

# **Decommissioning Plan**

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Prepared For:

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## 1.0 INTRODUCTION / PURPOSE

The Blue Creek Wind Farm (Blue Creek) is a wind farm project proposed by Heartland Wind, LLC (whose sole member and manager is Iberdrola Renewables, Inc.) In portions of both Paulding and Van Wert Counties, Ohio. The project includes the construction of up to 159 turbines, access roads, substations, underground and overhead collection lines, and an operation and maintenance building.

The purpose of this Decommissioning Plan is to outline and describe methods and means Blue Creek will use to reclaim, restore and return the land areas altered during the construction of the wind farm to predevelopment condition and use. The plan identifies project areas and components which will be removed once the wind farm is no longer needed or when the project has surpassed the useful lifespan of the turbines and facilities.

## 2.0 PROPOSED FUTURE LAND USE

Prior to the Blue Creek Wind Farm development, the existing land use was primarily farm land / agricultural land (>90% of project area) with a lesser extent of the area consisting of grassland, wetlands, and hay land. Once the project areas are decommissioned, the areas will be returned to the predevelopment condition of farming and agricultural land uses.

## 3.0 ENGINEERING TECHNIQUES

Decommissioning of the wind farm includes multiple phases and activities such as:

- Widening of turning radii (and removal) for transporting turbine components off site
- Grading of crane pads for removal of turbine components
- Removal of above ground components (turbines, transformers, overhead collection lines, substation and operation and maintenance facility)
- Removal of turbine foundations to a depth of 60 inches
- Removal of access roads (unless the land owners request the roads to remain)
- Regrading and restoration of disturbed areas
- Application of necessary sediment and erosion controls during and following decommissioning activities

During decommissioning the landowners will be consulted to identify the extent and type of work to be completed. Some project infrastructure such as the access roads may be left in place upon request of the land owner. Underground utility lines if deeper than four (4) feet below the ground surface elevation may be left in place to minimize land disturbance and associated impacts to future land use.

All dismantling and removal / recycling of materials will comply with rules, regulations and prevailing laws at the time of decommissioning using approved disposal or recycling sites.

## 3.1 DECOMMISSIONING

#### Turning Radius and Access Road Modifications and Removal

Turning radius modification will be needed to allow for transportation of the turbine components off-site. The turning radii will be reconstructed at intersections where necessary, approximately at the same intersections as proposed for the initial construction of the facility. Additionally, the access roads will be expanded from the operational width of 16 feet to approximately 35 feet wide to allow crane access. Following removal of the turbine components the turning radius modifications will be removed and disturbed areas restored to preconstruction farmed condition with thorough de-compaction techniques and re-application of topsoil.

## Crane Pad Grading and Removal

Crane pad grading and area modification will be necessary to use a crane to remove the aboveground turbine components. Stripping and isolation of topsoil will take place to preserve the soil integrity for future land use. The base of the crane pad will be approximately 64 feet by 128 feet (8,192 square feet). The turbine components will be temporarily stored in the area of the crane pad prior to transport. Following removal of the turbine components, the crane pad area will be removed and disturbed areas restored to preconstruction farmed condition with thorough de-compaction techniques and re-application of topsoil.

#### Wind Turbines

Each wind turbine consists of five steel tower segments, a nacelle, a rotor hub and three blades which are modular components and can be disassembled. The turbine disassembly will be accomplished using large industrial cranes. The components of the wind turbines will be refurbished and reused where feasible, or sold for scrap material value. The components will be placed on tractor-trailers and removed from the site to a prearranged receiving location / facility. If the turbines are to be sold for scrap value, the handling of the turbine components would be less delicate, and perhaps even might use explosives or other non-crane methods to lower the towers. If and or when explosives are to be used, a blasting plan would be prepared to ensure that local and state requirements were to be followed. The towers may be reduced in size on-site to allow for transportation with standard truck sizes.

The turbine foundation consists of concrete and rebar. Topsoil in the area will be stripped and stockpiled in the area to separate the material for reapplication during restoration. The foundation will be exposed using backhoes, bulldozers and other heavy earth moving equipment. The foundation will be removed to a depth of 60 inches below the surface using heavy machinery to break up the concrete. The concrete and rebar, broken into manageable-sized pieces, will be contained and hauled off site to be recycled or disposed.

