial parallel operation will be permitted.
- d. Customer is responsible for all labor and material costs to maintain, repair, or replace the disconnecting device.

Air break switches on the source side of the tap and on the downstream side of the tap point are required to provide a means for isolating the circuit for repairs and maintenance. Ameren will install these switches as a part of tapping the line.

Metering & Telemetry Requirements

Remote communication facility (RTU) is necessary at the site for metering and relaying transfer-trip scheme. Detailed requirements for metering and telemetry will be specified as a part of the Interconnection System Impact Study or the Facilities Study. If on poles, a minimum of a two pole structure is expected for a 69 kV installation.

Cost Estimate

1. Install a 69 KV line tap and air break switches on the source and downstream sides of the generator interconnect tap point. This assumes the installation of two new poles and the reuse of an existing pole. = \$120,000.
2. Metering costs include the 69kV Intertie meter at the tap point. Estimate includes instrument transformers, meter, cabinet, conduit/cable, cell phone,



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and miscellaneous equipment. This cost does not include the costs of structures for mounting the equipment which are to be provided by Monarch Wind Power. = \$75,000.

3. Transfer-trip relaying and radio communication between the customer high side 69 kV breaker and the Monmouth Substation. = \$100,000
4. Transfer-trip relaying and radio communication between the customer high side 69 kV breaker and Breaker 6622 at Monmouth Switching Station. = \$50,000

Total Project Cost Estimate = \$ 345,000.

The cost estimate provided does not include an additional charge to cover the ongoing operation, maintenance, and replacement costs associated with the facilities added for Monarch's benefit. An additional 0.9 (90%) is to be assessed to the Total Project Cost Estimate above for this purpose.

The cost estimate provided herein also does not include costs related to taxes, otherwise referred to as the tax gross-up. At this time, depending on the timing of construction start and construction completion, the total project cost, the length of service of the facility and other factors, the tax could be either ~17% or ~30%. We should be able to provide a refined tax estimate after further project details are confirmed.

Lead Time

The lead time to install the required facilities is a minimum of 1 year from the time the authorization to proceed with the interconnection is received, based on the lead time for the equipment for the tap metering. The overall lead time is also affected by the project timing and schedule. Ameren will avoid construction that will require taking facilities out of service during peak summer months.

Contractual Requirements

Ameren will require preliminary review of protection documents, such as the one line relay and metering, during the first month of the project.

Final one-line drawings that show all required Interconnection control functions must be submitted to Ameren for review before the project is to be placed in-service.

Ameren will only accept design drawings specifically involving the interface protection. Ameren will not sort through customer's design set to find what is needed. Information desired will be clarified during design review discussions to help define the very limited number of customer documents Ameren needs for review.



Interconnection Impact and Facilities Study for 20.8MW Monarch Wind Power (DG23)
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The actual relay settings for the interface protection are required to be submitted to Ameren for review and compliance at least 2 months before the equipment is to be placed in service. Ameren will review ALL settings from the specific relays used for the interface, but will only comment on the settings and logic that assure meeting interface requirements.

Ameren requires at least one month notice before testing and startup, to alert us to schedule field personnel to witness on site customers test, contractor actual testing of the relays settings and results found. Ameren is only concerned with those items related to the interface requirements.

Ameren requires final impedance data from customer transformer and actual generator(s) data as-shipped from the factory to model in our system. This must be issued to Ameren as soon as available and prior to startup.

Ameren will not provide any specific design, settings, testing, nor maintenance for customer owned equipment at the customer's site.

Ameren requires a copy of actual relay final test records and as-left full settings must be submitted to Ameren within 30 days of startup. The easiest means is to simply give a copy of the test data to the Ameren Field Technician supporting the project at the end of the witness test, or to email test reports and actual settings to Ameren's customer contact personnel.

Disclaimer

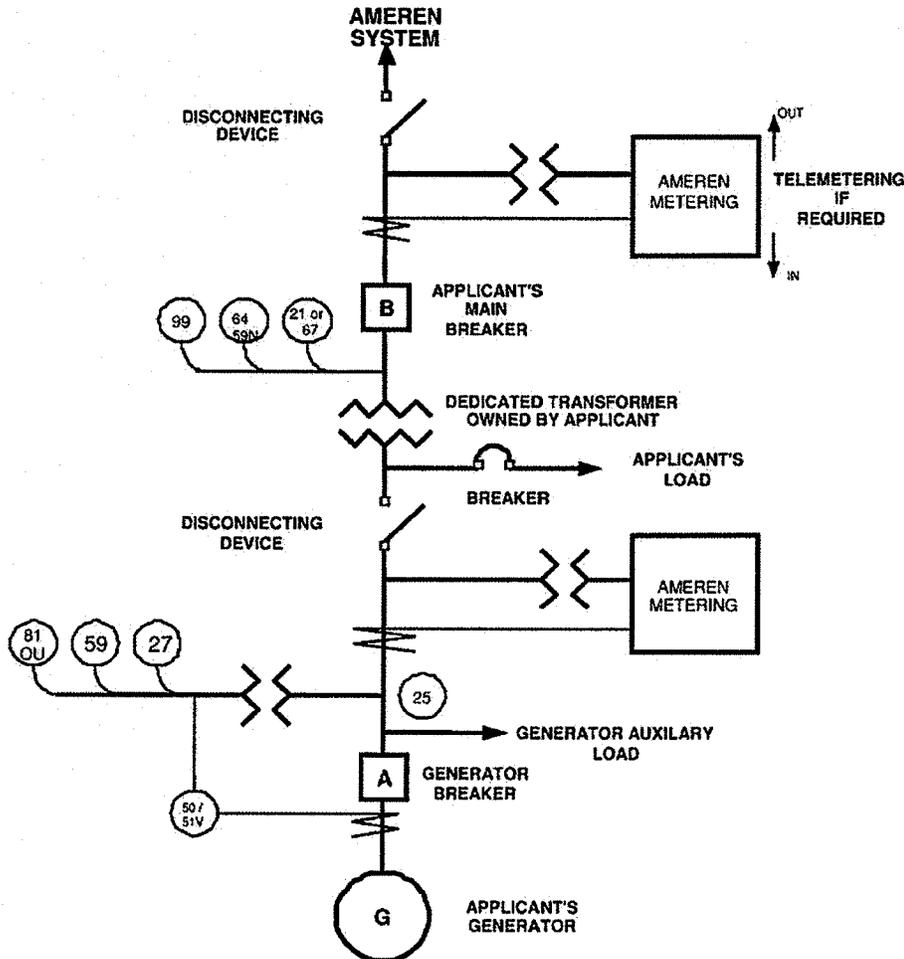
Any changes to the facility data provided by the Applicant for this study may nullify the study findings. All provisions contained herein are subject to revision to maintain Ameren's compliance with NERC. The Information contained herein was developed, in part, based upon information provided by, or caused to be provided by, the intended recipient and/user of this information. Use of the Information contained herein should be undertaken after an independent review of the facts and circumstances of the particular project for which this Information was developed. Although Ameren has made all commercially reasonable efforts to develop the Information in an accurate manner consistent with the exercise of Good Utility Practice, **NO GUARANTEES OR WARRANTIES OF ANY KIND, INCLUDING EXPRESS OR IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS ARE MADE WITH RESPECT TO THE INFORMATION BY AMEREN COMPANY, ITS AFFILIATES, ITS OFFICERS, DIRECTORS, EMPLOYEES OR AGENTS, WHO ALSO ASSUME NO LEGAL RESPONSIBILITY FOR THE ACCURACY OF THE INFORMATION CONTAINED HEREIN. IN ADDITION, NO LIABILITY IS ASSUMED AND ALL LIABILITY IS EXPRESSLY DISCLAIMED FOR NEGLIGENCE OR DAMAGES OF ANY KIND, ANY DECISIONS, CONTRACTS, COMMITMENTS, OBLIGATIONS**

