

Staff Report of Investigation

Powell Creek Solar Project
Powell Creek Solar, LLC

Case No. 20-1084-EL-BGN

March 16, 2021



Power Siting
Board

Mike DeWine, Governor | **M. Beth Trombold**, Acting Chair

In the Matter of the Application of)
Powell Creek Solar, LLC for a Certificate) **Case No. 20-1084-EL-BGN**
of Environmental Compatibility and Public Need)

Staff Report of Investigation

Submitted to the
OHIO POWER SITING BOARD

BEFORE THE POWER SITING BOARD OF THE STATE OF OHIO

In the Matter of the Application of)
Powell Creek Solar, LLC for a Certificate) **Case No. 20-1084-EL-BGN**
of Environmental Compatibility and Public Need)

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

To the Honorable Power Siting Board:

In accordance with the Ohio Revised Code (R.C.) 4906.07(C) and rules of the Ohio Power Siting Board (Board), the staff of the Public Utilities Commission of Ohio (Staff) has completed its investigation in the above matter and submits its findings and recommendations in this Staff Report for consideration by the Board.

The findings and recommendations contained in this report are the result of Staff coordination with the following agencies that are members of the Board: Ohio Environmental Protection Agency, the Ohio Department of Health, the Ohio Development Services Agency, the Ohio Department of Natural Resources, and the Ohio Department of Agriculture. In addition, Staff coordinated with the Ohio Department of Transportation, the Ohio Historic Preservation Office, the U.S. Fish and Wildlife Service, the U.S. Army Corps of Engineers, and the U.S. Coast Guard.

In accordance with R.C. 4906.07(C) and 4906.12, copies of this Staff Report have been filed with the Docketing Division of the Public Utilities Commission of Ohio to be served upon the Applicant or its authorized representative, the parties of record, and pursuant to Ohio Administrative Code 4906-3-06, the main public libraries of the political subdivisions in the project area.

The Staff Report presents the results of Staff's investigation conducted in accordance with R.C. Chapter 4906 and the rules of the Board, and does not purport to reflect the views of the Board nor should any party to the instant proceeding consider the Board in any manner constrained by the findings and recommendations set forth herein.

Respectfully submitted,



Theresa White
Executive Director
Ohio Power Siting Board

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I. POWERS AND DUTIES

OHIO POWER SITING BOARD

The authority of the Ohio Power Siting Board (Board or OPSB) is prescribed by Ohio Revised Code (R.C.) Chapter 4906. R.C. 4906.03 authorizes the Board to issue certificates of environmental compatibility and public need for the construction, operation, and maintenance of major utility facilities defined in R.C. 4906.01. Included within this definition of major utility facilities are: electric generating plants and associated facilities designed for, or capable of, operation at 50 megawatts (MW) or more; electric transmission lines and associated facilities of a design capacity of 100 kilovolts (kV) or more; and gas pipelines greater than 500 feet in length and more than nine inches in outside diameter, and associated facilities, designed for transporting gas at a maximum allowable operating pressure in excess of 125 pounds per square inch. In addition, pursuant to R.C. 4906.20, the Board authority applies to economically significant wind farms, defined in R.C. 4906.13(A) as wind turbines and associated facilities with a single interconnection to the electrical grid and designed for, or capable of, operation at an aggregate capacity of five MW or greater but less than 50 MW. R.C. 4906.13 excludes from economically significant wind farms, one or more wind turbines and associated facilities that are primarily dedicated to providing electricity to a single customer at a single location and that are designed for, or capable of, operational at an aggregate capacity of less than 20 MW, measured at the customer's point of interconnection (POI) to the electrical grid.

Membership of the Board is specified in R.C. 4906.02(A). The voting members include: the Chairman of the Public Utilities Commission of Ohio (PUCO or Commission) who serves as Chairman of the Board; the directors of the Ohio Environmental Protection Agency (Ohio EPA), the Ohio Department of Health, the Ohio Development Services Agency, the Ohio Department of Agriculture, and the Ohio Department of Natural Resources (ODNR); and a member of the public, specified as an engineer, appointed by the Governor from a list of three nominees provided by the Ohio Consumers' Counsel. Ex-officio Board members include two members (with alternates) from each house of the Ohio General Assembly.

NATURE OF INVESTIGATION

The Board has promulgated rules and regulations, found in Ohio Administrative Code (Ohio Adm.Code) 4906:1-01 et seq., which establish application procedures for major utility facilities and economically significant wind farms.

Application Procedures

Any person that wishes to construct a major utility facility or economically significant wind farm in this state must first submit to the Board an application for a certificate of environmental compatibility and public need.¹ The application must include a description of the facility and its location, a summary of environmental studies, a statement explaining the need for the facility and how it fits into the Applicant's energy forecasts (for transmission projects), and any other information the Applicant or Board may consider relevant.²

1. R.C. 4906.04 and 4906.20.

2. R.C. 4906.06(A) and 4906.20(B)(1).

Within 60 days of receiving an application, the Chairman must determine whether the application is sufficiently complete to begin an investigation.³ If an application is considered complete, the Board or an administrative law judge will cause a public hearing to be held 60 to 90 days after the official filing date of the completed application.⁴ At the public hearing, any person may provide written or oral testimony and may be examined by the parties.⁵

Staff Investigation and Report

The Chairman will also cause each application to be investigated and a report published by the Board's Staff not less than 15 days prior to the public hearing.⁶ The report sets forth the nature of the investigation and contains the findings and conditions recommended by Staff.⁷ The Board's Staff, which consists of career professionals drawn from the staff of the PUCO and other member agencies of the Board, coordinates its investigation among the agencies represented on the Board and with other interested agencies such as the Ohio Department of Transportation (ODOT), the Ohio Historic Preservation Office (OHPO), and the U.S. Fish and Wildlife Service (USFWS).

The technical investigations and evaluations are conducted pursuant to Ohio Adm.Code 4906-1-01 et seq. The recommended findings resulting from Staff's investigation are described in the Staff Report pursuant to R.C. 4906.07(C). The report does not represent the views or opinions of the Board and is only one piece of evidence that the Board may consider when making its decision. Once published, the report becomes a part of the record, is served upon all parties to the proceeding and is made available to any person upon request.⁸ A record of the public hearings and all evidence, including the Staff Report, may be examined by the public at any time.⁹

Board Decision

The Board may approve, modify and approve, or deny an application for a certificate of environmental compatibility and public need.¹⁰ If the Board approves, or modifies and approves an application, it will issue a certificate subject to conditions. The certificate is also conditioned upon the facility being in compliance with applicable standards and rules adopted under the Ohio Revised Code.¹¹

Upon rendering its decision, the Board must issue an opinion stating its reasons for approving, modifying and approving, or denying an application for a certificate of environmental compatibility and public need.¹² A copy of the Board's decision and its opinion is memorialized upon the record and must be served upon all parties to the proceeding.¹³ Any party to the proceeding that believes its issues were not adequately addressed by the Board may submit within

3. Ohio Adm.Code 4906-3-06(A).

4. R.C. 4906.07(A) and Ohio Adm.Code 4906-3-08.

5. R.C. 4906.08(C).

6. R.C. 4906.07.

7. Ohio Adm.Code 4906-3-06(C).

8. R.C. 4906.07(C) and 4906.10.

9. R.C. 4906.09 and 4906.12.

10. R.C. 4906.10(A).

11. R.C. 4906.10.

12. R.C. 4906.11.

13. R.C. 4906.10(C).

30 days an application for rehearing.¹⁴ An entry on rehearing would then be issued by the Board within 30 days and may be appealed within 60 days to the Supreme Court of Ohio.¹⁵

CRITERIA

Staff developed the recommendations and conditions in this *Staff Report of Investigation* pursuant to the criteria set forth in R.C. 4906.10(A), which reads, in part:

The board shall not grant a certificate for the construction, operation, and maintenance of a major utility facility, either as proposed or as modified by the board, unless it finds and determines all of the following:

- (1) The basis of the need for the facility if the facility is an electric transmission line or gas pipeline;
- (2) The nature of the probable environmental impact;
- (3) That the facility represents the minimum adverse environmental impact, considering the state of available technology and the nature and economics of the various alternatives, and other pertinent considerations;
- (4) In the case of an electric transmission line or generating facility, that the facility is consistent with regional plans for expansion of the electric power grid of the electric systems serving this state and interconnected utility systems and that the facility will serve the interests of electric system economy and reliability;
- (5) That the facility will comply with Chapters 3704, 3734, and 6111 of the Revised Code and all rules and standards adopted under those chapters and under section 4561.32 of the Revised Code. In determining whether the facility will comply with all rules and standards adopted under section 4561.32 of the Revised Code, the board shall consult with the office of aviation of the division of multi-modal planning and programs of the department of transportation under section 4561.341 of the Revised Code;
- (6) That the facility will serve the public interest, convenience, and necessity;
- (7) In addition to the provisions contained in divisions (A)(1) to (6) of this section and rules adopted under those divisions, what its impact will be on the viability as agricultural land of any land in an existing agricultural district established under Chapter 929 of the Revised Code that is located within the site and alternative site of the proposed major utility facility. Rules adopted to evaluate impact under division (A)(7) of this section shall not require the compilation, creation, submission, or production of any information, document, or other data pertaining to land not located within the site and alternative site; and
- (8) That the facility incorporates maximum feasible water conservation practices as determined by the board, considering available technology and the nature and economics of the various alternatives.

¹⁴ R.C. 4903.10 and 4906.12.

¹⁵ R.C. 4903.11, 4903.12, and 4906.12.

II. APPLICATION

APPLICANT

Powell Creek Solar, LLC (Applicant) is a wholly owned subsidiary of Avangrid Renewables, LLC (Avangrid). Avangrid is a part of the Iberdrola S.A. Group. Avangrid will construct and operate the Powell Creek Solar Project. The Iberdrola S.A. Group has been a company for over a century and currently employs more than 28,000 people in nearly 40 countries. Avangrid is responsible for 60 renewable energy projects providing power for its utility-scale customers in the United States. Avangrid has over 6,000 MW of owned and controlled wind and solar power facilities in the United States, and is headquartered in Portland, Oregon.

HISTORY OF THE APPLICATION

On May 29, 2020, the Applicant filed a motion for waiver and request for approval to hold an alternative public information meeting. The motion was granted.

On July 13, 2020, the Applicant filed a pre-application notification letter regarding the project.

On July 29 and 30, 2020, the Applicant held public informational meetings for the project.

On October 7, 2020, the Applicant filed the Powell Creek Solar Project application as well as a motion for protective order and a motion for waiver of certain Board rules.

On October 29, 2020, the Applicant filed a supplement to the application – safety manuals.

On November 30, 2020, the Applicant filed a response to the first set of data requests received from Staff.

On December 4, 2020, the Applicant filed the correct Exhibit A to the application filed on October 7, 2020.

On December 7, 2020, the Executive Director of the OPSB issued a letter of compliance regarding the application to the Applicant.

On December 7, 2020, the Applicant filed a response to data requests received from Staff.

