Visual Impact Minimization and Mitigation Plan

Agricola Wind Project

Towns of Scipio and Venice, Cayuga County, New York

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1.0 INTRODUCTION

The following Visual Impact Minimization and Mitigation Plan (VIMMP) outlines the measures proposed or considered by Agricola Wind LLC (the Applicant) to avoid, minimize, and mitigate potential adverse visual impacts associated with the proposed Agricola Wind Project (the Facility) a utility-scale wind energy generating project located in Cayuga County, New York with a generating capacity of up to 99 megawatts (MW) including up to 24 wind turbine locations. This report was prepared in support of the Facility's review under Chapter XI, Title 16 of New York Codes, Rules, and Regulations (NYCRR), Section 1100-2.9 and Article VIII of the New York State Public Service Law (hereafter referred to as Article VIII). This document is supported by the Visual Impact Assessment (VIA; Appendix 8-A) which assesses potential visual effects of the Facility, including mitigation measures that are currently proposed as part of Facility design. The mitigation measures required for consideration by Section 1100-2.9(d) of Article VIII are discussed below, along with an indication of whether they are being proposed.

2.0 VISUAL IMPACT MINIMIZATION AND MITIGATION MEASURES

2.1 Screening/Landscaping

Due to the height of the wind turbines and their geographic extent of potential visibility, screening of individual turbines with earthen berms, fences, or planted vegetation will generally not be effective in reducing wind turbine visibility or visual impact. Therefore, no landscape screening has been proposed around these Facility components.

As discussed in Section 5.1.2 and 5.2.1 of the VIA, visibility and visual impacts of the interconnection facility (transmission [gen-tie] line, point of interconnection (POI) switchyard, and collection substation) and operation and maintenance (O&M) facility are anticipated be concentrated to within 0.5 miles of these Facility components, where viewer exposure is exceptionally limited due to the lack of residential development, visually sensitive resources, and limited number of travelers along surrounding roads. Additionally, landscape mitigation measures would not have a significant effect on reducing visibility or visual contrast from locations where these components are visible, as demonstrated in Viewpoint 14B (which illustrates the most open, unobstructed view anticipated to be available from publicly accessible areas surrounding these Facility components). The opportunity to provide mitigation in close proximity to these facilities may also conflict with minimum clearances and standards required for safe operation and/or maintenance. Therefore, no landscape screening has been proposed around these Facility components.

2.2 Architectural Design

Proposed buildings associated with the Facility are the O&M buildings and the control houses within the interconnection facility.

As described in Appendix 5-B and Section 2.2 of the VIA, the proposed control buildings associated with the POI switchyard and collection substation substations that were assessed in the VIA are 40 feet long by 14 feet wide and approximately 12 feet 10 inches tall, and the O&M facility will include an office building

(approximately 90 feet long by 48 feet wide by 15 feet tall) and storage building (approximately 60 feet long by 42 feet wide by 18 feet tall). All buildings will be clad in standing seam metal siding with a neutral grey color, which will generally result in low color contrast when viewed against the surrounding vegetation. The style, materials, and dimensions of these buildings are fairly consistent of other agricultural or light-industrial buildings found throughout the 5-mile visual study area (VSA) and are not expected to appear unusual or out of place or significantly contribute to the overall visual impact of the Facility in views from the surrounding area where visibility is possible. Therefore, mitigation measures intended to further improve the architectural design of the buildings are not proposed.

2.3 Visual Offsets

Visual off-set measures are the correction of an existing aesthetic problem to compensate for a project's impacts. An example of a visual-offset measure is the removal of an existing abandoned structure or the protection/restoration of a recreational facility near a proposed project. This mitigation strategy is employed when significant visual impacts remain after other mitigation strategies (landscape mitigation, architectural design improvement, etc.) have been implemented.

As described in this report, the Applicant is proposing several mitigation strategies to minimize or mitigate visual contrast of associated with the Facility, including undergrounding of electrical collection lines, and an Aircraft Detection Lighting System (ADLS) to minimize nighttime impacts associated with Federal Aviation Administration (FAA) lighting. No visual offset measures have been identified by host communities to date and, due to the other visual minimization and mitigation measures that are currently proposed, the Applicant has not identified any specific visual offset measures at this time. However, the Applicant is open to discussing this mitigation measure with host communities and will consider visual off-sets, and other mitigation measures as needed, to ensure operation of the Facility does not interfere with or result in significant adverse visual impacts.

The New York State Office of Parks, Recreation, and Historic Preservation (NYSHPO) requires the identification of mitigation projects to offset potential visual effects to above-ground historic resources for the Facility. Offset measures may include the improvement or restoration of historic structures, or nomination for listing properties eligible for the State/National Register of Historic Places (S/NRHP). As discussed in Exhibit 9, Section C, in accordance with Section 1100-10.2(g) of Article VIII regulations, the Applicant will complete a Cultural Resources Avoidance Minimization and Mitigation Plan (CRAMMP) as part of the pre-construction compliance filings.