Interconnection Impact and Facilities Study for 20.8MW Monarch Wind Power (DG23)
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OR ANY OTHER ACTIONS UNDERTAKEN OR MADE ON THE BASIS OF THE
INFORMATION CONTAINED HEREIN.

Attachment 1: Protection and Metering Diagram

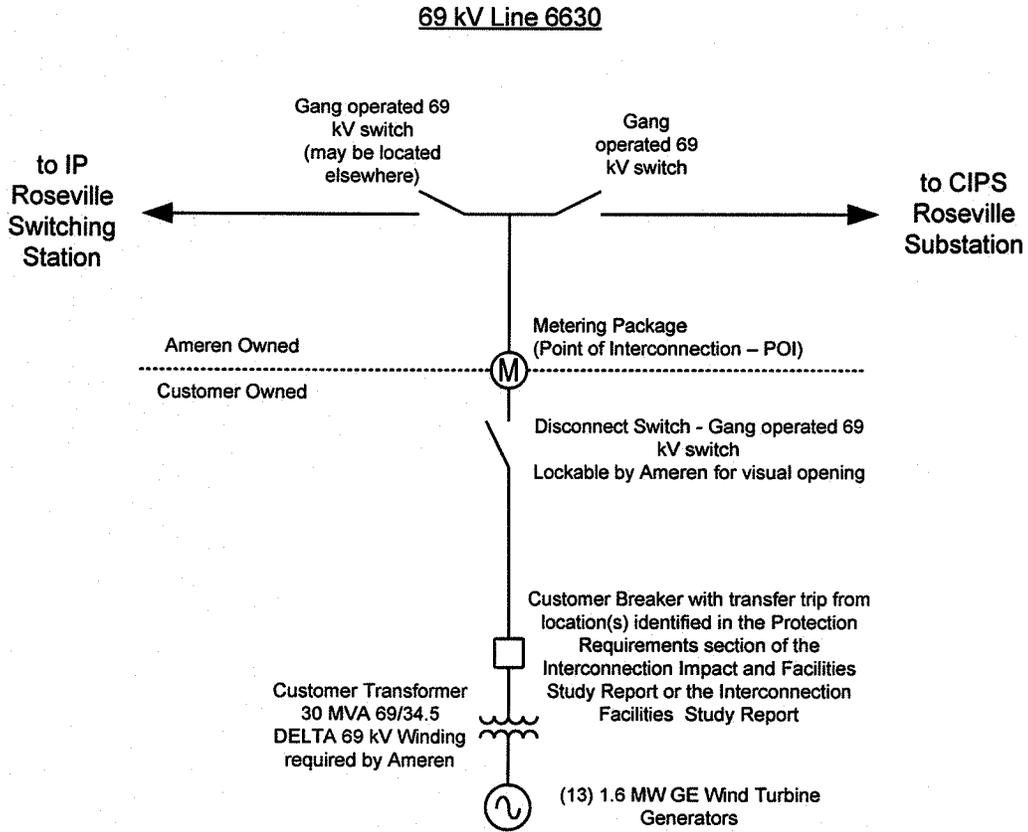
TYPICAL PROTECTION AND METERING INSTALLATION FOR GENERATORS GREATER THAN 100KW (WHEN APPLICANT OWNS THE DEDICATED TRANSFORMER)



GENERATOR AND SYSTEM PROTECTION

<u>DEVICE NO.</u>	<u>FUNCTION</u>	<u>TRIPS</u>
<u>BREAKER</u>		
21	DISTANCE	B
25	SYNCHRONIZING	-
27	UNDERVOLTAGE	A
50/51	OVERCURRENT W/VOLTAGE RETRAINT	A
59	OVERVOLTAGE	A
64 (59N)	GROUND DETECTOR	B
67	DIRECTIONAL OVERCURRENT	B
81OU	OVER & UNDER FREQUENCY	A
99	LOSS OF AMEREN'S SYSTEM	B

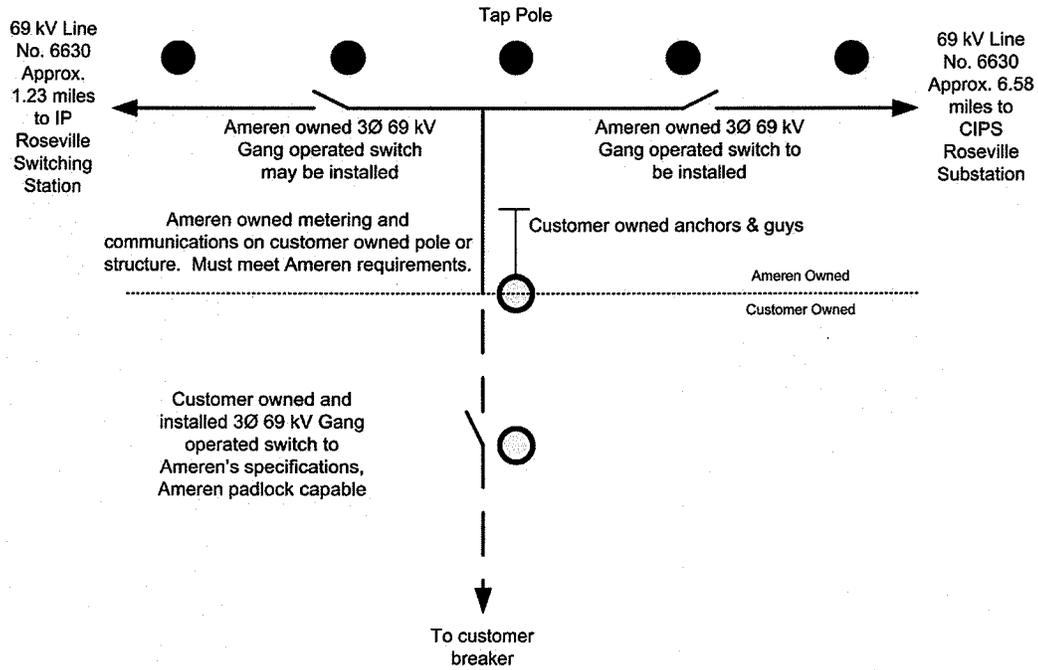
Attachment 2: Functional One-Line



Interconnection Impact and Facilities Study for 20.8MW Monarch Wind Power (DG23)
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Attachment 3: 69 kV Tap

This is a conceptual arrangement. The actual physical arrangement is to be determined after actual connection details are defined. E.g., does Monarch plan to run a pole line along 140th, or run a tap line across a field?