Following removal of the turbine and foundation, the resulting vold will be backfilled with subsoils and compacted to at least 90% of the fill material's standard Proctor density. Topsoil will be reapplied at the site and graded to match surrounding grade to promote existing drainage patterns. The topsoil will be de-compacted to a minimum depth of 18 inches and tilled to a farmable condition or revegetated depending upon location and land use at the time of decommissioning. Any drainage tile lines which were damaged during removal and restoration of the turbine foundation area will be repaired to maintain drainage.

#### Access Roads / Turbine Foundation Area Removal and Restoration

Access roads to be removed based on request from the landowner will be removed including the road base, sub-base and geotextile fabric. During removal, the topsoil along the access roads will be stripped and stockpiled in a windrow along the road. The road base materials will be removed by bulldozer and backhoe and hauled using dump trucks from the project area to be recycled or disposed at an off-site facility. The geotextile fabric will be recycled if recoverable or disposed of in a landfill off site. The access road removal will proceed from the turbine area to the township / county roads to limit tracking and provide a stable access during the removal activity and process. Following removal, topsoil will be reapplied and graded to match surrounding grade to promote existing drainage patterns. The topsoil will be de-compacted to a minimum depth of 18 inches and tilled to a farmable condition or revegetated depending upon location and land use at the time of decommissioning

#### Underground Electrical Collection Lines

The electrical cables and fiber optic conduits that are installed at a depth of four (4) feet contain no material known to be harmful to the environment and will be left in place and nonfunctional. Any cable at a depth of less than 4 feet, such as cable entering and exiting the turbine foundations or any substations, will be removed. Following any necessary removal, the area will be restored by reapplication of topsoil to match the surrounding grade and promote existing drainage patterns. The topsoil will be de-compacted to a minimum depth of 18 inches and tilled to a farmable condition or revegetated depending upon location and land use at the time of decommissioning.

#### **Over Head Electrical Collection Lines**

All support structures (poles), conductors, switches, and lines will be removed and hauled off site to a recycling facility or disposal site. The support structures' holes will be filled with a suitable compactable material. Topsoil will be applied and areas returned to a tilled, farmable condition or seeded to promote re-vegetation depending upon location.

#### Substation

Disassembly of the substations will occur in the areas owned by Blue Creek for the Blue Creek Wind Farm project. The switchyard will be owned by the transmission operator (currently AEP),

and decommissioning of that facility will occur at their option. Any steel, conductors, switches, transformers and other components of the substations will be disassembled and recycled or reused off-site. Foundations and underground components will be removed to a depth of four (4) feet. The rock base and subgrade material will be removed using bulldozers and backhoes. The material will be hauled from the site using dump trucks to be recycled or disposed at on off-site facility. Additionally, the vegetated / stormwater treatment facilities will be removed. Topsoil will be reapplied to match existing surrounding grade to promote existing drainage patterns and de-compacted to a minimum depth of 18 inches and the site will be either tilled to a farmable condition or re-vegetated, depending upon location. Heartland Wind will own the land under the substations and O&M Building, and after restoration is complete, will seek to sell the parcels to the surrounding landowners.

## **Operations and Maintenance Building**

The O&M Building will be a sturdy, general purpose steel building, similar to many of the farm buildings in the area that are used for storing agricultural equipment. Decommissioning of the O&M Building includes demolition of the building structure, foundation and rock base parking lot and associated vegetated / stormwater treatment facilities. All associated materials, concrete and rock will be removed from site using backhoes, buildozers and hauled off site in dump trucks. All materials which are able to be recycled will be brought to appropriate facilities; the remaining materials will be disposed of at an approved landfill facility. Topsoil will be reapplied at the site and graded to match surrounding grade to promote existing drainage patterns. The topsoil will be de-compacted to a minimum depth of 18 inches and tilled to a farmable condition or revegetated depending upon location and land use at the time of decommissioning.

