BEFORE THE POWER SITING BOARD OF THE STATE OF OHIO

In the Matter of the Amendment Application of Union Ridge Solar, LLC to its Certificate of Environmental Compatibility and Public Need	**)** **)** **)**	**Case No. 22-0471-EL-BGA**

Members of the Board:

Chair, Public Utilities Commission
Director, Department of Development
Director, Department of Health
Director, Department of Agriculture
Director, Environmental Protection Agency
Director, Department of Natural Resources
Public Member
Ohio House of Representatives
Ohio Senate

To the Honorable Power Siting Board:

Please review the attached Staff Report of Investigation, which has been filed in accordance with Ohio Power Siting Board (Board) rules. The application in this case is subject to an approval process as required by Section 4906.03 of the Ohio Revised Code (R.C.)

Sincerely,

Theresa White
Executive Director
Ohio Power Siting Board

OPSB STAFF REPORT OF INVESTIGATION

Project Name:	Union Ridge Solar Facility Amendment
Case Number:	22-0471-EL-BGA (associated with prior case no. 20-1757-EL-BGN)
Project Location:	Licking County
Applicant:	Union Ridge Solar, LLC
Application Filing Date:	May 6, 2022
Inspection Date:	August 4, 2022
Report Date:	August 4, 2022
Applicant's Waiver Requests:	None
Staff Assigned:	M. Bellamy, A. Conway

Summary of Staff Recommendations (see discussion below):

Application:	☐ Approval ☐ Disapproval ☒ Approval with Conditions
Waiver:	☐ Approval ☐ Disapproval ☒ Not Applicable

Application Description

Background

On January 20, 2022, the Ohio Power Siting Board (Board) issued a certificate (the Certificate) to Union Ridge Solar, LLC (Applicant) in Case No. 20-1757-EL-BGN for the construction, operation, and maintenance of a solar-powered electric generation facility of up to 107.7 megawatts (MW) located in Harrison Township, Licking County.

In Case No. 22-0471-EL-BGA (Amendment Application), the Applicant proposed to add the ability to use fixed tilt racking technology to the single axis tracking technology which was approved in the certificate for Case No. 20-1757-EL-BGN.

Solar Panels and Racking

The solar panels would be attached to metal racking. The racking would include steel piles driven a minimum of 7.5 feet into the ground. Single axis tracking technology uses solar modules that are oriented in rows lined up north to south with a racking system that moves east to west tracking the sun throughout the day. Fixed tilt racking technology, which the Applicant is requesting to be approved through this Amendment Application, uses solar module racks that do not track the sun but rather are fixed at a 25-degree angle. Using fixed tilt racking technology, the solar modules rows would be oriented east to west and would consist of approximately 310,000 thin film CdTe modules.[1] Solar modules have not yet been procured for the project. The project would use

1. Current solar panel technology are one of two basic types: crystalline or thin-film. Crystalline modules are silicon-based. Thin-film modules use several alternative semi-conducting compositions (such as cadmium

crystalline silicon panels or thin film CdTe panels. The Applicant would follow the US EPA's safety procedures to ensure all panels are compliant with the US EPA's Toxicity Characteristics Leaching Procedure ("TCLP") testing protocol. In addition, the panels used would qualify as a Bloomberg New Energy Finance tier 1 panel, per the Q1, 2021 assessment.[2]

Application Review

Staff reviewed the Amendment Application for environmental impacts additional to the Certificate case. Socioeconomic impacts; geology; ecological impacts; and public services, facilities, and safety-related impacts remain comparable to the Certificate case, with the exception of glare and stormwater drainage, which present impacts that, although different, continue to constitute minimal environmental impact.

Glare

Glare is the phenomenon where sunlight reflects from a surface to create a duration of bright light. Glare also encompasses glint, which is a momentary flash of bright light. Potential impacts of this reflection from solar panel(s) could be a brief reduction in visibility, afterimage, a safety risk to pilots, or a perceived nuisance to neighbors. The Applicant considered the potential effects of glint and glare in the design of solar array layout and how the panels would be operated.

Solar panels are designed to absorb as much sunlight as possible with minimal reflectivity. In this Amendment Application, the Applicant is proposing to allow the use of a fixed-tilt solar panel array with an anti-reflective coating in addition to the single-axis tracking solar panel array that was approved in the Certificate. This fixed-tilt style solar panel has a different potential glare impact than the single-axis technology. The fixed-tilt style solar array can produce glare in the morning and evening when the sun is low on the horizon.

To determine the potential impact from glare, the Applicant conducted a glint and glare analysis to identify any potential impacts from glint or glare along local roads and at nearby residences.[3] To perform the analysis of glare, the Applicant used the ForgeSolar Solar Glare Hazard Analysis Tool (SGHAT) which was developed by Sandia National Laboratories to analyze potential glare at sensitive receptor locations. This software is commonly used by solar facility developers to determine the effect of solar glare. Glare is classified in three categories in the SGHAT tool: the green type which is associated with a low potential for temporary after-image; the yellow type which is associated with a potential for temporary after-image; and the red type which is associated with permanent retinal damage.

The Applicant found that no red type glare from the project is predicted to vehicles using the roadways or nearby neighbors with the fixed-tilt style solar panels. The proposed fixed-tilt layout would increase both the green and yellow types of glare compared to the Certificate case. The Applicant also found that there would be a potential glare exposure to a short segment of Watkins

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telluride or copper indium gallium selenide). When the selected panel is a thin-film module, the panels typically contain only exceedingly small amounts of potentially hazardous materials, all of which are safely encased in polymer and tempered glass within an aluminum frame.

2. Bloomberg New Energy Finance compiles a tiered list of the leading solar panel manufacturers. As an initial step in the Applicant's due diligence process, this tiered list of solar panel suppliers determines the bankability, that is those manufacturers capable of obtaining bank financing and those that have provided solar panels to past significant solar generating facilities.

3. Amendment Application at Exhibit C.

Road around sunrise and sunset. The Applicant notes that during those times of the day drivers are accustomed to dealing with glare exposure from the sun. The Applicant states that implementation of its visual mitigation plan would effectively limit the amount of glare to drivers and residences within the project area. The Applicant considers the potential affect from glare to be minimal, which it defines as similar to glare from the existing environment such as ponds in fields and parked cars, if the Applicant's visual mitigation plan is implemented. Additionally, the Applicant intends to utilize solar panels that have an anti-reflective coating to further reduce potential glare from solar panels. Staff notes that aesthetic impact mitigation measures that include vegetative plantings may also further reduce potential impacts as part of a landscape and lighting plan.

Stormwater Drainage

Stormwater drainage and runoff pattern of the proposed fixed-tilt panel layout differ compared to the Certificate case. In order to be in compliance with the Ohio EPA construction stormwater permit and Licking County Soil Erosion and Stormwater Regulations, the Applicant has added three stormwater drainage basins to the project layout to handle the stormwater runoff. These stormwater control design measures are also in accordance with condition 22 of the Certificate.

Recommended Findings

Staff's review of the Amendment Application included consideration of the requirements listed in R.C. 4906.10. Based on Staff's review, the Amendment Application meets the necessary criteria for granting an amended certificate. Staff recommends that the Board approve the proposed amendment to the Certificate, provided that the following conditions are satisfied.

Conditions

(1) The Applicant shall continue to adhere to all conditions as certificated in Case No. 20-1757-EL-BGN as amended through this application.