Attachment 4: Typical Meter Installation – Outdoor Pole Mounted

METER INSTALLATIONS
Outdoor Pole Mounted

25 00 01 01
Sheet 1 of 1

GENERAL

Standard installations of secondary and primary pole mounted metering installations are specified in this section.

1. **Secondary Installations**

Secondary pole mounted metering installations are normally customer owned. This type of installation is particularly applicable to farm distribution centers.

2. **Primary Installations**

Primary pole mounted metering installations may be either Company owned or customer owned. These installations are generally applicable to large light and power loads.

A. **Company Owned**

If the station being primary metered is to be owned by Ameren, all necessary equipment will be furnished and installed by Ameren.

B. **Customer Owned**

1. If the station being primary metered is to be owned by the customer, the customer must furnish and install the following equipment. This equipment shall be installed in accordance with appropriate Ameren Primary Metering Standards.

- a. Pole.
- b. Pole framing and steps.
- c. Switches.
- d. Lightning arresters.
- e. All primary wiring including fiber conduit when required, except that Ameren will connect the customer's primary leads to the supply conductors and to the current and potential transformers. The customer must leave sufficient lengths of wire for making these connections.
- f. Secondary wiring when required; Ameren will make connections to Secondary Supply. The customer must leave sufficient lengths of wire for making these connections.

2. Ameren will furnish and install the following equipment, and will complete metering connections.

- a. Primary or secondary supply conductors with deadend devices.
- b. Devices to connect customer's primary or secondary leads to the supply conductors.
- c. Current, potential transformers, and bracket.
- d. Devices to connect customer's primary wiring to current and potential transformers.
- e. Meter enclosure, meter, and mounting framework.
- f. All metering wiring including conduit to connect current and potential transformers to the meter.

C. Ameren's Meter Department must be notified of job as early as possible to insure availability of equipment to be provided; includes metering enclosures and transformers - cluster mounts or units, are shop wired.

Attachment 5: Typical Meter Installation – Primary Metering
69 kV

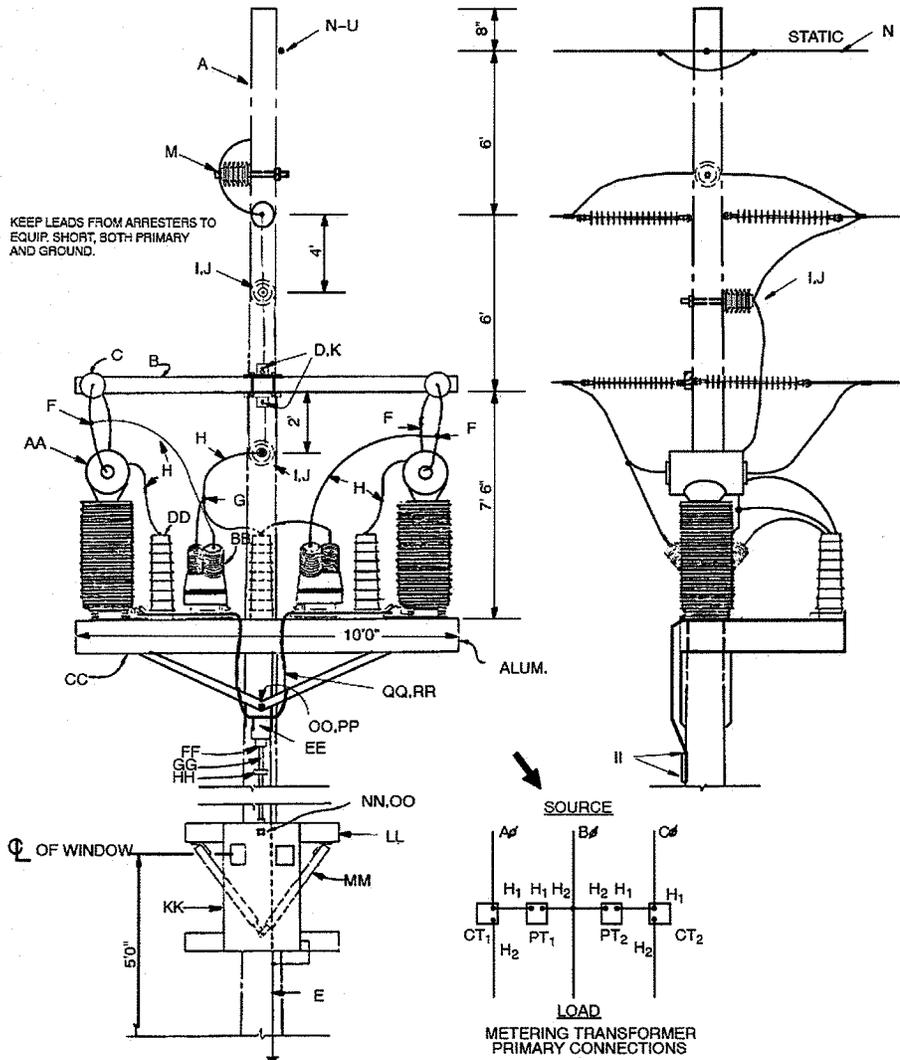
METER INSTALLATIONS
 Primary Metering
 69 kV & 34.5kV, 3 Phase, 3 Wire