## 3.2 RECLAMATION

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

As necessary, the topsoil will be removed and isolated prior to removal of structures and facilities for reapplication to promote future land use activities. The topsoil will be reapplied following back fill (as necessary) and graded to match adjacent existing contours to promote existing drainage patterns. The topsoil reapplied will be free from rocks greater than four inches and will not contain debris from the decommissioning activities. De-compaction of the topsoil will be done at a minimum depth of 18 inches and will be either tilled to a farmable condition or re-vegetated using seed mixes compatible and approved from the local Farm Service Agency, Soil and Water Conservation District, or Natural Resource Conservation Service. Temporary

erosion protection such as mulch, hydromulch or erosion control blanket will be applied depending upon location and land use activities.

#### 4.0 BEST MANAGEMENT PRACTICES (BMP's)

During decommissioning of the Blue Creek Wind Farm, erosion and sediment control BMP's will be implemented to minimize potential for sedimentation of surface waters and waters of the state. Potential BMPs are described below; the BMP's used should meet the specifications contained within the current edition of Ohio's Rainwater and Land Development manual. Blue Creek will review the permitting requirements at the time of decommissioning and obtain the necessary permits which may include National Pollutant Discharge Elimination System (NPDES) permitting and Section 404, Permit to Discharge Dredged or Fill Material if applicable.

## 4.1 EROSION CONTROL

All disturbed areas without permanent impermeable or gravel surfaces will be vegetated for final stabilization. All slopes steeper than 4:1 shall be restored with erosion control blankets. Erosion control blankets shall be wood fiber with two sided netting and shall include seed application prior to application of the blanket. All slopes 4:1 or flatter shall be restored with seed and mulch and shall be disc anchored. Application rate of the mulch should be 4000 lbs/ac. The site shall be stabilized with a site-appropriate seed mixture.

In agricultural areas, the disturbed soils shall be returned to the predevelopment condition. For example, where the soils were tilled / farmed and not covered with vegetation, the area must be graded, de-compacted and tilled to predevelopment condition (farmable condition).

<u>Project Phasing / Design BMP</u>: This should minimize exposure of soils at any given time and allow for concurrent stabilization of soils following decommission activity of the access roads, turbine sites, electrical, substation and O&M building.

<u>Erosion control blankets and seed BMP</u>: Erosion control blankets (double sided netting with wood fiber) will be used as temporary stabilization for areas of steep slopes (steeper than 4:1) and for areas of concentrated flow after removal of crossings and culverts (ditches, swales and similar areas). Seed will be applied in these areas with the blanket for temporary and / or permanent vegetative growth as necessary.

<u>Temporary mulch cover and seed BMP</u>: Temporary mulch cover (corn mulch or clean, weed-free straw or hay mulch) will be applied at rates of 2 tons per acre to provide temporary erosion protection of exposed soil areas with slopes flatter than or equal to 4:1. Seed will be applied with the mulch for temporary and / or permanent vegetative growth as necessary. Mulch is used for all soil types where slopes are flatter than 4:1 and no significant concentrated flows are present. The mulch is disc-anchored to the soil to keep it from blowing away. The mulch prohibits the impact of rain drops from dislodging soil and subsequently carrying the soil away during sheet drainage.

<u>Permanent seed and temporary mulch and / or erosion control blanket BMP</u>: In areas of final grade, permanent seed will be applied to promote vegetative cover for permanent erosion control, including areas adjacent to the access roads, ditches along roads, and areas which are not to be farmed. Temporary mulch and / or blanket will be applied to areas of permanent seeding as described above to provide temporary erosion protection until the permanent seed is established.

## 4.2 SEDIMENT CONTROL

<u>Removal of Ditch Crossing BMP</u>: Ditch crossing locations may be removed. Perimeter controls (such as silt fence) will be used at the crossing location to minimize runoff from the exposed soils and removal activities. Removal of the crossing will be done during dry conditions or if the streams are wet / flowing alternative BMPs such as, but not limited to a temporary dam and bypass pump to remove the crossing in dry conditions will be implemented.