On January 25, 2021, the administrative law judge established a procedural schedule, granted in part, and denied in part the Applicant's motion for waivers, and granted the Applicant's motion for protective order as stated in Paragraphs 23 and 24.

On February 9, 2021, the Applicant filed a response and an updated response to data requests received from Staff.

On March 1, 2021, the Ohio Farm Bureau Federation filed a Motion to Intervene and Memorandum in Support.

On March 2, 2021, the Applicant filed a modification to the application to reduce the size of the project layout.

A local public hearing has been scheduled for March 31, 2021, at 6:00 p.m. The evidentiary hearing is scheduled to commence on April 13, 2021, at 10:00 a.m.

This summary of the history of the application does not include every filing in case number 20-1084-EL-BGN. The docketing record for this case, which lists all documents filed to date, can be found online at <http://dis.puc.state.oh.us>.

PROJECT DESCRIPTION

The Applicant intends to construct the Powell Creek Solar Project, a 150 MW solar-powered generating facility in Palmer and Liberty townships in Putnam County. The project would consist of large arrays of photovoltaic (PV) panels, commonly referred to as solar panels, ground-mounted on a tracking rack system. The project would occupy just under 1,000 acres within an approximate 2,013-acre project area comprised of private land secured by the Applicant through agreements with the landowners. The project would include associated facilities such as access roads, an operations and maintenance (O&M) building, pyranometers, underground electric collection lines, inverters and transformers, a collection substation, laydown yards, a 138 kV gen-tie electric transmission line, and a POI substation. The Applicant would construct and own all structures and equipment associated with the facility, except the POI switching station, which would be sold to AEP. The project would be secured by perimeter fencing, seven feet in height with a one-foot barbed wire strand and accessed through gated entrances. The Applicant would ensure that solar modules are setback a minimum of 100 feet from adjacent non-participating residences and at least 25 feet from public roads.

On March 2, 2021, the Applicant submitted a modification to the layout of the application, essentially removing a 29-acre block of panels from the original layout. This project description includes updated analysis based on that revised layout.

Solar Panels and Racking

The solar panels would be attached to metal racking. The racking would include steel posts driven approximately seven to 10 feet into the ground. PV modules have not yet been procured for the project. The Applicant anticipates that the facility would be comprised of 425 to 455-watt panels with an anti-reflective coating. Depending on the module selected, the facility would include a minimum of approximately 460,040 panels. The solar panel arrays would be grouped in large clusters that would be fenced in with gated entrances and electronic security systems. The highest point of each module would not exceed 9.5 feet. The project's arrays would be mounted on a single-axis tracking system that would rotate east-west to track the sun as it moves through the sky each day. The Applicant estimates the solar panel modules would occupy approximately 888 acres of the project area.

Collection System

The Applicant would install an underground collector system made up of a network of electric and communication lines that would transmit the electric power from the solar arrays to a central location. The Applicant proposes to install up to 13.1 miles of buried cable.

The underground lines would be installed by direct burial method which may include the use of a trencher. Installation of the cable would require an approximately 20-foot wide temporary work area along its entire length. The below grade portion of the collector system would be buried at least 36 inches.

The electricity from the solar panels would be generated in direct current (DC). DC power from the solar panels would be delivered to circuits, which would be routed through cable trays, then to combiner boxes. Power from the combiner boxes would be transmitted to groups of components, collectively called an inverter, which would include a DC-to-alternating current (AC) inverter, a step-up transformer that would increase the voltage to 34.5 kV, and a cabinet containing power control electronics. This would be housed in a power conversion station mounted on a steel skid set on a steel pile or concrete foundation. The facility would include approximately 32 inverters stations.

Collection and POI Substation and Transmission Line

The facility collection substation would be located along State Route (SR) 613 in the central -portion of the project. The collection substation would be 250 feet by 250 feet in size and enclosed by a seven-foot chain link fence with one-foot barbed wire strand. Additional features of the collection substation include dead-end support structures for collection lines, circuit breakers, surge arrestors, insulators, and a lightning mast. The tallest structure within the substation will be the lightning mast, which will be approximately 65 feet tall.

A 138 kV electric transmission line, approximately 1.6 miles in length, would connect the project substation to the POI substation. The transmission line would require a 150-foot right-of-way with pole structures at a maximum height of 100 feet. The 138 kV transmission line would traverse along SR 613 to the east, then north along the project border to the POI substation. The POI substation would tap into the existing East Leipsic-Richland 138 kV transmission line, owned by American Electric Power (AEP). The POI substation would be located along Township Road 12 in Liberty Township.

The substations and electric transmission line are denoted on the maps in this report.

Roads

The Applicant proposes to construct approximately 7.5 miles of new access roads for construction, operation, and maintenance of the solar project. The access roads would consist of aggregate gravel or crushed stone and be 30 feet wide. After construction, the finished access roads would not exceed 20 feet in width.

Construction Laydown Area

The Applicant proposes to use two construction laydown areas. One laydown area would be approximately 5.9 acres, located southwest of the SR 613-Road 13 intersection, and the other laydown area would be approximately 4.0 acres, located on the eastern side of Road 13. The laydown areas would be utilized for material and equipment storage, construction parking, and construction trailers. The laydown areas would be fenced-in and would be restored at the end of construction.

Pyranometers

The project would include between 15 and 30 pyranometers. These devices are used for measuring solar irradiance. They would be mounted to the solar array racking system.

O&M Building

The Applicant proposes to construct one O&M building. The building would occupy approximately 5.1 acres southwest of the SR 613 and Road 13 intersection. The O&M building

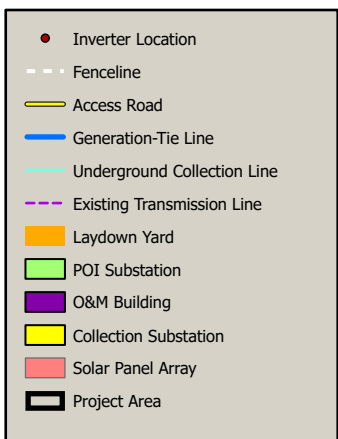
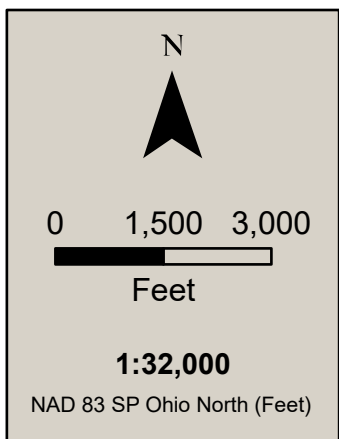
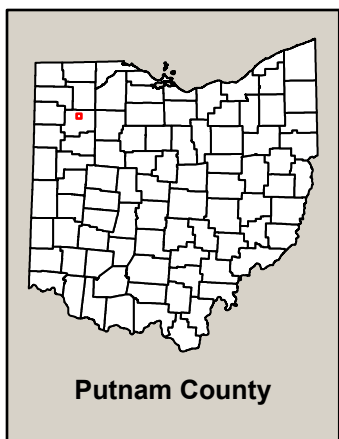
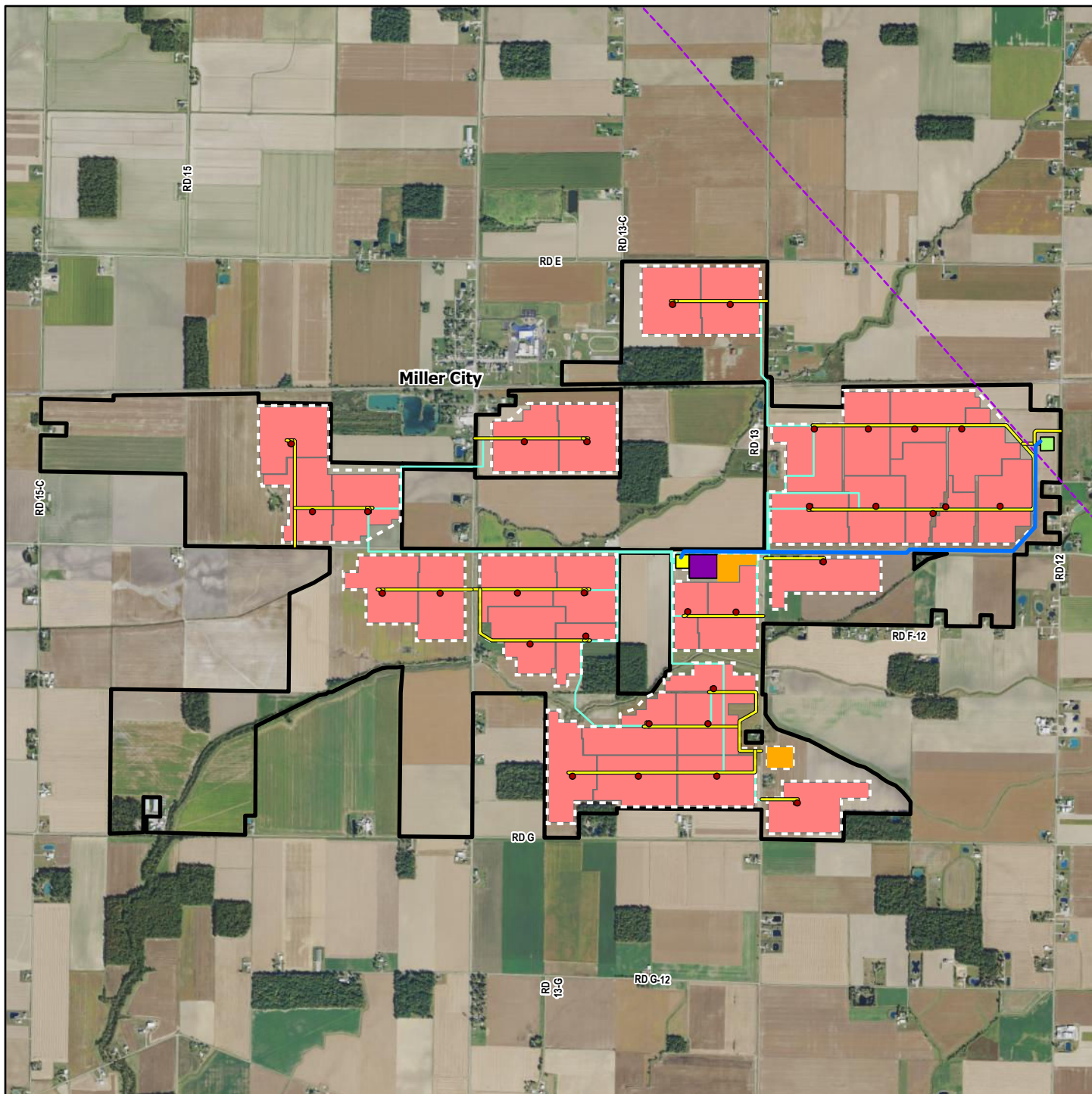
would be approximately 14 feet tall. The building would require a water supply and would have an onsite septic system. The O&M building would serve as a workspace for operations personnel.

Lighting

Lighting would be installed at the O&M building, substation, and at project access points. Temporary lighting would be used at the laydown area. The Applicant indicates that, to the extent practical, lighting would be oriented toward the interior of the solar project and away from roadways/residences. Lighting during operation would be downlit.