2.4 Component Relocation/Rearrangement

The Facility has been sited in a windy, high elevation location to take advantage of the energy production potential. There are a limited number of suitable alternative locations for wind turbines to allow for the energy production goals of the Facility to be met while also accommodating other environmental and design constraints. As discussed in the VIA, the Facility is sited in an agricultural area, and visibility and visual impacts to high density residential areas are anticipated to be minimal.

In siting the wind turbines and other Facility components, the Applicant carefully considered all possible alternative locations/arrangements to minimize impacts. Options to relocate/rearrange wind turbines within the Facility Site are limited by the environmental, design, landowner, or construction constraints discussed in this Application. These constraints are discussed throughout the applicant materials and particularly in Exhibits 2, 7, 10, 11, 12, 13, 14, and 15. Even if relocation/rearrangement of the wind turbines to areas without constraints were to occur, shifts would result in localized visual changes to areas directly adjacent to the turbines, which are unlikely to substantively change the Facility's overall visual impacts.

As discussed in the VIA (Sections 5.1.2 and 5.21), ancillary Facility components (the O&M facility, interconnection facility, meteorological [MET] towers, and ADLS tower) are proposed in agricultural areas where viewer exposure is exceptionally limited due to the lack of residential development, visually sensitive resources, and limited number of travelers along surrounding roads. Visibility and visual impacts of these Facility components will be limited due to screening by intervening vegetation or topography, as well as their narrow profile, neutral color, relatively low height, and/or lattice tower construction. Therefore, relocation of these components to other areas within the Facility Site is unlikely to reduce their visual impacts and would essentially transfer them from one location to another.

2.5 Reduced Number and Profile (Height) of Facility Components

As described in Section 2.2 of the VIA, the VIA assumed that all 24 potential turbine positions would be occupied by the turbine with the greatest height and largest rotor diameter to evaluate the greatest potential visibility and visual impact. However, it is important to note that fewer than 24 positions would be utilized if this wind turbine model is ultimately selected because it has the highest generating capacity. Conversely, if a turbine with a lower generating capacity and lower height is selected, up to/all 24 positions would be utilized.

As described in the Bureau of Land Management (BLM) 2013 guidance document "*Best Management Practices for Reducing Visual Impacts of Renewable Energy Facility on BLM-Administered Lands*," the use of fewer, large turbines generally results in a better visual outcome than a greater number of smaller turbines. The Applicant's final turbine selection(s) for the Facility will be highly dependent on turbine model availability, deliverability, energy production capacity, the Applicant's landowner agreements, including good neighbor agreements, and the discussions the Applicant has with the wind turbine manufacturers.

With respect to other proposed above-ground Facility components, the height and design of the MET and ADLS towers and interconnection facility are constrained by engineering requirements. The Applicant considered undergrounding the conductors between the collection substation and POI switchyard to minimize visual impacts. However, the transmission owner does not allow transmission lines to be brought into a POI switchyard underground. If an underground line was proposed by the Applicant, the transmission owner would require the installation of a riser pole outside of the POI switchyard security fence, which would ultimately result in the same level of visual impact as the currently proposed design.

2.6 Alternative Technologies

Wind energy generation technology and equipment are fairly standard and do not offer variations that would significantly decrease visual impacts. Alternative technologies for power generation, such as solar power or gas-fired generation facilities, would have different, and possibly more significant visual impacts than wind. The Applicant is committed to utilizing the most efficient technology practicable.

2.7 Facility Color/Design

The proposed white/off white color of wind turbines (as mandated by the FAA to avoid daytime lighting) generally minimizes color contrast with the sky under most conditions, as demonstrated by simulations prepared under a variety of sky conditions (see Attachment D of VIA). The size and movement of the turbines prevent more extensive camouflage or design alterations from being viable mitigation alternative (i.e., the turbines cannot be made to look like anything else).

As described in Section 2.2 of the VIA, the majority of other above-ground Facility components consist of galvanized steel materials. Structures where this material is proposed, which include MET towers, ADLS tower, and substation components, have specific engineering requirements related to their design and materials that must be adhered to in order to meet the performance standards of their intended uses. Therefore, there is minimal flexibility in the design and material of these components. As discussed in the VIA, visual impacts associated with these components are expected to be fairly localized and they will not significantly contribute to the overall visual impact of the Facility.