25 69 01 **
 Sheet 1 of 4

CIPS ONLY

CIPS ONLY

CIPS ONLY



Interconnection Impact and Facilities Study for 20.8MW Monarch Wind Power (DG23)
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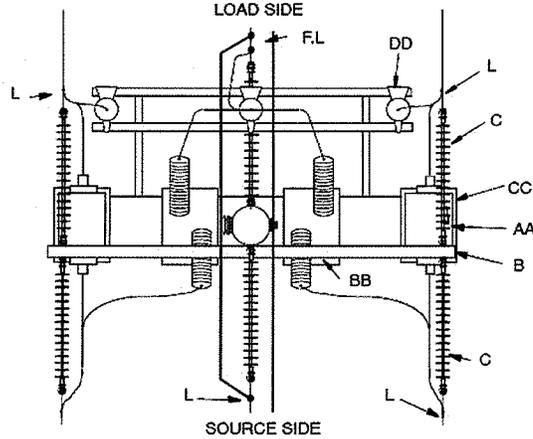
METER INSTALLATIONS
Primary Metering
69 kV & 34.5kV, 3 Phase, 3 Wire

25 69 01 **
Sheet 2 of 4

CIPS ONLY

CIPS ONLY

CIPS ONLY



NOTES:

1. Ground all instrument transformers, arrestors, and aluminum mounting assembly to the grounding unit.
2. Install barriers for protection against vehicular traffic where necessary.
3. Maintain a minimum of 36" clearance between 69kV phases. Maintain a minimum of 22" clearance between 34kV phases or phase to ground.
4. Maintain minimum of 7 1/2' clearance between the aluminum mounting platform and the crossarm. This clearance may be reduced to 6' for 34kV installations.
5. Maintain a minimum of 17" between the energized conductors and the pole.
6. Maintain a minimum of 40" between any part of the aluminum mounting platform and conductors of 4 or 12 kV underbuild.
7. If disconnect switches are required, they may be installed on adjacent poles.
8. For wire color coding on PT and CT secondaries, refer to system meter drawings.

**DISTRIBUTION
CONSTRUCTION STANDARDS**



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Interconnection Impact and Facilities Study for 20.8MW Monarch Wind Power (DG23)
Wind Farm Facility

METER INSTALLATIONS
 Primary Metering
 69 kV & 34.5kV, 3 Phase, 3 Wire

25 69 01 **
 Sheet 3 of 4

CIPS ONLY

CIPS ONLY

CIPS ONLY

Normally Provided By Customer

	Std. / Stk. No.	Description	25 69 01	01	02
A		Pole		1	1
B	41 01 188	Crossarm, 10 ft. Fiberglass, Double Deadend		1	1
C	06 34 66 04	Insulator, Deadend, Polymer, 69kV		6	
	06 34 66 02	Insulator, Deadend, Polymer, 34kV			6
D	23 66 027	Washer, 5/8", Square		2	2
E	12 00 10 01	Grounding Unit		1	1
F	17 51 139	Clamp, P.G., 336-795 kcmil to #6-2/0		5	5
G	17 51 032	Clamp, P.G., #6-1/0 to #6-1/0		1	1
H	18 53 109	Wire, #2 Cov., 5 kV, 7 str., S.D., (Ft.)		36	36
I	25 05 098	Insulator, Line Post, 69 kV, Pole Top		2	
	25 05 064	Insulator, Line Post, 34kV, Pole Top			2
J	23 53 058 to 064	Bolt - Double Arming, 3/4", Various Lengths		2	2
K	23 52 065	Bolt, Mach., 5/8" x 12"		2	2
L	PG*	Clamp, Parallel Grove (See Std. 07 00 25 00)		6	6
M	06 34 70 03	Pole Looparound, 69kV		1	
	06 34 70 01	Pole Looparound, 34kV			1
N	18 05 117	Wire, ACSR, 110.8kcmil, 12/7, EHS		-	-
O	23 68 454 or 455	Support, Shield Wire, 5/8", 14" or 16" Length		1	1
p	23 65 043	Nut, Lock, 5/8" Bolt		1	1
Q	23 66 027	Washer, Square, Flat		1	1
R	23 18 342	Clamp, Suspension, AL		1	1
S	23 59 095	Eyelet, Galv, For 3/4" Bolt		2	2
T	23 52 ---	Bolt, Machine, Galv, 3/4" Bolt, Lenght As Req'd		1	1
U	23 18 401	Clamp, Strain, AL		2	2

**DISTRIBUTION
 CONSTRUCTION STANDARDS**



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Interconnection Impact and Facilities Study for 20.8MW Monarch Wind Power (DG23)
Wind Farm Facility

METER INSTALLATIONS
 Primary Metering
 69 kV & 34.5kV, 3 Phase, 3 Wire

25 69 01 **
 Sheet 4 of 4

CIPS ONLY

CIPS ONLY

CIPS ONLY

Normally Provided By Ameren

	Std. / Stk. No.	Description	25 69 01	01	02
@	AA	Current Transformer, 69 kV or 34 kV		2	2
@	BB	Potential Transformer, 69 kV or 34 kV, Phase to Phase		2	2
	CC	23 17 349 Mounting Assembly, 69 kV Meter Transformers with Arrester Mounting Kit		1	1
	DD	71 10 121 Arrester, 57 kV MCOV, 72 kV Duty Cycle		3	
		71 10 113 Arrester, 31.5kV MCOV, 39kV Duty Cycle			3
	EE	40 01 120 Box, Secondary Connection		1	1
→	FF	40 53 612 Connector, 1" Conduit		2	2
	GG	12 51 303 Conduit, Flex, 1", (Ft.)		20	20
	HH	23 64 033 Staple		3	3
	II	21 66 039 Screw, Hex head cap, 3/8" x 2"		2	2
	JJ	Meter Shop Wire Pack of 10 ea. #12 solid Cu wires of Individual colors		30	30
	KK	40 04 043 Metering, Enclosure Assembly		1	1
	LL	41 01 014 Crossarm, 8 Ft. (Cut in Half)		1	1
	MM	41 56 063 Brace, 37" V		1	1
	NN	23 52 066 Bolt, Mach., 5/8" x 14"		2	2
	OO	23 66 027 Washer, 5/8" Square		5	5
	PP	23 52 065 Bolt, Mach., 5/8" x 12"		1	1
	QQ	23 52 097 Bolt, Mach., 3/4" x 12"		2	2
	RR	23 66 031 Washer, 3/4" Curved Square		2	2
→	SS	40 73 200 Reducer, 1 1/4" to 1"		1	1
→	TT	40 83 425 Reducer, 1 1/2" to 1"		6	6
		286 Install Primary Metering		1	1

25 69 01 01 69kV Primary Metering

25 69 01 02 34kV Primary Metering

**DISTRIBUTION
 CONSTRUCTION STANDARDS**



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Attachment D-5
Decommissioning Plan

Decommissioning Plan – Monarch 1

DRAFT

1. Introduction

The purpose of this decommissioning plan is to identify the methodology that Monarch Wind Power (the Project Sponsor) will use to mitigate potential impacts resulting from the cessation of operation of the facility at the end of the Project’s useful life. The plan identifies decommissioning triggers; specific Project components that will be removed; estimated decommissioning costs; and financial assurance

2. Anticipated Life of the Project

Megawatt-scale wind turbine generators typically have a life expectancy of 20 to 25 years. The proposed GE 1.6MW xle wind turbine generators are certified by independent agencies as having an expected useful life of at least 20 years. It is in Project Sponsor’s long-term financial interest to maximize the operational lifespan of the wind turbine generators. The Project Sponsor therefore plans to employ a proactive maintenance regime to ensure the turbines are in good repair for at least the full 20 years of expected life. As the turbines approach the anticipated end of life, it is expected that technological advances will economically drive the replacement of the existing turbines with newer models.