Project Schedule

The Applicant expects to finalize design of the project in the third quarter of 2021. Construction would start in the fourth quarter of 2021 and would last approximately 16 months. The facility is expected to be placed in service in the second quarter of 2023. The Applicant stated that delays to this timeline could impact project financing, including the Applicant's ability to procure PV modules and facility components. Further, delays may push the in-service date back, causing significant financial burden per the Applicant.



Overview Map

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Powell Creek Solar

Maps are presented solely for the purpose of providing a visual representation of the project in the staff report, and are not intended to modify the project as presented by the Applicant in its certified application and supplemental materials.

III. CONSIDERATIONS AND RECOMMENDED FINDINGS

In the Matter of the Application of Powell Creek Solar, LLC for a Certificate of Environmental Compatibility and Public Need, Staff submits the following considerations and recommended findings pursuant to R.C. 4906.07(C) and 4906.10(A).

Considerations for R.C. 4906.10(A)(1)

BASIS OF NEED

Pursuant to R.C. 4906.10(A)(1), the Board must determine the basis of the need for the facility only if the facility is an electric transmission line or gas pipeline. Therefore, Staff has found an analysis of R.C. 4906.10(A)(1) to be inapplicable to the facility in question.

Recommended Findings

Staff recommends that the Board find that the basis of need as specified under R.C. 4906.10(A)(1) is not applicable to this facility, as the facility is neither an electric transmission line nor a gas pipeline.

Considerations for R.C. 4906.10(A)(2)

NATURE OF PROBABLE ENVIRONMENTAL IMPACT

Pursuant to R.C. 4906.10(A)(2), the Board must determine the nature of the probable environmental impact of the proposed facility. Staff has found the following with regard to the nature of the probable environmental impact.

Socioeconomic Impacts

Regional Planning

Putnam County does not have a comprehensive plan, so the Applicant reviewed the only government planning document in the study area, the 2003 Henry County Comprehensive Plan. Henry County is adjacent to the project area to the north and mentions promoting economic development and maintaining existing agricultural resources. Staff agrees with the Applicant's analysis that the solar facility is not expected to conflict with the land use plan. The Henry County Comprehensive Plan also emphasizes the reduction of urban sprawl from the Toledo area, which is consistent with a solar project's centralized layout.

The project is consistent with agricultural industry support, in that the facility would provide supplemental income to farmers and the land could be returned to agricultural production upon decommissioning. Farming activities would require only minor modifications, aside from temporary disruptions that would occur during construction.

Additionally, the Applicant states that the proximity of the project directly adjacent to the Village of Miller City was an important component to the siting of the facility. As such, the Applicant asserts that the project would be able to assist the village to finance and construct a new wastewater treatment system through payments made by the Applicant.

Land Use

The predominant land use within the project area is agriculture, with some residential development and vacant parcels. The vast majority of land that would be disturbed by the facility (construction and operation of solar arrays, access roads, collector lines and substation, etc.) would occur on agricultural land. Of the 2,013 acres of leased land for the project, roughly 46 percent, or about 933 acres of land would be converted to solar and ancillary uses. The Village of Miller City is located to the north and west of the project. Significant impacts to residential, commercial, industrial, recreational, and institutional land uses are not anticipated, and surrounding agricultural land use would continue with minimal disruption. No residential structures would be removed as a result of this project, and one outbuilding may be removed, which the owner is aware of. The Applicant would ensure that solar modules are setback a minimum of 100 feet from adjacent non-participating residences and at least 25 feet from public roads.

Recreation

Construction and operation of the facility would not physically impact any recreational areas. The Applicant identified nine recreational areas within ten miles of the project area. The nearest recreational area to the project footprint is the Old Mill Stream Scenic Byway. This recreational facility is located about two miles away. All the other recreational facilities are located over three miles away and are at distances that exceed likely visibility. Staff's review of the Applicant's viewshed analysis determined that significant adverse aesthetic impacts are not likely.

Cultural Resources

The Applicant enlisted a consultant to gather background information and complete a cultural resources literature review for a two-mile radius around the project. This review consisted of a Phase 1A cultural resources records review which included data provided by the OHPO online geographic information system mapping, Ohio Historic Inventory, the Ohio Archaeological Inventory, and National Register of Historic Places (NRHP) files and also a Phase 1B field reconnaissance survey. The Applicant also obtained information on historic cemeteries from the Ohio Genealogical Society.

The Applicant determined, and the OHPO agreed, that in order to fully assess the potential for impacts to cultural resources, that the project undergo a pedestrian survey, site surface collection and shovel excavations. Further findings from field work performed by the Applicant were submitted to the OHPO in January 2021.

These Phase 1B results revealed 27 new archaeological sites. Of these archaeological sites, only one was deemed to be potentially eligible for the NRHP. If this site cannot be avoided during construction further coordination with the OHPO will be required pursuant to the terms of the Programmatic Agreement (PA) signed between the Applicant and OHPO. As such, the Applicant would work with the OHPO to develop a minimization and/or mitigation plan that would be further memorialized in a Memorandum of Understanding (MOU) to incorporate various mitigation strategies, as described in the programmatic agreement. These strategies typically include additional survey work, registration on the NRHP and funding for historic preservation organizations. In consideration of the programmatic agreement, Staff has determined that minimal adverse environmental impacts to cultural resources would be achieved.

The Applicant's historical survey identified five Ohio Historic Inventory (OHI) resources and five Ohio Genealogical Society (OGS) cemeteries. The OHPO determined the project will not have an adverse effect on historic structures.

Aesthetics

Aesthetic impacts and considerations are always measured against the surrounding land use features and potential viewers' subjective opinions. The rural nature of the project vicinity limits the number of potential viewers. Transportation corridors typically are smaller and much more lightly traveled, which reduces the number of viewing impacts. Existing woodlots are also able to offer additional natural screening. The project area predominantly consists of agricultural land. Traffic volume on roads throughout the project area is typically light, thus abating the potential number of viewers.

The solar panels would be installed no higher than 9.5 feet above ground level. Based on the results of the Applicant's five-mile visual resources report, the solar panels would not likely be visible at most locations beyond 1.5 miles of the perimeter of the project. Existing landscape features limit likely concentration of viewshed impacts to a half-mile.

Staff reviewed the Applicant's visual impact analysis, which includes proposed mitigation in the form of vegetative screening at selected areas around the project site. The Applicant's landscape mitigation plan proposes the installation of various planting modules along the facility fence line to soften viewshed impacts and to blend the facility into the existing vegetation. The Applicant's landscape mitigation plan would provide for the installation of numerous plant species that would

vary in height and variety, as determined by the current location of sensitive receptors (such as non-participating residential structures) that are adjacent to the proposed facility.

Staff recommends that the Applicant incorporate a landscape and lighting plan to reduce impacts in areas where an adjacent parcel contains a residence with a direct line of sight to the project's infrastructure. Staff recommends that aesthetic impact mitigation include native vegetative plantings, alternate fencing, good neighbor agreements, or other methods in consultation with affected landowners and subject to Staff review. With implementation of Staff's condition and the details provided in a PA executed by the Applicant and OHPO on December 8, 2020, the overall expected aesthetic impact would be minimal.

Economic Impact

The Applicant states that it would be responsible for the construction, operation, and maintenance of the proposed project. The Applicant is currently in the process of obtaining the necessary leases and easements for the portion of the project located within public road rights-of-way. These agreements include all ground lease agreements and purchase options. All other components of the facility will be located entirely on privately-owned land, and voluntary lease agreements between the Applicant and private landowners will accommodate the facility. The proposed facility and associated lease agreements are not expected to change the ownership status of private lands within the project area.

The Applicant chose to file its estimated capital and intangible costs, estimated operation and maintenance expenses, and estimated delay costs, under seal, and filed a motion for protective order to keep the information confidential. Similar requests have been common practice in many, but not all, solar project applications.

Total cost comparisons between the proposed facility and other comparable facilities are to be provided in the application. The Applicant referenced a 2019 study conducted by the U.S. Department of Energy's Lawrence Berkeley National Laboratory (Berkeley Laboratory) which states that the capacity-weighted average installed costs of solar projects was around \$1,640/kW in 2018 and that the Applicant's costs are below this range. Also, recent solar projects of comparable scale undertaken by Avangrid report similar capital costs. Staff verified the Applicant's assertion that the reported average cost of similar facilities is not substantially different from Applicant's estimated costs for the proposed facility and that the reported average cost of Avangrid's similar facilities is not substantially different from Applicant's estimated costs for the proposed facility.

O&M expense comparisons between the proposed facility and other comparable facilities are to be provided in the application. The Applicant referenced the same 2019 study by Berkeley Laboratory that stated that, on average, utility scale solar operations reported O&M costs totaling \$19/kW/year. Staff verified that the figures put forth by the Applicant were contained in the report and confirmed the Applicant's assertion that its O&M cost estimates were below this amount.

The Applicant provided its estimates of the cost of delays in permitting and construction of the proposed facility, although the estimated costs were filed under seal. The Applicant characterized permitting stage delay costs as being associated with the time value of delayed revenue payments. The Applicant also stated that delays could prevent the project from meeting federal Investment Tax Credit deadlines which could result in the loss of those benefits to the Applicant. Additionally,

delays could result in penalties to the extent that they would prevent the Applicant from meeting delivery deadlines under a potential power purchase agreement. The Applicant's characterization of its estimated costs of delays appears reasonable to Staff.

The Applicant retained the services of Environmental Design & Research (EDR) to report on the economic impact of the Powell Creek Solar Project.¹⁶ EDR used the National Renewable Energy Laboratory's (NREL) Jobs and Economic Development Impact (JEDI) model, the IMPLAN regional economic modeling system, as well as data from the Ohio Department of Taxation, to estimate the economic impact of the construction and operation of the solar project. Staff verified that the methodology of the JEDI and IMPLAN models were appropriate for this study and that the estimated impacts reported by the Applicant are reasonable.

In this model, "earnings" are comprised of direct (on-site) wages, indirect (supply-chain labor) wages, and induced (through spending by persons in first two categories). "Output" in this model refers to the value of goods and services produced by direct, indirect, and induced labor. Based on the results of the JEDI model analysis conducted by EDR, the Powell Creek Solar Project is expected to have the following impacts:

Jobs

- 680 construction related jobs for the state of Ohio
- Six long-term operational jobs for the state of Ohio

Earnings

- \$49.9 million in annual earnings during construction for the state of Ohio
- \$300,000 in annual earnings during facility operations for the state of Ohio

Output

- \$84.5 million in local output during construction for the state of Ohio
- \$900,000 in local annual output during facility operation for the state of Ohio.

The Powell Creek Solar Project would generate an estimated \$1.05 million annually for the Putnam County taxing districts. This estimate is based on a Payment in Lieu of Taxes (PILOT) plan in which Avangrid would pay \$7000/MW annually for a 150 MW facility. The Applicant states that this revenue would be distributed to county and other local taxing districts according to millage.