Weathering steel or chemically dulled galvanized steel are often proposed as an alternative to specular galvanized steel to reduce visual contrast. This is a fairly common practice for certain substation components and transmission or collection line pole structures. Chemical dulling of galvanized substation equipment is considered unnecessary because this equipment has a low profile which limits its visibility within the VSA. In addition, natural oxidation and weathering will reduce the specular profile of the galvanized steel materials over time, and the dark color of weathering steel often results in greater visual contrast when viewed against the sky. However, as required in 16 NYCRR 1100-2.9(d)(3), the transmission pole structures associated with the interconnection facility will be constructed of self-weathering steel.

2.8 Facility Lighting

Permanent light sources include wind turbine FAA lights, which are discussed in Section 2.9, and safety/security lighting to be installed at the site of the O&M and interconnection facilities.

Information on permanent lighting at the interconnection and O&M facilities is included in Appendix 5-B of the Article VIII application. This appendix includes photometric plans showing proposed fixture locations and light levels in the surrounding area, mounting heights and light fixture types in the luminaire schedule, elevation drawings illustrating the mounting heights of the lights, and light fixture manufacturer specification sheets. As shown in this appendix, lighting at these facilities will utilize full cut-off light fixtures

with no drop-down optical elements and lighting will be kept to the minimum intensity required to assure safety and security while complying with Occupational Safety and Health Administration (OSHA) limits and applicable state and local standards. Additionally, all lighting will be operated manually or placed on an auto-off switch to further minimize the impacts of off-site light trespass.

Some temporary lighting (i.e., task lighting) will be utilized in the construction laydown areas and could be required at some work areas during construction. This lighting is designed to maintain a sufficient level of illumination across large areas and, as such, some off-site light trespass is anticipated during the construction period. The impacts associated with this lighting will be short-term, intermittent, and localized to the construction period and location. Task lighting will be kept to the minimum intensity required to assure safety and security while complying with OSHA limits and applicable state and local standards.

2.9 Federal Aviation Administration Aviation Hazard Lighting

As discussed in Section 2.2.1 of the VIA, to comply with FAA standards for aviation safety, it is assumed that each of the turbine nacelles will be equipped with two medium intensity flashing red (FAA-L-864) aviation obstruction warning lights (FAA lights). However, as discussed in Section 5.1.1 of the VIA, the FAA lights will be screened by vegetation, structures, and/or topography from 68.8% of the VSA. Additionally, in areas of more concentrated human settlement within the VSA, existing light sources will limit the visibility and contrast presented by the FAA lights.

Despite the mitigating factors described above, the Applicant recognizes the potential adverse visual impact of the FAA warning lights and is proposing the use of an ADLS. As discussed in Section 2.2.2 of the VIA, ADLS, if approved by the FAA and feasible for the Facility, would significantly reduce the frequency of FAA light activation (which would only occur when aircraft are passing the Facility) and nighttime impacts.

The Applicant filed a Notice for a Marking and Lighting Study of ADLS and dimmable lighting options with the FAA/Department of Defense on May 10, 2024.

2.10 Shadow Flicker

A Shadow Flicker Impact Assessment report, including a full year of hourly potential receptor-specific predicted shadow flicker based on sunshine probabilities, site-specific wind speed and direction data, and facility design, is included as Attachment A. Based on the assumptions used in the shadow flicker model, up to 13 non-participating year-round residences could receive over 30 hours of shadow flicker per year depending on the wind turbine model ultimately selected for development. The Applicant has been in contact with these non-participating receptors (see Appendix 4-B). As discussed in the shadow flicker impact assessment report and Exhibit 24 of the Article VIII application, the Applicant intends to implement curtailment measures and/or execute good neighbor agreements with the owners of any non-participating residences that could receive over 30 hours of shadow flicker per year to ensure compliance with the Article VIII regulations. Ultimately, the Applicant intends to prepare an updated shadow flicker analysis once the final turbine model has been selected and the turbine layout has been finalized.

2.11 Prohibit Advertising/Minimize Signage

The placement of any signage (including commercial advertising, conspicuous lettering, or logos identifying the Facility owner, wind turbine module manufacturer, or any other supplier entity), other than those required for public safety and security, will be prohibited at the Facility.

2.12 Underground Electrical Collection System

As described in Section 2.2 of the VIA and Exhibit 5, all electrical collection lines will be buried except for an approximately 420-foot-long overhead collection line proposed west of Burns Road in the Town of Venice where environmental constraints prevent the use of underground cabling. The collection line will be supported by approximately 60-foot tall wood collection poles. In addition, a short length of overhead transmission (gen-tie) line is proposed to connect the POI switchyard to the electrical grid and will include six overhead conductors, each approximately 200 feet in length. Due to their short length, the low height of the structures, and similarity in appearance to distribution lines in the area, the overhead collection line and transmission lines are not expected to significantly contribute to the visual impacts of the Facility.

2.13 Non-Specular Conductor and Non-reflective Finishes

The overhead collection and transmission lines will utilize non-specular conductors.