3. Trigger for Implementing the Decommissioning Plan

Decommissioning will occur at the end of the project life or facility abandonment. For the purposes of this section, “facility abandonment” shall mean the ceasing of electricity generation for a period of not less than 12 continuous months, unless the company produces evidence of mitigating circumstances. Such evidence may include long delays in spare part procurement or a force majeure event that interrupts the generation of electricity. As used here, a “force majeure” event means an instance such as fire, earthquake, flood, tornado, or other act of God and natural disasters; strikes or labor disputes; war; any law, order, proclamation, regulation, ordinance, action, demand or requirement of any government agency; suspension of operations of all or a portion of the project for routine maintenance, overhaul, upgrade, or reconditioning; or any other act or condition beyond the reasonable control of the Project Sponsor.

All decommissioning and restoration activities will adhere to requirement of appropriate governing authorities and will be in accordance with all applicable federal, state, and local laws.

4. Decommissioning Plan

The decommissioning and restoration process includes the removal of above-ground structures (turbines, transformers, overhead collection lines, and the substation); removal of below-ground structures (foundations and underground cables); and topsoil restoration.

4.1 Wind Turbines

Dismantling the wind turbines will require the use of cranes and heavy equipment. Electronic components, controls and internal cables will be disconnected and removed. The rotor and nacelle will be lowered to the ground for disassembly. The tower sections will be lowered to the ground where they will be further disassembled for transporting. The Project Sponsor will attempt to identify a purchaser of the intact wind turbine components. If a buyer cannot be found, the rotor, nacelle, and tower sections will be reduced to shipping dimensions for transport to an offsite facility for reconditioning, salvage, recycling, or disposal.

If resold and not scrapped, tower sections and rotors will be transported in the same manner as their delivery to the site. It is assumed that transportation costs will be the responsibility of the purchaser.

4.2 Transformers

Transformer removal will consist of disconnecting the electrical connection system from the base transformer. Any sellable components will be removed and transported offsite. Aboveground cables will be removed and the copper conductor materials may be salvaged for scrap value.

4.3 Aboveground Electrical Collection Lines

Aboveground electrical collection lines and associated components will be dismantled and the materials will be disposed, recycled or sold. Poles will be removed and holes backfilled with clean topsoil.

4.4 Turbine foundations

Turbine foundations will be excavated to a depth of 36 inches below grade (48 inches in agricultural fields) or to bedrock whichever is less to sufficiently expose and remove all anchor bolts, rebar, conduits and concrete. The excavation will be filled with clean sub-grade material, compacted to a density similar to surrounding sub-grade material, and finished with topsoil.

4.5 Substation

The Project Sponsor does not intend to decommission the substation.

4.6 Underground Cables

All underground cables at depths less than 4 feet below finished grade will be removed. All underground cables at depths greater than 4 feet below finished grade

will be abandoned in place if it is determined that their presence does not adversely impact land use and they do not pose a safety hazard.

4.7 Road Materials

All Project-related access roads and town, county, or state roads, impacted by Project decommissioning activity, if any, will be restored to original condition upon completion of decommissioning as pursuant the Lease and Road Agreements between the Project Manager and Warren County.

4.8 Soil Restoration

Once all of the above and below ground components designated for disposal or salvage have been removed, the remaining decommissioning work will consist of regarding and reseeded disturbed areas. All disturbed areas will be restored to pre-existing conditions and contours.

4.9 Access

During decommissioning activities, Warren County shall have access to the site, pursuant to reasonable notice, to inspect the results of complete decommissioning. All decommissioning and restoration activities will be in accordance will all applicable federal, state, and local permits and requirements.

5. Summary of Decommissioning Costs

The estimated cost to decommission Monarch 1 was provided by Fagen Inc. in a letter to Monarch Wind Power dated [June 15,2010]. The estimate is considered to be the current dollar value (at time of approval) of salvage value and removal costs.

The estimated [\$61,200] salvage value of each turbine will be based upon the worse case scenario assuming the only salvage value of the turbine is from scrapping the steel. The estimate was based upon the total weight of one turbine, which is 306 tons consisting primarily of steel. Because it does not separate the scrap value of all the constituent materials, the estimate is very conservative. Also, it is highly likely that there would be opportunities for re-sale for reuse all or some of the turbines or turbine components.

Based on the current estimate, the cost of decommissioning is \$364,054.

6. Financial Assurance

To provide financial assurance, the Project Sponsor agrees to deliver to the County at the end of the first year of commercial operations a letter of credit or a cash deposit with an aggregate initial face amount equal to 10% of the decommissioning cost estimate (minus salvage value). A further 10% of the decommissioning cost estimate will be funded out of Project cash flow and funded at the end of each Project fiscal year such that the decommissioning fund will be fully funded by the end of the tenth year of the Project's commercial operation. Any interest paid on

cash deposits will go toward meeting the decommissioning cost estimate. Once the decommissioning costs are fully funded, interest on cash deposits shall revert back to the Project Sponsor.

The amount of the decommissioning fund will be sufficient to decommission the site as outlined in this plan. The budget estimate, as described in Section 5, will be based on an independent estimate to remove all identified components (less salvage value), remove foundations to the specified depths and provide restoration services as outlined above. The cash deposit, letter of credit or other form of acceptable security will provide an immediate source of cash to fund decommissioning.

Upon complete decommissioning of the site, any remaining balance of the Decommissioning Fund shall be returned to the Project Sponsor.

7. Estimate Review of Decommissioning Costs

This decommissioning plan and anticipated costs shall be reviewed and updated every 5 years by a licensed engineer.

Attachment D-6
Monarch Road Agreement

ROAD USE AGREEMENT

THIS ROAD USE AGREEMENT, made this 19th day of Oct., 2010, among Monarch Wind Power LLC, a Florida limited liability company with its place of business located at 1455 Delbrook Way, Marco Island, Florida 34145 (the "**Company**"); and Lenox Township, an Illinois municipal corporation with offices at Lenox Twp. (the "**Township**"). Monarch Wind and the Township may sometimes be referred to herein individually as a "Party" or collectively as "Parties."