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's consultant conducted a glint and glare analysis to identify any potential impacts to aircraft approaching nearby airports, local roads, and nearby residents.¹⁷ The Applicant found that no glare from the project is predicted to vehicles using the roadways and adjacent residents

16. Environmental Design & Research is a multi-disciplinary environmental consulting and design firm that has conducted economic development analysis and studies the economic impact of energy projects at the national, state, and local level.

17. Application at Exhibit R.

(at both single or second story heights). The glint and glare analysis specifically analyzed the potential for impact to the runway approaches to the Hiltner, Ruhe's, Agner, and Putnam County Airports. The results of the Applicant's analysis also found that there are no predicted glare occurrences for approaches to any of the airport runways from the solar project. The project would conform to the FAA's interim policy for FAA review of Solar Energy System Projects on Federally Obligated Airports. Staff agrees with the study results. 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.

Decommissioning

The Applicant holds land rights to and estimates that the solar project can operate for 30 years or more. The Applicant has prepared a decommissioning plan and total decommissioning cost estimate of \$8,782,730.¹⁸ Staff has reviewed that decommissioning plan. According to the Applicant's plan, at the end of the useful life of the facility the solar project and at the termination of the leases, the Applicant will dismantle and remove solar project equipment components and the land will be returned to its current use as agricultural land. At the time of decommissioning, panels would be reused, recycled, or properly disposed in accord with regulations in effect at that time.

The Applicant has indicated it would, prior to the start of any decommissioning activities, obtain applicable federal, state, and local permits. The decommissioning sequence consists of, but is not limited to, reinforcing access roads, installing temporary construction fencing and best management practices to protect sensitive environmental resources, de-energizing solar arrays, dismantling panels and racking, removing inverters, removing electrical cables to a depth of at least 36 inches, removing access and internal roads, grading the site, removing the substation, removing overhead transmission lines and poles, de-compacting subsoils and revegetating disturbed land to pre-construction conditions, to the extent practicable. The Applicant may leave in place any electrical lines that will not impact the restored use and are at least 36 inches below-grade. At the request of the landowner, the Applicant would leave roads, foundations, buildings, structures, or other improvements to remain in place provided that does not violate any permits or legal requirements. Switchyard, interconnection facilities and other similar utility facilities not owned by the Applicant will be left in place. The Applicant will restore the land significantly to its original topography to allow for resumption of the pre-construction agricultural land use. The Applicant stated that it anticipates that the site would be decommissioned within six to 12 months. But the Applicant further indicated that site restoration activities are dependent on weather conditions which may requiring ongoing revegetation and restoration extended beyond that.

The Applicant states it will repurpose, salvage, recycle or haul offsite to a licensed solid waste disposal facility all solar components. Some of those solar components are anticipated to have a resale or salvage value and would be sold to offset the decommissioning cost. Those salvageable items typically are solar modules, tracking system, steel piles, inverters, and transformers. If solar modules are to be disposed, the Applicant intends to conduct the disposal in compliance with federal, state, and local laws and regulations. The Applicant is considering panels that have been certified to comply with the US EPA's toxicity characteristics leachate procedure (TCLP) test and meet U.S. EPA definition of non-hazardous waste.

18. Application at Exhibit P.

The Applicant will also provide for financial security to ensure that funds are available for decommissioning/land-restoration. The Applicant states that, prior to the commencement of construction of the project, it will post a performance bond or similar financial instrument in the amount of the net decommissioning cost. The initial net decommissioning cost of \$4,627,948 was calculated by an Ohio licensed engineering firm. Net decommissioning cost accounts for the resale or salvage value of the solar equipment. If that calculation shows that the net decommissioning cost for the project has increased, the Applicant will increase the amount of the performance bond accordingly.

Staff recommends that the updated decommissioning plan be provided to Staff at least thirty days prior to the preconstruction conference, and that it include: (a) a timeframe to periodically update the decommissioning cost estimates, and (b) that the decommissioning financial assurance mechanism include a performance bond where the company is the principal, the insurance company is the surety, and the Ohio Power Siting Board is the obligee.

Geologic Features

The Applicant conducted a geotechnical evaluation of the project area. This evaluation included a desktop study overview of the local geology, test pit excavations and soil borings.¹⁹

Surficial Geology

The project area lies within Wisconsinan-aged glacial features. Glacial drift throughout most of the study area is approximately 50 feet thick. The till consists of silts, sand, gravel, and boulders.

Bedrock Geology

Given the glacial drift thickness discussed above, no bedrock surface exposure occurs within the study area. The uppermost bedrock unit in the project area is the Salina Undifferentiated. This Silurian-aged unit consists of predominantly dolomite with shale, anhydrite/gypsum zones, and algal laminae.

Karst

The Applicant concludes karst features are not expected to exist in the project area. The geotechnical report confirms this assessment on the basis of researching U.S. Geological Survey (USGS) karst mapping resources, and due to the fact that no evidence of karst features was identified during the field investigation.²⁰ Thereby concluding karst concerns to be a low to negligible risk.

Staff referenced the ODNr's interactive Karst Viewer which indicates there are no known or suspected karst features within several miles of the project study area.²¹

Natural Resources – Oil and Gas/Mining

Figure 8-2 Geological Features Map of the application indicates there are no existing oil and gas wells in the project area. Upon Staff's review of the ODNr's oil and gas well viewer, no oil and gas wells or Class II injection wells exist in the project area.²² One abandoned well was located

19. Application at Exhibit H – Mott McDonald June 2020 Powell Creek Solar Geotechnical Report.

20. Application at page 48.

21. ODNr Interactive Karst Viewer, https://gis.ohiodnr.gov/website/dgs/karst_interactivemap/.

22. ODNr Interactive Oil & Gas Well Viewer <https://gis.ohiodnr.gov/MapView/?config=OilGasWells>.

approximately 1,000 feet east of the eastern most project area boundary. The records indicate this well has been plugged and abandoned.

Resources published by the ODNR indicate no active mining is occurring within the project area. No known abandoned underground mines exist.

Seismicity

Based on subsurface conditions, computed Seismic Site Class ratings, and review of the 2014 USGS National Seismic Hazards Map, the Applicant concludes a “low risk of significant seismic activity that could impact the proposed Facility.”

Based on ODNR records, Staff confirms no documented earthquake epicenters have occurred within several miles of the project study area.²³ The Ohio Geological Survey coordinates and maintains a 21 station Seismic Monitoring Network throughout the state.

The Applicant’s consultant has evaluated the exploration logs for the project area and determined that Boring B-16 represents the site average and thus was used to determine the seismic classification of the site as outlined by Chapter 20 of the ASCE Standard design method.²⁴

Geotechnical Engineering Report

A preliminary geotechnical assessment and the findings were provided with the application. Fourteen exploratory test pits were dug to approximately 10 feet in depth, and 31 borings 20 to 25 feet deep were made to evaluate soil, water, and geologic conditions. Neither ground water nor bedrock was encountered. Pile load testing was conducted at 27 locations throughout the project area. Soil resistivity testing was performed at 24 locations. This data was used to consider the subsurface soil properties and to ultimately provide construction recommendations as outlined in Section 9 of the Geotechnical Report.

Soils

Citing the U.S. Department of Agriculture (USDA) Web Soil Survey, the application indicates that 69 percent of the project area consists of the Paulding Clay, 14 percent is comprised of the Toledo silty clay, seven percent Roselm silt loam and six percent by the Latty silty clay. Soils within the project area are mostly classified as Class D which have high runoff and low permeability.

The soils of the project area are poorly drained due to the clay content. The USDA Web Soil Survey indicates the project area soils are not highly erodible. Table 4-2 of the Ecological Assessment shows no slopes exceeding six percent, with the vast majority of the project area with less than two percent slope.²⁵ The Applicant expects minimal grading will be necessary to construct the site.

The Geotechnical Report indicates the soil is considered to have medium corrosivity. This in addition to adfreeze stress will be considered when developing a final engineering design.

23. ODNR Interactive Earthquake Epicenter Viewer,
<https://gis.ohiodnr.gov/MapView/?config=Earthquakes>.

24. Application at Exhibit H, page 14.

25. Application at Exhibit J – page 4-4

Conclusion

Staff recommends that the final detailed engineering drawings of the final project design shall account for geological features and include the identity of the registered professional engineer(s), structural engineer(s), or engineering firm(s), licensed to practice engineering in the state of Ohio who reviewed and approved the designs.

Based on the data provided within the application submittal to date, Staff review of information presented by the ODNR and the Ohio EPA, and implementation of the recommended conditions, Staff finds that no particular geological features exist that would suggest the construction and/or operation of the proposed solar project and the geology within the project area are incompatible.

Ecological Impacts

Public and Private Water Supply

There are five water wells within the project area. The Applicant does not anticipate adverse impacts to the nearest water wells because the Applicant will coordinate with landowners to identify well locations and implement avoidance and mitigation measures. The structural support pile driving would occur at depths of 15 feet or less. The private wells within the project area are approximately 55 to 225 feet below ground and within a limestone aquifer. The Applicant identified that for those wells with known testing, the yield from these water wells was 12 to 30 gallons per minute.²⁶ Construction and solar equipment is anticipated to be significantly set back from residences and hence water well locations. Staff recommends that at least 30 days prior to the preconstruction conference, the Applicant provide the status (i.e. avoidance, mitigation measures, or capping) of each water well in the project area. Also, Staff recommends that the Applicant indicate whether the nearest solar components to each uncapped well within the project area meets or exceeds any applicable minimum isolation distances outlined in Ohio Adm.Code 3701-28-7.

There are no public drinking water source protection areas located within the project area; Staff reviewed Ohio EPA records and confirmed this. The Applicant will implement a Stormwater Pollution Prevention Plan (SWPPP) as part of the Ohio EPA construction storm water general permit during construction to minimize and prevent potential discharges to surface waters in the project area and surrounding area. Staff finds that accidental discharge of petroleum or other chemicals during construction have the potential to impact groundwater. Such discharges could occur in the form of leaks from fuel and hydraulic systems, or as more substantial spills that could occur during refueling of vehicles or other accidents. The Applicant would develop and implement a spill prevention plan or spill prevention, control, and countermeasure plan (SPCC). to avoid, minimize, and mitigate the unlikely release of hazardous substances or other contaminants. Staff also recommends that the environmental specialist be familiar with water quality project issues that may be encountered during project construction.

Surface Waters

The Applicant delineated 10 streams within the project area, including six perennial streams, two intermittent streams, and two ephemeral streams. Access roads would result in impacts to two

26. Application at page 47.

perennial streams and one ephemeral stream. Permanent impacts to these streams are anticipated to be approximately 0.02 acres.

The Applicant delineated 18 wetlands within the project area, including two Category 3 wetlands, 10 Category 2 wetlands, and five Category 1 wetlands.²⁷ No impacts are proposed to the Category 3 wetland. Based on the preliminary facility layout, less than 0.01 acre of one Category 1 wetland would be permanently impacted.