<u>Dewatering:</u> A temporary sump and rock base should be used where a temporary pump is installed to dewater an area of accumulated water. If a rock base cannot be used the pump intake shall be elevated to draw water from the top of the water column to limit sedimentation. Energy dissipation (riprap) should be applied to the discharge area of the pump hose. The water should be discharged to a large flat vegetated area for filtration / infiltration prior to flowing into receiving waters of conveyances / ditches. If discharge water is turbid; dewatering bags, temporary traps and rock weepers or other adequate BMP is needed to control sediment discharge.

<u>Silt Fence BMP OR Fiber Logs:</u> Silt fences or Fiber Logs will be used as needed for perimeter controls down gradient of exposed soils during decommissioning to capture suspended sediment particles on site to extent possible. The standard silt fence or fiber logs will also be used in smaller watershed areas where the contributing areas are typically less than ¼ acre of drainage per 100 feet of standard silt fence or the fiber logs. The standard silt fence or fiber logs will also be used for stockpiles which are approximately 8 feet high and 3:1 slopes if the stockpiles are not already contained within perimeter controls. The silt fence or fiber logs should provide adequate protect if placed 3 – 5 feet from the toe of the stockpile. The standard silt fence or fiber logs.

<u>Rock Entrance / Exit Tracking Control BMP:</u> Rock construction entrances will be installed where access to a decommissioning area is needed from adjacent paved surfaces to minimize sediment tracking and may be used at the temporary and permanent access roads, lay down area, O&M Facility, substations, turbine sites and elsewhere where ever the site exits onto existing paved surfaces.

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

## 4.3 PERMITTING

All decommissioning and restoration activities will comply with local, state and federal permit requirements. Decommissioning activity will disturb more than one acre of soil; a NPDES permit from the Ohio EPA will be applied-for and received prior to commencing with decommissioning

activity. A Storm Water Pollution Prevention Plan will be developed prior to filing a Notice of Intent (NPDES application). If permanent crossings are to be removed and no discharge of dredged or fill material will take place, a Section 404 permit is not anticipated for the decommissioning of the wind farm. The Army Corp of Engineers will be notified of the work to take place at the time of decommissioning to verify the need of 404 permitting. No air permits are currently required for construction activities typical for decommissioning. State of Ohio air quality rules will be reviewed at the time the work is scheduled. Further, no operating air quality permits are needed for ongoing operation of the wind farm facility. Should any interim permits become needed, they will be closed out with documentation of compliance at decommissioning.

## 5.0 TIMELINE

Decommissioning of the wind farm will be initiated at the Ohio Power Siting Board's notice if the project has not produced electricity for a period of 12 months unless other mitigating circumstances prevail. The following sections outline a timetable for the decommissioning plan; steps towards compliance with applicable air and water quality laws and regulations; and steps for compliance with health and safety standards.

## 5.1 DECOMMISSIONING

If the project does not produce electricity for a period of 12 months the wind farm components will removed within the next 12 months.



\*Some tasks may be completed concurrently depending upon scheduling and methods of the contractor.

## 5.2 AIR QUALITY / WATER REGULATORY COMPLIANCE

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

- 1. Blue Creek will complete a Storm Water Pollution Prevention Plan to comply with the requirements of the Ohio EPA NPDES General Construction Permit.
- 2. Blue Creek will submit the Notice of Intent 21 days prior to starting construction activity associated with the decommissioning phase.
- Once notification of permit coverage is received the decommissioning activity will commence.
- 4. During decommissioning activities compliance with the NPDES permit (applicable at the time of decommissioning) will be adhered to including inspections, documentation, maintenance of BMPs, record keeping, amendments to the plan and implementation of the SWPPP.
- Within 45 days of completing the decommissioning activities and restoration a Notice of Termination (NOT) will be submitted to the Ohio EPA to terminate coverage of the NPDES permit.

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

- 1. Notification to the Corp of Engineers of expected activities such as crossing removals.
- 2. Verification of necessary permits (if any).
- 3. Blue Creek will apply for any necessary Section 404 permits prior to commencing work within waterways / wetlands.
- 4. As applicable, plans will be developed to comply with necessary permit regulations.
- Once receipt of applicable permits, decommissioning work will commence adhering to rules, timelines and requirements stated in applicable permits.

## 5.3 HEALTH AND SAFETY STANDARDS

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