WHEREAS, Lenox Township has granted Monarch Wind Power the right to construct and operate Monarch Wind 1 and the related infrastructure, including access roads, electrical transmission lines and substation (the "**Project**"); and

WHEREAS, in connection with the Project, Monarch Wind Power will use certain Roadways and Public Right-of-Ways within the Township; and

WHEREAS, the underlying private landowners of property adjacent to and underneath Public Right-of-Ways have granted easements to Monarch Wind to the extent necessary to use the Public Right-of-Way for constructing, installing, maintaining and operating the Project; and

WHEREAS, the Township has agreed to allow Monarch Wind Power to inspect and reinforce the roads and related structures such as bridges or culverts as needed, to adequately support the load necessary for such transportation activities; and

WHEREAS, following completion of construction, Monarch Wind Power has agreed to repair and reconstruct the Roadways to at least the condition that existed prior to the commencement of the Project; and

WHEREAS, the Township represents and warrants that it has authority to grant Monarch Wind Power the license and other rights conveyed herein; and

WHEREAS, the Township desires to allow Monarch Wind Power to use the Roadways and Public Right of Ways, subject to the terms and conditions set forth here.

NOW, THEREFORE, IN CONSIDERATION of the mutual promises and covenants contained herein, the parties do mutually agree as follows:

1. DEFINITIONS

As used herein, the following terms shall have the following meanings:

- a. "**Agreement**" means this Road Use Agreement and any and all amendments, exhibits, or schedules attached hereto.
- b. "**Certificate of Completion**" shall have the meaning ascribed to it in Section 7.
- c. "**Event of Default**" shall have the meaning set forth in Section 13.2.

- d. **“Person”** means corporations, companies, associations, joint stock companies or associations, firms, partnerships, individuals, limited liability companies and their lessors, trustees and receivers.
- e. **“Pre-Construction Inspection Report”** shall have the meaning ascribed to it in Section 4.1.
- f. **“Project Commencement”** shall have the meaning ascribed to it in Section 4.1.
- g. **“Public Right-of-Way”** or **“Township Right-of-Way”** or **“Right-of-Way”** means the surface, the air space in, on, under, through or above the surface and the area in, on, under, through, below or next to the surface of the Roadways. The Right-of-Ways that are expected to be used are specified in Schedule 1.
- h. **“Reassessment Report”** shall have the meaning ascribed to it in Section 7.1.
- i. **“Reinforcement”** shall have the meaning ascribed to it in Section 4.2.
- j. **“Remediation”** shall have the meaning ascribed to it in Section 7.2.
- k. **“Roadway(s)”** shall mean the highways, roads, streets, alleys, sidewalks, public ways, utility easements, public easements, as the same may exist now or hereafter. The Roadways that are expected to be used are specified in Schedule 1.
- l. **“Term”** shall have the meaning ascribed to it in Section 15.
- m. **“County Engineer”** shall mean the Warren County engineer or Township-designated consultant with sufficient training and experience to conduct the tasks set forth in this Agreement.

2. **PERMIT**

The Township hereby permits Monarch Wind Power, and its employees, agents, and contractors, to enter upon the Roadways and the Public Right-of-Way for the purpose of:

- a. During pre-construction, construction and remediation: (i) transporting personnel, equipment and materials over the Roadways to support the Project; (ii) making investigations and inspections thereon, including, without limitation, investigations related to the load-bearing characteristics of the Roadways, (iii) reinforcing the Roadways as Monarch Wind Power deems necessary for the Project, and (iv) repairing and reconstructing the Roadways to a condition at least as good as existed prior to the commencement of the Project.
- b. During operation of the Project: (i) transporting personnel, equipment and materials over the Roadways to support the Project; (ii) use of Public Right-of-Ways for the ownership, operation, leasing, maintenance, location, upgrade, repair, movement, protection, reconstruction, relocation, removal, and replacement of the Project; provided that such installation, operation, leasing, maintenance, location, upgrade, repair, move, protection, reconstruction, relocation, removal or replacement does not

obstruct access to, travel upon, or other use of the specified Public Right-of-Way or rights by a public or private party.

- c. During decommissioning of the Project: (i) transporting personnel, equipment and materials over the Roadways to support decommissioning of the Project; (ii) complying with the requirement of the Decommissioning Plan.

3. **GRANT OF LICENSE**

3.1 Grant of License. The Township hereby grants to Monarch Wind Power, subject to the terms and conditions of this Agreement, the non-exclusive right, privilege, and authority to use the public streets, alleys, and other Public Right-of-Way of the Township, as they now exist or may be hereafter constructed, opened, laid out or extended with the present limits of the Township, or in such territory as may be hereafter added to, consolidated or annexed to the Township. No use or rights herein grants in Section 3.1 shall create or vest in Monarch Wind Power any easement or any other ownership or property rights of any nature whatsoever in the Township's streets, alleys or Public Right-of-Way.

3.2 Compliance with Laws. Monarch Wind Power agrees to comply with any ordinance or local law that is properly and lawfully enacted by the Township during the term of this Agreement, and nothing in this Agreement shall be deemed to waive the requirements of any applicable codes and ordinances and local laws of the Township, including but not limited to permit requirements.

3.3 No Representation by Township. By consequence of the grant of this license, or subsequent approvals authorized by this license, the Township makes no representation, express or implied, as to the condition of the Public Right-of-Way.

4. **INSPECTION AND REINFORCEMENT**

4.1 Pre-Construction Inspection. Monarch Wind Power shall notify the Township of its intent to begin mobilization of project components and commencement of Project-related construction activities ("**Project Commencement**"). Monarch Wind Power shall inspect the Roadways and the Public Right-of-Ways identified as potentially impacted by Monarch Wind Power prior to Project Commencement to determine the condition of such Roadways and Public Right-of-Ways to determine whether the Roadways and Public Right-of-Ways are in a condition sufficient to support the wear and tear and load characteristics of such construction activities. Prior to the start of construction, the key results of the Roadway and the Public Right-of-Way inspections shall be reduced to a written report that shall be submitted to either the County Engineer or Township Road Commissioner for approval, which approval shall not be unreasonably withheld (the "**Pre-Construction Inspection Report**"). Photographs will be taken at a maximum interval of 200 feet, and at substantially lesser intervals in the vicinity of all access road intersections, to document the condition of all roadways and road shoulder area that may be impacted by construction traffic. The Pre-Construction Inspection Report shall include photographs taken with rulers or similar measurement techniques that will document the depth of ruts, if any, existing in the Roadways prior to Project Commencement.

4.2 Reinforcement. In the event such Pre-Construction Inspection Report reveals deficiencies in the quality of the Roadways necessary to support the Project-related construction activities, Monarch Wind Power shall undertake construction to reinforce the Roadways as necessary to correct such deficiencies (the “**Reinforcement**”).