Surface water crossing associated with collection lines would be accomplished using horizontal directional drilling (HDD) techniques. HDD is typically preferred to open-cut trenching when crossing surface water resources, as impacts can be avoided in most cases. However, the HDD process includes the risk of a frac-out. A frac-out occurs when the drilling lubricant, typically water or a non-toxic, fine clay bentonite slurry, is forced through cracks in bedrock and/or surface soils. The Applicant included a frac-out contingency plan as part of the application. The Applicant has also committed to have an environmental specialist on site during construction activities where HDD activities may impact surface waters. The environmental specialist would have authority to stop HDD activities to ensure that any impacts related to a frac-out are addressed. Because impacts to surface water resources would be below the 0.1 acre threshold for a preconstruction notice, the project would self-certify under the U.S. Army Corps of Engineers Nationwide Permit 12 (NWP 12). Through siting the majority of infrastructure in upland areas and compliance with the NWP 12, Staff concludes that proposed surface water impacts would be minimized.

The Applicant states that the boundaries of streams and wetlands within and immediately adjacent to the construction limits of disturbance would be demarcated with highly visible flagging, staking, or fencing prior to construction. These sensitive areas will also be marked on final construction documents and those working on-site would be provided with training to understand the significance of the types of flagging used, and the importance of staying within defined limits.

Specifics about how surface waters would be further protected from indirect construction stormwater impacts using erosion and sedimentation controls would be outlined in the Applicant's SWPPP. The Applicant would obtain an Ohio National Pollutant Discharge Elimination System (NPDES) construction stormwater general permit through the Ohio EPA prior to the start of construction. Staff recommends the Applicant apply Ohio EPA published Guidance on Post-construction Storm Water Control for Solar Panel Arrays to project construction and operation. No project infrastructure is proposed within the 100-year floodplain.

Threatened and Endangered Species

The Applicant requested information from the ODNR and the USFWS regarding state and federal listed threatened or endangered plant and animal species. Staff gathered additional information through field assessments and review of published ecological information. The following table provides the results of the information requests, field assessments, and document review.

27. Wetlands falling within the purview of the Clean Water Act are regulated within Ohio by R.C. 6111, et seq. and Ohio Adm.Code 3745-1-50, et seq. Ohio Adm.Code 3745-1-54 establishes wetland categories.

MAMMALS

Common Name	Scientific Name	Federal Status	State Status	Presence in Project Area
Indiana bat	<i>Myotis sodalis</i>	Endangered	Endangered	Historical range includes the project area. Presence within project area has been documented.

MAMMALS

Common Name	Common Name	Common Name	Common Name	Common Name
northern long-eared bat	<i>Myotis septentrionalis</i>	Threatened	Endangered	Historical range includes the project area. Presence within project area has been documented.

MUSSELS

Common Name	Scientific Name	Federal Status	State Status	Presence in Project Area
clubshell	<i>Pleurobema clava</i>	Endangered	Endangered	Historical range includes the project area. A mussel reconnaissance was conducted within the project area. No mussels were observed within the project area.
rayed bean	<i>Villosa fabalis</i>	Endangered	Endangered	Historical range includes the project area. A mussel reconnaissance was conducted within the project area. No mussels were observed within the project area.
rabbitsfoot	<i>Quadrula cylindrica</i>	Endangered	Endangered	Historical range includes the project area. A mussel reconnaissance was conducted within the project area. No mussels were observed within the project area.
white catspaw	<i>Epioblasma obliquata perobliqua</i>	N/A	Endangered	Historical range includes the project area. A mussel reconnaissance was conducted within the project area. No mussels were observed within the project area.
wartyback	<i>Quadrula nodulata</i>	N/A	Threatened	Historical range includes the project area. A mussel reconnaissance was conducted within the project area. No mussels were observed within the project area.
purple lilliput	<i>Toxolasma lividus</i>	N/A	Threatened	Historical range includes the project area. A mussel reconnaissance was conducted within the project area. No mussels were observed within the project area.

FISH

Common Name	Scientific Name	Federal Status	State Status	Presence in Project Area
pugnose minnow	<i>Opsopoeodus emiliae</i>	N/A	Endangered	Historical range includes the project area.

FISH				
Common Name	Scientific Name	Federal Status	State Status	Presence in Project Area
greater redhorse	<i>Moxostoma valenciennesi</i>	N/A	Threatened	Historical range includes the project area.

BIRDS				
Common Name	Scientific Name	Federal Status	State Status	Presence in Project Area
northern harrier	<i>Circus cyaneus</i>	N/A	Endangered	Historical range includes the project area.

The Applicant did not identify any listed plant or animal species during field surveys. Further, the ODNR and the USFWS did not identify any concerns regarding impacts to listed plant species. In the event that the Applicant encounters listed plant or animal species during construction, Staff recommends that the Applicant contact Staff, the ODNR, and the USFWS, as applicable. Staff also recommends that if the Applicant encounters any listed plant or animal species prior to construction, the Applicant include the location and how impacts would be avoided in mapping based on final engineering drawings to be provided to Staff prior to the preconstruction conference.

The project area is within the range of state and federal endangered Indiana bat (*Myotis sodalis*) and the state and federal threatened northern long-eared bat (*Myotis septentrionalis*). As tree roosting species in the summer months, the habitat of these species may be impacted by the project. In order to avoid impacts to the Indiana bat and northern long-eared bat, Staff recommends the Applicant adhere to seasonal tree cutting dates of October 1 through March 31 for all trees three inches or greater in diameter, unless coordination efforts with the ODNR and the USFWS reflects a different course of action. The project would not impact any bat hibernacula.

The project is within the range of the state endangered northern harrier (*Circus cyaneus*). Northern harriers breed and hunt in large wet meadows and dry grasslands. The ODNR recommends that construction be avoided in this habitat during the species' nesting period of May 15 through August 1. Land throughout the majority of the project area is currently in active agriculture use, however, due to the potential of the landscape to change over time, Staff recommends that construction in northern harrier preferred nesting habitat types be avoided during the species' nesting period of May 15 through August 1. Further mapping of any habitat areas should be provided to the construction contractor along with instructions to avoid these areas during the restricted dates unless coordination with the ODNR allows a different course of action.

The project is within the range of the pugnose minnow (*Opsopoeodus emiliae*), a state endangered fish, and the greater redhorse (*Moxostoma valenciennesi*), a state threatened fish. The ODNR recommends no in-water work in perennial streams from April 15 through June 30 to reduce impacts to indigenous aquatic species and their habitat. Staff recommends adherence to these restrictions unless further coordination with the ODNR allows a different course of action.

Impacts to other listed species would be avoided as no impacts to suitable habitats are proposed for the project.

Vegetation

The following table reflects the different vegetative communities present in the project area and associated impact for the facility.

VEGETATIVE COMMUNITIES WITHIN PROJECT AREA	
Vegetation Community Type	Total (Acres)
Grassland	1.4
Wetlands	5.8
Forestland	36.4
Developed	77.4
Agricultural Lands	1,892.4
Total	2013.4

Permanent vegetative impacts would occur primarily within agricultural lands. Forestland impact is estimated to approximately 0.02 acres.

Staff suggests, but is not recommending conditioning approval upon, the implementation and maintenance of native pollinator-friendly plantings in selected locations along the outside border of the solar fields and incorporate plantings of legumes and wildflowers in areas between the solar panels. Plantings should be selected in consultation with the Ohio Pollinator Habitat Initiative. These features would enhance the visual appeal of the project, enrich local wildlife habitat, and benefit the local farming community. Pollinator plantings would: help reduce erosion; reduce fertilizer, herbicide, and pesticide use; discourage invasive species; and improve water quality. The project would implement permanent vegetative cover, such as native grass seed mix under the solar array. This would represent a reduced environmental impact when compared to the current land use of agricultural plant production. This is due to the elimination of frequent tilling, fertilizer and pesticide application, and increased plant diversity. To further assure that these benefits would be realized, Staff recommends that the Applicant take steps to prevent establishment and/or further propagation of noxious weeds identified in Ohio Adm.Code Chapter 901:5-37 during implementation of any pollinator-friendly plantings.

Public Services, Facilities, and Safety

Wind Velocity

The Applicant has indicated that the facility would be designed and installed to withstand typical high-wind occurrences. Staff has found that components of the proposed facility are generally not susceptible to damage from high winds except for tornado-force winds, because generally the panels and racking systems proposed for the facility have wind speed design load ratings inherent in their design. The racking system can withstand wind speeds over 100 miles per hour and includes a stowing feature to stabilize the solar panel arrays at various wind conditions. Stow features also can tilt panels to a certain angle to reduce wind loading on the solar panels during high wind speeds events. During the detailed engineering phase, the Applicant would minimize any potential damage from high wind velocities by proper structural design of the project support equipment at sufficient depths based on the site-specific soil conditions. Specifically, the Applicant has indicated that during the detailed engineering phase it would perform additional calculations

and evaluations of the recommendations for galvanization and proper embedment depths for the solar project's support piles.²⁸

Roads and Bridges

The Applicant has yet to finalize its delivery route, although it is expected that deliveries to the project site would be by way of State Routes 108 and 613. From there, the main transportation routes to access the project site would be local roads. County designation for the local roads to be used are 12, 13, 15-C, and G.

Conventional heavy equipment which does not require special permitting would make up the majority of construction traffic. The electrical transformer and switchgear are likely to be overweight and would require special permitting and route coordination for delivery. The Applicant stated that an increase in truck traffic would be anticipated during construction for the purpose of project area equipment access and equipment and material deliveries but does not anticipate significant changes to traffic patterns. Post construction and during operation of the solar facility, the Applicant does not anticipate any additional traffic for the project beyond routine maintenance. No road closures are to be expected. The Applicant expects to enter into a Road Use Maintenance Agreement with the Putnam County Engineer.

Once the transportation permitting process has been completed, Staff recommends that the Applicant develop a final transportation management plan which would include any county -required road use maintenance agreements. Any damaged public roads and bridges would be repaired promptly to their previous or better condition by the Applicant under the guidance of the appropriate regulatory authority. Any temporary improvements would be removed unless the appropriate regulatory authority requests that they remain in place.

Noise

Noise impacts from construction activities would include site clearing, installation of mechanical and electrical equipment, and commissioning and testing of equipment. Many of the construction activities would generate significant noise levels during the 16 months of construction. However, the adverse impact of construction noise would be temporary and intermittent, would occur away from most residential structures, and would be limited to daytime working hours. The Applicant would use mitigation practices such as limiting construction activities to daylight hours and establishing a complaint resolution process.

Operational noise impacts for a solar generation facility would be relatively minor and occur only during the day. Operational noise sources include inverters and tracking motors. The step-up transformer at the new substation and the inverters may operate at night but the noise impact would also be relatively minor.

The Applicant conducted an ambient noise level study in order to understand the existing noise levels near the proposed facility. Noise impacts to non-participating receptors were modeled using the proposed inverter and transformer models. The model showed that operational noise impacts would be less than ambient noise levels. No non-participating receptors were modeled to receive noise impacts greater than the daytime ambient noise level plus five dBA. Therefore, the project would be expected to have minimal adverse noise impacts on the adjacent community. If an

28. Application page 49 and Exhibit H, *Geotechnical Report* dated June 2020 at page 12.

inverter model different than the proposed inverter model is chosen, the Applicant would submit a noise report confirming that no non-participating receptors were modeled to receive noise impacts greater than the daytime ambient noise level plus five dBA or conduct an operation noise test to confirm noise impacts are less than daytime ambient noise level plus five dBA.

Recommended Findings

Staff recommends that the Board find that the Applicant has determined the nature of the probable environmental impact for the proposed facility, and therefore complies with the requirements specified in R.C. 4906.10(A)(2), provided that any certificate issued by the Board for the proposed facility include the conditions specified in the section of this *Staff Report of Investigation* entitled Recommended Conditions of Certificate.

Considerations for R.C. 4906.10(A)(3)

MINIMUM ADVERSE ENVIRONMENTAL IMPACT

Pursuant to R.C. 4906.10(A)(3), the proposed facility must represent the minimum adverse environmental impact, considering the state of available technology and the nature and economics of the various alternatives, along with other pertinent considerations.

Site Selection

The Applicant's site selection process focused on the following criteria: availability of solar resources, ease of access to the bulk power transmission system, highly compatible land use characteristics, sufficiently low population density, few environmentally sensitive areas, and positive feedback from landowners and public officials. In preparation of the application, the Applicant engaged local officials and the public.

Minimizing Impacts

The proposed facility would have an overall positive impact on the state and local economy due to the increase in construction spending, wages, purchasing of goods and services, annual lease payments to the local landowners, increased tax revenues and PILOT revenue.

The geology of the project site in Putnam County does not present conditions that would limit or negatively impact the construction and future operation of the proposed facility. Staff recommends that the final detailed engineering drawings of the final project design shall account for geological features.

No significant impacts are proposed to wetlands and surface waters. Impacts to any state or federal listed species can be avoided by following seasonal restrictions for construction in certain habitat types, as detailed by the USFWS and the ODNR. The Applicant did not identify any listed plant or animal species during field surveys. While the project is within the range of several endangered species, impacts would be avoided on suitable habitats.

Noise impacts are expected to be limited to construction activities. The adverse impact of construction noise would be temporary and intermittent and would occur away from most residential structures. Staff recommends that the Applicant limit the hours of construction to address potential construction and operational related concerns from any nearby residents. No non-participating receptors were modeled to receive noise impacts greater than the daytime ambient noise level. If the Applicant chooses an inverter or substation transformer with a higher sound power output than the models used in the noise model, the Applicant shall show that sound levels will not exceed the daytime ambient level. Further, the Applicant has developed a complaint resolution plan which would be implemented throughout construction and operation.

During the construction period, local, state, and county roads would experience a temporary increase in truck traffic due to deliveries of equipment and materials. Due to the location of the project, the Applicant anticipates that most components for the entire project would be delivered by using flatbed or tractor-trailer vehicles and multi-axle dump trucks. The transportation management plan would be finalized once the engineering layout is determined. A final delivery route plan would be developed through discussions with local officials. The Applicant intends to enter into a road use agreement with the county engineer.

Due to the low profile of the project, combined with existing vegetation in the area, the visual impacts would be most prominent to landowners in the immediate vicinity of the infrastructure itself. In order to reduce impacts in areas where an adjacent, non-participating parcel contains a residence with a direct line of sight to the project, Staff has recommended a condition requiring a final landscape and lighting plan that addresses the potential impacts of the facility.

The Applicant has committed to take steps in order to address such potential impacts to farmland, including repairing all drainage tiles damaged during construction and restoring temporarily impacted land to its original use. The Applicant has consulted landowners and county records, and used engineering, such as GIS data, to determine the locations of drain tile mains. In order to avoid impacts to drain tiles, the Applicant stated that it would locate drain tiles as accurately as possible prior to construction. The Applicant has also committed to promptly repair any drain tile found to be damaged by the project during the operational life of the project. Following decommissioning of the facility, land can be restored for agricultural use.

The Applicant has prepared a draft plan to decommission the solar facility. The Applicant would provide for financial security to ensure that funds are available for decommissioning/land restoration. The Applicant would restore the land significantly to its original topography to allow for resumption of agricultural use. Staff has recommended a condition requiring that the draft decommissioning plan be updated to include improved financial assurance and a decommissioning cost estimate, among other things.

Conclusion

Staff concludes that the proposed project would result in both temporary and permanent impacts to the project and surrounding areas. The project is unlikely to pose a significant adverse impact to existing land use, cultural resources, recreational resources, or wildlife. With Staff's recommended conditions to further mitigate potential impacts, Staff concludes that the project represents the minimum adverse environmental impact.

Recommended Findings

Staff recommends that the Board find that the proposed facility represents the minimum adverse environmental impact, and therefore complies with the requirements specified in R.C. 4906.10(A)(3), provided that any certificate issued by the Board for the proposed facility include the conditions specified in the section of this *Staff Report of Investigation* entitled Recommended Conditions of Certificate.

CONSIDERATIONS FOR R.C. 4906.10(A)(4)

ELECTRIC GRID

Pursuant to R.C. 4906.10(A)(4), the Board must determine that the proposed electric facilities are consistent with regional plans for expansion of the electric power grid of the electric systems serving this state and interconnected utility systems, and that the facilities will serve the interests of electric system economy and reliability. The purpose of this section of the report is to evaluate the impact of integrating the proposed facility into the bulk power system (BPS).

The Applicant proposes to construct a solar-powered electric generation facility, capable of producing 150 MW. The proposed facility would interconnect from the collector substation to a newly proposed gen-tie connection to the proposed POI 138 kV switching station, which would be owned and operated by AEP. Energy would be injected to the BPS at the POI via AEP's existing East Leipsic-Richland 138 kV transmission line.

NERC Planning Criteria

The North American Electric Reliability Corporation (NERC) is responsible for the development and enforcement of the federal government's approved reliability standards, which are applicable to all owners, operators, and users of the BPS. As an owner, operator, and/or user of the BPS, the Applicant is subject to compliance with various NERC reliability standards. NERC reliability standards are included as part of the system evaluations conducted by PJM Interconnection, LLC (PJM).²⁹

PJM Interconnection

The Applicant submitted a generation interconnection request for the proposed facility to PJM on February 14, 2019. PJM assigned the project queue position AE2-072.³⁰ The Applicant requested an energy injection of 150 MW, of which 90 MW could be available in the PJM capacity market. The capacity market ensures the adequate availability of necessary generation resources can be called upon to meet current and future demand. PJM has completed the feasibility and system impact studies (SIS) and is processing the facilities study.^{31, 32}

PJM Network Impacts

PJM analyzed the proposed facility interconnected to the BPS. Summer peak power flow models were used to evaluate the regional reliability impacts.

29. PJM Interconnection, LLC is the regional transmission organization charged with planning for upgrades and administering the generation queue for the regional transmission system in Ohio. Generators wanting to interconnect to the bulk electric transmission system located in the PJM control area are required to submit an interconnection application for review of system impacts. The interconnection process provides for the construction of expansions and upgrades of the PJM transmission system, as needed to maintain compliance with reliability criteria with the addition of generation in its footprint.

30. PJM Interconnection, "New Services Queue," Queue ID: AE2-072, accessed February 24, 2021, <https://pjm.com/planning/services-requests/interconnection-queues.aspx>.

31. PJM Interconnection, "New Services Queue," Feasibility Study for Queue ID: AE2-072, accessed February 24, 2021, <https://pjm.com/planning/services-requests/interconnection-queues.aspx>.

32. PJM Interconnection, "New Services Queue," System Impact Study for Queue ID: AE2-072, accessed February 24, 2021, <https://pjm.com/planning/services-requests/interconnection-queues.aspx>.

Queue ID AE2-072 was modeled with a 2022 summer peak case. The SIS revealed that, at an output of 150 MW, there would be reliability criteria violations on the BPS under certain multiple contingencies, as described below with accompanying proposed remedies.

The below chart displays the results of the PJM SIS for the PJM regional footprint.

PJM REGIONAL SYSTEM IMPACTS (Summer Peak)	
Generator Deliverability - System Normal & Single Contingency Outage	
<i>Plant Output: Capacity Level – 90 MW</i>	No problems identified
Category C and D - Multiple Contingency Outages	
<i>Plant Output: 150 MW</i>	<ol style="list-style-type: none"> 1. Richland-Napoleon 138 kV: Stuck breaker <ol style="list-style-type: none"> a. Loading increases from 99.23% to 100.0%. 2. Davis Besse-Hayes 354 kV: Stuck breaker <ol style="list-style-type: none"> a. Loading increases from 85.54% to 101.06%.

System Reinforcements

PJM requires mitigation of contingencies that cause reliability criteria violations which are initially caused by the addition of the Applicant’s project. Upgrade s1697 and n6184.1 are required to resolve multiple contingency outages on American Transmission Systems, Inc. (ATSI) Richland -Napoleon 138 kV and Davis Besse-Hayes 354 kV transmission lines.

The stuck breaker on the Richland-Napoleon 138 kV transmission line (s1697) was approved by the Board in case number 19-1765-EL-BLN and placed in-service on June 6, 2020.³³ The Applicant is not responsible for any of the costs related to this upgrade. PJM network upgrade n6184.1 is driven by a prior queue ID for a different contingency. The Applicant is currently not assessed any cost allocation for this upgrade.

Contribution to Previously Identified Overloads - Network Impacts

PJM studied overloading where the proposed facility may affect earlier projects in the PJM Queue. The results revealed overloads on ATSI’s Fostoria Central-South Berwick 345 kV and Black River-US Steel-Lorain 138 kV transmission lines. The SIS would require ATSI to complete PJM network upgrades n6476 and n6185.³⁴ The below chart displays the network upgrades for contribution to previously identified overloads.

33. Napoleon-Richland-Stryker 138 kV Transmission Line Open Arm Project, Case No. 19-1765-EL-BLN, Staff Report of Investigation, February 21, 2020.

34. PJM Interconnection, “New Services Queue,” System Impact Study for Queue ID: AE2-072, accessed February 24, 2021, <https://pjm.com/planning/services-requests/interconnection-queues.aspx>.

CONTRIBUTION TO PREVIOUSLY IDENTIFIED OVERLOADS		
Upgrade ID	Network Upgrade	Cost Allocation
n6476	Sag study on Fostoria Central-South Berwick 345 kV transmission line	\$0
n6185	Construct a new 138 kV transmission line from Black River to Astor substation.	\$2.324 million

Potential Congestion due to Local Energy Deliverability- Energy Delivery Impacts

PJM studied the delivery of the energy portion. Network upgrades under this section would allow for the delivery of energy with operational restrictions. The upgrades to mitigate any future operational restrictions are not required for the facility to be operational and are at the discretion of the Applicant. The results identified ATSI's Davis Besse-Hayes 354 kV, Ridgeville-Ridgeville 138 kV, and Richland-Ridgeville 138 kV transmission lines overload under certain contingencies.³⁵

Short Circuit Analysis

The short circuit analysis study, which is part of the System Impact Study, evaluates the interrupting capabilities of circuit breakers that would be impacted by the proposed generation addition. The results identified no circuit breaker problems.