5. **CONDITIONS ON USE OF ROADWAYS**

Monarch Wind Power hereby agrees that over-sized vehicles related to the Project shall be restricted to travel the Roadways during the hours of 6:00AM and 8:00PM local time, and the haul route for such over-sized vehicles shall be selected to accommodate those vehicles. Monarch Wind Power’s transportation and construction activities on the Roadways shall be conducted in such a manner as to minimize the effects on local transportation and to minimize redundancy in road construction. Monarch Wind Power agrees to actively coordinate scheduling of road use, including any activities that could result in temporary road closure, with the local school district bus schedules and with local public safety agencies.

6. **CONDITIONS ON USE OF THE PUBLIC RIGHT-OF-WAY**

6.1 Use Subordinate. Monarch Wind Power’s use of the Public Right-of-Way is subordinate, and non-exclusive, to the prior and continuing right of (1) the Township; and (ii) non-exclusive to the use of other persons authorized to use the specified Public Right-of-Way. Monarch Wind Power shall not be required to bear any of the costs of rearranging or transferring the Project if such a rearrangement or transfer is required as a result of the use by any party, other than the Township, of the Public Right-of-Way, unless any prior existing license, franchise, or easement granted by the Township so requires.

6.2 No Adverse Impact. Except as permitted by applicable law or as set forth herein, Monarch Wind Power shall not endanger persons or property or unreasonably obstruct access to, travel upon or other use of the specified Public Right-of-Way, nor shall Monarch Wind Power damage or materially impair any other facilities therein, including without limitation, streets, sidewalks, sanitary sewers, storm drains, water mains, gas mains, poles, overhead or underground wires or conduits without the prior written approval of the Township.

6.3 No Expense to Township. Upon approval of this Agreement, the use of the Public Right-of-Way shall be accomplished without cost or expense to the Township and shall be in accordance with all applicable laws, rules and regulations and such other standards as the Township may from time-to-time lawfully apply generally to private users of the Public Right-of-Way and shall be accomplished in such manner as not to endanger persons or property or unreasonably obstruct access to, travel upon or other use of the specified Public Right-of-Way.

7. **REPAIR AND REMEDIATION**

7.1 Reassessment after Construction. Monarch Wind Power hereby agrees that it shall during construction, until a Certificate of Completion has been issued; repair any damage to Roadways or Public Rights-of-Ways that creates an unsafe condition, which is caused by

Monarch Wind Power, its employees, agents or contractors. Following the completion of construction, Monarch Wind Power and the County Engineer will conduct a reassessment of the conditions of the Roadways and the Public Right-of-Ways to determine whether, as a result of Monarch Wind Power's activities, the condition has degraded below the condition of the Roadways and the Public Right-of-Ways that existed prior to the Pre-Construction Inspection Report (the "**Reassessment Report**"). The Reassessment report shall use the condition of the Roadways and the Public Right-of-Ways set forth in the Pre-Construction Inspection Report, as a benchmark to determine whether degradation has occurred.

7.2 Remediation. If the Reassessment Report reveals such degradation, Monarch Wind power hereby agrees to resurface or repair the Roadways and Public Right-of-Ways to at least the condition of such Roadways and Public Right-of-Ways as of the Pre-Construction Inspection Report. However, if, in the opinion of the County Engineer, which opinion shall be based solely upon reference to the Pre-Construction Inspection Report and the Reassessment Report, damage has been caused to the Roadways or Public Right-of-Ways, or to the shoulder base or asphalt structure, which has destabilized the Roadways, reduced their durability or otherwise caused substantial damage that cannot be corrected by resurfacing to a condition at least equal to that which existed as of the Pre-Construction Inspection Report, then Monarch Wind Power will be required to remediate such Roadways, Public Right-of-Way or section of Roadway or Public Right-of-Way. The remediation activities, including any required resurfacing, undertaken pursuant to this Section 7.2 shall be referred to as the "**Remediation.**" The Parties hereby acknowledge and agree that the Remediation may include the replacing of existing culverts, except to and the extent the County Engineer determines any of the culverts are operational at the time of Monarch Wind Power undertaking such Remediation. The parties further agree that any underground cable may be abandoned in place and no further remediation is required.

7.3 Certificate of Completion. Monarch Wind Power will notify the Township when the Remediation is completed. The County Engineer will promptly inspect the Remediation. Upon inspection by the County Engineer, Monarch Wind Power's Remediation shall be deemed complete. The County Engineer will within five (5) days of such inspection issue a "Certificate of Completion" to verify completion of all Remediation contemplated by the Agreement.

8. CONTRACTORS

Monarch Wind Power may contract with third party contractors in connection with Monarch Wind Power's rights or obligations hereunder.

9. FINANCIAL OBLIGATIONS OF THE COMPANY

The construction contract will include an amount for maintenance, repairs, and remediation of the public highway. The construction contractor in conjunction with Monarch Wind Power will provide a road bond to cover any unexpected costs of remediation. Upon completion of Remediation the Construction Security shall be released back to the construction contractor or Monarch Wind Power, whichever party is relevant.

10. ADDITIONAL ROADWAYS AND PUBLIC RIGHTS-OF-WAYS

The Parties acknowledge and agree that by mutual consent additional roads and public right-of-ways may be added in the future to the Roadways and Public Right-of-Ways covered by this Agreement.

11. USE OF ROADS DURING DECOMMISSIONING

Prior to decommissioning of the Project, Monarch Wind Power or its successor Developers will consult with the Township to identify roads that may be used during decommissioning and the Parties shall conduct a roadway condition survey, similar to that performed pursuant to Section 4 of this Agreement. The Developers shall notify the Township upon completion of the decommissioning of any Phase of the Project, and the Parties shall conduct a post-decommissioning inventory in the same manner and within the same time periods provided in Section 7 of this agreement. If there is any wheel rutting, cracking or other damage to the Decommissioning Scheduled Roads caused by the Developers in excess of what was reflected in the pre-decommissioning roadway condition survey, the Township will notify Developers of such damage and the repairs needed to return the Township Roads to their pre-decommissioning condition as reflected in the roadway condition survey within 30 days of completing the survey. The design and performance of these repairs shall be done by the Township or its contractor and shall conform to standards provided in the IDOT Bureau of Local Roads and Streets Manual. The cost of these repairs shall be paid by the Developers.