Recommended Findings

Staff recommends that the Board find that the proposed facility is consistent with regional plans for expansion of the electric power grid of the electric systems serving this state and interconnected utility systems, and that the facility would serve the interests of electric system economy and reliability. Therefore, Staff recommends that the Board find that the facility complies with the requirements specified in R.C. 4906.10(A)(4), provided that any certificate issued by the Board for the proposed facilities include the conditions specified in the section of this *Staff Report of Investigation* entitled Recommended Conditions of Certificate.

35. PJM Interconnection, "New Services Queue," System Impact Study for Queue ID: AE2-072, accessed February 24, 2021, <https://pjm.com/planning/services-requests/interconnection-queues.aspx>.

Considerations for R.C. 4906.10(A)(5)

AIR, WATER, SOLID WASTE, AND AVIATION

Pursuant to R.C. 4906.10(A)(5), the facility must comply with Ohio law regarding air and water pollution control, withdrawal of waters of the state, solid and hazardous wastes, and air navigation.

Air

Air quality permits are not required for construction or operation of the proposed facility. However, fugitive dust rules adopted under R.C. Chapter 3704 may be applicable to the construction of the proposed facility. The Applicant would control temporary and localized fugitive dust by using best management practices such as using calcium carbonate or water to wet soil to minimize dust. These methods of dust control are typically used to comply with fugitive dust rules.

This project would not include any stationary sources of air emissions and, therefore, would not require air pollution control equipment.

Water

The Applicant anticipates obtaining environmental permits if and where necessary. The Applicant would mitigate potential water quality impacts associated with aquatic discharges by obtaining NPDES construction storm water general permit (OHC00005) from the Ohio EPA with submittal of a notice of intent for coverage under that permit. The construction storm water general permit also requires development of an SWPPP to direct the implementation of construction related storm water best management practices (BMP) for soil erosion control.

The Applicant would obtain, if required, the following permits:

- The U.S. Army Corps of Engineers Section 404 or nationwide permit for stream crossings and wetland impacts.
- Ohio EPA Water Quality Certification under Section 401 of the Clean Water Act.
- Ohio Isolated Wetland Permit

The Applicant would develop and implement a spill prevention plan or SPCC plan. to avoid, minimize, and mitigate the unlikely release of hazardous substances or other contaminants.

With these measures, construction and operation of this facility would comply with requirements of R.C. Chapter 6111, and the rules and laws adopted under that chapter.

Solid Waste

Debris generated from construction activities would include items such as plastic, wood, cardboard, metal packing/packaging materials, construction scrap, and general refuse. The Applicant stated that all construction-related debris would be disposed of at an authorized solid waste disposal facility.

Operation of the project could generate small amounts of solid waste, such as wood, cardboard, metal packing/packaging materials, used oil, general refuse, universal waste, and used antifreeze, which would be disposed of in accordance with federal, state, and local requirements.

The Applicant's solid waste disposal plans would comply with solid waste disposal requirements set forth in R.C. Chapter 3734.

Aviation

The height of the tallest above ground structures would be the overhead transmission line support structures which would be approximately 95 feet tall. That height is under the height requirement from the Federal Aviation Administration (FAA), pursuant to 14 CFR Part 77.9(a), for filing a Form 7460-1.

According to the Applicant, the closest public use airport is the Ruhe Airport (R47) which is owned by Bob Ruhe Agricultural Service and is approximately two miles east of the project area.³⁶ The Applicant also identified the nearby Agner and Hiltner airstrips which are no longer in use. Staff confirmed through the FAA, that the closest public-use airports are the Ruhe's and Putnam County Airport (OWX) which are between two and seven miles from the proposed solar project collection substation. The Applicant performed a glint and glare analysis for various points around the solar facility and for the runway approaches to Ruhe, Agner, Hiltner, and Putnam County airports. The results of the Applicant's analysis found that there is no predicted glare occurrences for approaches to any of those airports' runways from the solar project. The Applicant also found that with the results from that analysis the project would conform to the FAA's interim policy for FAA review of Solar Energy System Projects on Federally Obligated Airports.

In accordance with R.C. 4906.10(A)(5), Staff contacted the ODOT Office of Aviation during the review of this application in order to coordinate review of potential impacts of the facility on local airports. As of the date of this filing, no such concerns have been identified.

Recommended Findings

Staff recommends that the Board find that the proposed facility complies with the requirements specified in R.C. 4906.10(A)(5), provided that any certificate issued by the Board for the proposed facility include the conditions specified in the section of this *Staff Report of Investigation* entitled Recommended Conditions of Certificate.

36. Application at page 40.

Considerations for R.C. 4906.10(A)(6)

PUBLIC INTEREST, CONVENIENCE, AND NECESSITY

Pursuant to R.C. 4906.10(A)(6), the Board must determine that the facility will serve the public interest, convenience, and necessity.

Safety

The Applicant stated that it would use reliable and certified equipment compliant with applicable Underwriters Laboratories, Institute of Electrical and Electronics Engineers, National Electrical Code, National Electrical Safety Code, and American National Standards Institute standards. The Applicant intends that components would also adhere to national building and electrical codes for safe and reliable operation.

The Applicant intends to use warning signs, fencing, and gates to restrict access to the potential hazards within the solar project area. Additionally, the Applicant intends to design its facility with 100-foot setbacks to residences, 100-foot setbacks to the fenceline from non-participating structures, and 25-foot setbacks to the fenceline and edge of public roads, and a 50-foot setback to interstate or state highway.³⁷

The Applicant stated that it intends to restrict public access to the facility by enclosing the project area with a seven-foot tall chain-link fence. Prior to construction, the Applicant also intends to develop and implement an emergency action/response plan and further consultation with potentially affected emergency response personnel. The Applicant intends to coordinate with Putnam County Emergency Management Services, including local fire and emergency management officials, to discuss safety plans and training. The Applicant stated it would submit the finalized plan to the Board prior to construction.

Electromagnetic Fields

Electric transmission lines, when energized, generate electromagnetic fields (EMF). Laboratory studies have failed to establish a strong correlation between exposure to EMF and effects on human health. There have been concerns, however, that EMF may have impacts on human health.

The 138 kV transmission line is not within 100 feet of an occupied residence, therefore calculation of the production of EMF during operation of the proposed transmission line is not warranted per Ohio Adm.Code 4906-5-07(A)(2).

The Applicant states that the transmission facilities would be installed according to the requirements of the National Electric Safety Code.

Public Interaction and Participation

The Applicant hosted virtual and telephonic public informational meetings for this project. The Applicant also maintains a project website. The Applicant has drafted a complaint resolution plan to handle complaints during the construction and operation of the facility. Staff recommends that a final version of this plan be filed on the docket no later than 30 days prior to the start of construction. The Applicant has committed to notify affected property owners and tenants about the project and the complaint resolution plan, no later than seven days prior to the start of

37. Application at page 74 and Figure 04-1.

construction. Staff recommends that a similar notice be mailed to these same individuals at least seven days prior to the start of facility operation. Staff also recommends that the Applicant submit to Staff a quarterly complaint summary report during construction and the first five years of operation of the facility.

As of February 17, 2021, one public comment has been filed in the record for this case. The commenter expressed concerns regarding the economics of renewable energy. Public comments are made available for Board members and the public to view online in the case record at <http://dis.puc.state.oh.us>.

The Administrative Law Judge scheduled a public hearing and an evidentiary hearing for this proceeding. The hearings will be held using remote access technology that facilitates participation by telephone and/or live video on the internet. The public hearing will be held on March 31, 2021, beginning at 6 p.m. The evidentiary hearing is scheduled for April 13, 2021, at 10:00 a.m.

Recommended Findings

Staff recommends that the Board find that the proposed facility would serve the public interest, convenience, and necessity, and therefore complies with the requirements specified in R.C. 4906.10(A)(6), provided that any certificate issued by the Board for the proposed facility include the conditions specified in the section of this *Staff Report of Investigation* entitled Recommended Conditions of Certificate.

Considerations for R.C. 4906.10(A)(7)

AGRICULTURAL DISTRICTS AND AGRICULTURAL LAND

Pursuant to R.C. 4906.10(A)(7), the Board must determine the facility's impact on the agricultural viability of any land in an existing agricultural district within the project area of the proposed facility. The agricultural district program was established under R.C. Chapter 929. Agricultural district land is exempt from sewer, water, or electrical service tax assessments.

Agricultural land can be classified as an agricultural district through an application and approval process that is administered through local county auditors' offices. Eligible land must be devoted exclusively to agricultural production or be qualified for compensation under a land conservation program for the preceding three calendar years. Furthermore, eligible land must be at least 10 acres in size or produce a minimum average gross annual income of \$2,500.

Approximately 227 acres of agricultural district land would be disturbed by the proposed project. Of those 227 acres, approximately 219 acres would be permanently altered. The construction of the proposed facility would result in the loss of approximately 962 acres of agricultural lands. However, the repurposed land could be restored for agricultural use when the project is decommissioned.

The construction and operation of the proposed facility would disturb the existing soil and could lead to broken drainage tiles. A drain tile system consists of laterals, which are branches off a main, and main lines. Main lines can allow water to flow into or out of one parcel to another. The locating and avoiding of damaging drain tile mains can help prevent the pooling of water on project parcels and adjacent parcels.

When landowners lay down or repair drain tiles, they often keep records of the location of the drain tiles. The Applicant has consulted landowners, county and township officials, and a local drain tile repair company. The tile repair company would work with landowners to map drain tiles on private and leased property, and both the Applicant and the tile repair contractor would coordinate with local officials to obtain drain tile locations within public right-of-way. The Applicant has supplied a Drain Tile Maintenance Plan with its OPSB application (Exhibit W). This report discusses repair and mitigation details as well as the plan to develop a map of all known drain tile locations. The Applicant has committed to promptly repair any drain tile found to be damaged by the project during the operational life of the project.

One agricultural structure may be removed. The Applicant is coordinating with the landowner should an agreement be necessary. According to the Applicant, little to no impact to irrigation systems is expected.

The Applicant has committed to take steps to address potential impacts to farmland, including repairing all drainage tiles damaged during construction and restoring temporarily impacted land to its original use. Excavated topsoil would be separated during construction and returned as topsoil after construction. Restored topsoil would be de-compacted and seeded after construction.

Recommended Findings

Staff recommends that the Board find that the impact of the proposed facility on the viability of existing agricultural land in an agricultural district has been determined, and therefore complies

with the requirements specified in R.C. 4906.10(A)(7), provided that any certificate issued by the Board for the proposed facility include the conditions specified in the section of this *Staff Report of Investigation* entitled Recommended Conditions of Certificate.

Considerations for R.C. 4906.10(A)(8)

WATER CONSERVATION PRACTICE

Pursuant to R.C. 4906.10(A)(8), the proposed facility must incorporate maximum feasible water conservation practices, considering available technology and the nature and economics of the various alternatives.

Construction of the proposed facility would not require the use of significant amounts of water. Water may be utilized for dust suppression and control on construction access roads or unpaved transportation routes as needed.