12. INDEMNIFICATION AND INSURANCE

12.1 Monarch Wind shall indemnify and hold harmless Lenox Township, their officers, employees and agents from and against all losses and claims, demands, payments, suits, actions, recoveries and judgments of every nature and description (including reasonable attorney, accountant, and expert fees) resulting from bodily injury, property damage or personal injury, brought or recovered by any act or omission of Monarch Wind Power, its agents or employees, in the use of the Roadways or Public Right-of-Ways within the Township or any portions thereof, or of any failure to comply with this Agreement, except to the extent caused by the negligence of Lenox Township. Conduct by employees, consultants, officials, or agents employed or otherwise retained by Lenox Township shall not be construed to be conduct of Monarch Wind Power or its agents. The provisions of this paragraph shall survive the termination of this Agreement.

12.2 Lenox Township shall indemnify and hold harmless Monarch Wind Power, its officers, employees and agents from and against all losses and claims, demands, payments, suits, actions, recoveries and judgments of every nature and description (including reasonable attorney, accountant, and expert fees) resulting from bodily injury, property damage or personal injury, brought or recovered by any act or omission of Lenox Township, its agents or employees, in the use of the Roadways or Public Right-of-Ways within the Township or any portions thereof, or of any failure to comply with this Agreement, except to the extent caused by the negligence of Monarch Wind Power. Conduct by employees, consultants, officials, or agents employed or otherwise retained by Monarch Wind Power shall not be constructed to be conduct of Lenox Township or its agents. The provisions of this paragraph shall survive the termination of this Agreement.

13. DEFAULT AND EVENTS OF DEFAULT

13.1 Except as set forth in Section 12.2, the failure of either party to perform or observe any material covenant of this Agreement shall constitute a default, if such default is not cured within sixty (60) days of receipt of notice of such default to the defaulting party (or such longer period as is necessary provided such cure is begun within such 60 day period and is thereafter diligently pursued).

13.2 Each of the following events shall constitute an Event of Default, if such Event of Default is not cured within sixty (60) days of receipt of written notice of such event of default to the defaulting party (or such longer period as is necessary provided such cure is begun within such 60 day period and is thereafter diligently pursued): (i) the failure of Monarch Wind Power to make any payment hereunder within thirty (30) days after Monarch Wind Power's receipt of written Notice from the Township; and (ii) the failure of Monarch Wind Power to maintain Construction Security as required by Section 9 hereof.

14. REMEDIES

Notwithstanding any other provision of this Agreement, in no event shall either party be liable for special, consequential, exemplary or punitive damages as a result of the performance or non-performance of its obligations under this Agreement.

15. TERM

The Term of this Agreement shall be as of the date first executed through the completion of Remediation of the Township roads as provided for in this Agreement.

16. TERMINATION

This Agreement may be terminated by the Township upon thirty (30) days written Notice to Monarch Wind Power upon the occurrence of any of the following events:

- a. The filing of a petition in bankruptcy by Monarch Wind Power or by creditors of Monarch Wind Power or the appointment of a receiver of all or substantially all of the assets of Monarch Wind Power;
- b. Monarch Wind Power no longer conducts business in the Township; and
- c. Pursuant to Section 14.

17. ASSIGNABILITY

Should Monarch Wind Power transfer any of its interests in the ownership or operation of the Project, this Agreement shall be freely assignable to such transferee, including the obligations related to the Security. In the event of such assignment, Monarch Wind Power shall have no further obligations hereunder.

18. MISCELLANEAOUS

18.1 If any provision of this Agreement, or portion thereof, or the application thereof to any person or circumstances, shall, to any extent be held invalid, inoperative or unenforceable, the remainder of this Agreement, or the application of such provision or portion thereof to any other persons or circumstances, shall not be affected thereby; it shall not be deemed that any such invalid provision affects the consideration for this Agreement; and each provision of this Agreement shall be valid and enforceable to the fullest extent permitted by law.

18.2 To the extent set forth herein, this Agreement shall be binding upon and inure to the benefit of the successors and assigns of the parties hereto.

18.3 This Agreement may be amended, modified, or terminated at any time by a declaration in writing, executed and acknowledged by the parties hereto.

18.4 Any failure, of a party to perform its obligations under this Agreement shall not be a breach of this Agreement to the extent such failure results from Acts of God (including fires, hurricanes, earthquakes, tornadoes, flooding, snow storms, severe thunderstorms or similar natural occurrences), war, riots and civil insurrection, outbreaks of hostilities, states of emergency, governmental action, delay or inaction that did not result from wrongdoing by the party involved in such governmental action, supply shortages (including power, gasoline and other fuel shortages), omissions of third parties when such omissions did not occur due to action or inaction of the third party failing to perform, labor disputes, shortages, strikes or walkouts or transportation delays, or similar occurrences beyond the Party's reasonable control.

IN WITNESS WHEREOF, the Township has caused its corporate seal to be affixed hereto and these presents to be signed by ^{M. Lo} Milo Sprout Hwy Corp. duly authorized so to do, and to be attested to by _____, Clerk to the Board, and Monarch Wind Power has caused these presents to be signed by its duly authorized representative as of the day and year first written above.

(seal of Lenox Township)

LENOX TOWNSHIP

Milo Sprout

Attest:

Lenox Township Road Commissioner

Carol J Parish

Milo Sprout

On the 18th day of Oct. in the year 2010, before me, the undersigned, personally appeared: Milo Sprout personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledge to me that he executed the same in his capacity, and that by his signature on the instrument, the individual, or the person upon behalf of which the individual acted, executed the instrument



Janette R. Sprout

Notary Public

MONARCH WIND POWER LLC

By: Robert S. Gay

Name: Robert S Gay, CEO

On the 4th day of November in the year 2010, before me, the undersigned, personally appeared: Robert S. Gay personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledge to me that he executed the same in his capacity, and that by his signature on the instrument, the individual, or the person upon behalf of which the individual acted, executed the instrument

Lucy Fontanello 11/4/2010

Notary Public

LUCY FONTANELLO
Notary Public - State of New York
ID No. 01FO6191606
Qualified in Westchester County
My Commission Expires August 18, 2012

SCHEDULE 1

Description of Roads and Rights of Way

I. Expected Township Roads to be used for Hauling Materials and Wind Turbine Components

<u>Road Name</u>	<u>Route</u>	<u>Wind WTG Traffic (est)</u>	<u>Est. Length of Roadway</u>
140 th Avenue	From the intersection of US Highway 67 west to the center of the County Farm	8 WTG	0.4 mile
140 th Avenue	From the intersection of US Hwy 67 east to Beulah Jenks' property at NW corner of 140 th Avenue and 80 th Street	5 WTG	0.9 mile

II. Expected County Right-of-Ways for Cable Crossings

<u>Road Name</u>	<u>Approximate Location</u>
140 th Avenue	Just west of 80th Street about 01 mile

III. Expected County Right-of-Ways for Intersection Widening

<u>Intersection</u>	<u>Corners</u>
140 th Ave and US Highway 67	All corners