Operation of the proposed facility would not require the use of significant amounts of water. The O&M building would obtain water through the Village of Miller City water supply system, which the Applicant indicates has sufficient capacity to serve. The O&M building would have water consumption and wastewater discharge comparable to a small office building. To conserve water, the Applicant has stated that it would install and maintain modern, efficient water fixtures. The O&M building would either be served by a septic system or tie into the Village of Miller City's sewage system. The project would use limited quantities of water for occasional cleaning of panels as needed.

Recommended Findings

The Staff recommends that the Board find that the proposed facility would incorporate maximum feasible water conservation practices, and therefore complies with the requirements specified in R.C. 4906.10(A)(8), provided that any certificate issued by the Board for the proposed facility include the conditions specified in the section of this *Staff Report of Investigation* entitled Recommended Conditions of Certificate.

IV. RECOMMENDED CONDITIONS OF CERTIFICATE

Following a review of the application filed by Powell Creek Solar, LLC, and the record compiled to date in this proceeding, Staff recommends that a number of conditions become part of any certificate issued for the proposed facility. These recommended conditions may be modified as a result of public or other input received subsequent to the issuance of this report. At this time, Staff recommends the following conditions to ensure conformance with the proposed plans and procedures as outlined in the case record to date, and to ensure compliance with all conditions listed in this Staff Report:

- (1) The Applicant shall install the facility, utilize equipment and construction practices, and implement mitigation measures as described in the application and as modified and/or clarified in supplemental filings, replies to data requests, and recommendations in this *Staff Report of Investigation*.
- (2) Within 60 days after the commencement of commercial operation, the Applicant shall submit to Staff a copy of the as-built specifications for the entire facility. If the Applicant demonstrates that good cause prevents it from submitting a copy of the as-built specifications for the entire facility within 60 days after commencement of commercial operation, it may request an extension of time for the filing of such as-built specifications. The Applicant shall use reasonable efforts to provide as-built drawings in both hard copy and as geographically referenced electronic data.
- (3) The certificate shall become invalid if the Applicant has not commenced a continuous course of construction of the proposed facility within five years of the date of journalization of the certificate unless the Board grants a waiver or extension of time.
- (4) As the information becomes known, the Applicant shall file in this proceeding the date on which construction will begin, the date on which construction was completed, and the date on which the facility begins commercial operation.
- (5) Prior to the commencement of construction activities in areas that require permits or authorizations by federal or state laws and regulations, the Applicant shall obtain and comply with such permits or authorizations. The Applicant shall provide copies of permits and authorizations, including all supporting documentation, to Staff within seven days of issuance or receipt by the Applicant. The Applicant shall provide a schedule of construction activities and acquisition of corresponding permits for each activity at the preconstruction conference.
- (6) The certificate authority provided in this case shall not exempt the facility from any other applicable and lawful local, state, or federal rules or regulations nor be used to affect the exercise of discretion of any other local, state, or federal permitting or licensing authority with regard to areas subject to their supervision or control.
- (7) The Applicant shall conduct a preconstruction conference prior to the commencement of any construction activities. Staff, the Applicant, and representatives of the primary contractor and all subcontractors for the project shall attend the preconstruction conference. The conference shall include a presentation of the measures to be taken by the Applicant and contractors to ensure compliance with all conditions of the certificate,

and discussion of the procedures for on-site investigations by Staff during construction. Prior to the conference, the Applicant shall provide a proposed conference agenda for Staff review. Separate preconstruction conferences may be held for the different phases of civil construction and equipment installation. At least 30 days prior to each preconstruction conference, the Applicant shall submit to Staff, for review and acceptance, one set of detailed engineering drawings of the final project design for that phase of construction and mapping in the form of PDF, which the Applicant shall also file on the docket of this case, and geographically referenced data (such as shapefiles or KMZ files) based on final engineering drawings to confirm that the final design is in conformance with the certificate. Mapping shall include the limits of disturbance, permanent and temporary infrastructure locations, areas of vegetation removal and vegetative restoration as applicable, and specifically denote any adjustments made from the siting detailed in the application. The detailed engineering drawings of the final project design for each phase of construction shall account for geological features and include the identity of the registered professional engineer(s), structural engineer(s), or engineering firm(s), licensed to practice engineering in the state of Ohio who reviewed and approved the designs. All applicable geotechnical study results shall be included in the submission of the final project design to Staff.

- (8) At least 30 days prior to the preconstruction conference, the Applicant shall provide Staff, for review and acceptance, the final geotechnical engineering report.
- (9) At least 30 days prior to the start of construction, the Applicant shall file a copy of the final complaint resolution plan on the public docket. At least seven days prior to the start of construction and at least seven days prior to the start of facility operations, the Applicant shall notify via mail affected property owners and tenants including those individuals who were provided notice of the public informational meeting, residences located within one mile of the project area, parties to this case, county commissioners, township trustees, emergency responders, airports, schools, and libraries, as well as anyone who has requested updates regarding the project. These notices shall provide information about the project, including contact information and a copy of the complaint resolution plan. The start of construction notice shall include written confirmation that the Applicant has complied with all preconstruction-related conditions of the certificate, as well as a timeline for construction and restoration activities. The start of facility operations notice shall include written confirmation that the Applicant has complied with all construction-related conditions of the certificate, as well as a timeline for the start of operations. The Applicant shall file a copy of these notices on the public docket. During the construction and operation of the facility, the Applicant shall submit to Staff a complaint summary report by the fifteenth day of April, July, October, and January of each year through the first five years of operation. The report shall include a list of all complaints received through the Applicant's complaint resolution process, a description of the actions taken toward the resolution of each complaint, and a status update if the complaint has yet to be resolved.
- (10) The Applicant shall not commence any construction of the facility until it has executed an Interconnection Service Agreement and Interconnection Construction Service Agreement with PJM Interconnection, which includes construction, operation, and maintenance of system upgrades necessary to integrate the proposed generating facility

into the regional transmission system reliably and safely. The Applicant shall docket in the case record a letter stating that the Agreement has been signed or a copy of the executed Interconnection Service Agreement and Interconnection Construction Service Agreement.

- (11) The facility shall be operated in such a way as to assure that no more than 150 megawatts would at any time be injected into the Bulk Power System.
- (12) Prior to commencement of construction, the Applicant shall prepare a landscape and lighting plan in consultation with a landscape architect licensed by the Ohio Landscape Architects Board that addresses the aesthetic and lighting impacts of the facility with an emphasis on any locations where an adjacent non-participating parcel contains a residence with a direct line of sight to the project area and also include a plan describing the methods to be used for fence repair. The plan shall include measures such as fencing, vegetative screening or good neighbor agreements. Unless alternative mitigation is agreed upon with the owner of any such adjacent, non-participating parcel containing a residence with a direct line of sight to the fence of the facility, the plan shall provide for the planting of vegetative screening designed by the landscape architect to enhance the view from the residence and be in harmony with the existing vegetation and viewshed in the area. The Applicant shall maintain vegetative screening for the life of the facility and the Applicant shall replace any failed plantings so that, after five years, at least 90 percent of the vegetation has survived. The Applicant shall maintain all fencing along the perimeter of the project in good repair for the term of the project and shall promptly repair any damage as needed. Lights shall be motion-activated and designed to narrowly focus light inward toward the facility, such as being downward-facing and/or fitted with side shields. The Applicant shall provide the plan to Staff for review and confirmation that it complies with this condition.
- (13) General construction activities shall be limited to the hours of 7:00 a.m. to 7:00 p.m., or until dusk when sunset occurs after 7:00 p.m. Impact pile driving shall be limited to the hours between 9:00 a.m. and 7:00 p.m. or until dusk when sunset occurs after 7:00 p.m. Impact pile driving may occur between 7:00 a.m. and 9:00 a.m. if the noise impact at non-participating receptors is not greater than daytime ambient Leq plus 10 dBA. If impact pile driving is required between 7:00 a.m. and 9:00 a.m., the Applicant shall install a noise monitor in a representative location to catalog that this threshold is not being exceeded. Hoe ram operations, if required, shall be limited to the hours between 10:00 a.m. and 4:00 p.m., Monday through Friday. Construction activities that do not involve noise increases above ambient levels at sensitive receptors are permitted outside of daylight hours when necessary. The Applicant shall notify property owners or affected tenants within the meaning of Ohio Adm.Code 4906-3-03(B)(2) of upcoming construction activities including potential for nighttime construction.
- (14) If the inverters or substation transformer chosen for the project have a higher sound power output than the models used in the noise model, the Applicant shall show that sound levels will not exceed the daytime ambient level plus five dBA at any non-participating sensitive receptor and will be submitted at least 30 days prior to construction. If noise data is not available from the inverter or transformer manufacturer, an operational noise test may be performed to comply with this condition. The test must be performed during the on a sunny day in the months of May-August, at a distance equal

to the minimum distance from an inverter to a non-participating residence. If the test shows the operational noise level is greater than project area ambient Leq level plus five dBA additional noise mitigation will be required. This condition is complied with if the test shows the operational noise level is less than project area ambient Leq level plus five dBA.

- (15) The Applicant shall avoid, where possible, or minimize to the extent practicable, any damage to functioning field tile drainage systems and soils resulting from the construction, operation, and/or maintenance of the facility in agricultural areas. Damaged field tile systems shall be promptly repaired to at least original conditions or modern equivalent at the Applicant's expense. However, if the affected landowner agrees to not having the field tile system repaired, they may do so only if the field tile systems of adjacent landowners are unaffected by the non-repair of the landowner's field tile system.
- (16) At least 30 days prior to the preconstruction conference, the Applicant shall submit an updated decommissioning plan that includes a timeframe to periodically update the decommissioning cost estimates and that the decommissioning financial assurance mechanism include a performance bond where the company is the principal, the insurance company is the surety, and the Ohio Power Siting Board is the obligee.
- (17) The Applicant shall adhere to seasonal cutting dates of October 1 through March 31 for the removal of trees three inches or greater in diameter to avoid impacts to Indiana bats and northern long-eared bats, unless coordination with the Ohio Department of Natural Resources (ODNR) and the U.S. Fish and Wildlife Service (USFWS) allows a different course of action.
- (18) The Applicant shall have an environmental specialist on site during construction activities that may affect sensitive areas, to be mutually agreed upon by the Applicant and Staff. Sensitive areas which would be impacted during construction shall be identified on a map provided to Staff, and shall include wetlands, streams, and locations of threatened or endangered species. The environmental specialist shall be familiar with water quality protection issues and potential threatened or endangered species of plants and animals that may be encountered during project construction. The environmental specialist mutually agreed upon by Staff and the Applicant shall be authorized to report any issues simultaneously to Staff and the Applicant. To allow time for the Applicant and Staff to respond to any reported issues, the environmental specialist shall have authority to stop construction activities for up to 48 hours if the construction activities are creating unforeseen environmental impacts in the sensitive areas identified on the map.
- (19) The Applicant shall contact Staff, the ODNR, and the USFWS within 24 hours if state or federal listed species are encountered during construction activities. Construction activities that could adversely impact the identified plants or animals shall be immediately halted until an appropriate course of action has been agreed upon by the Applicant, Staff, and the appropriate agencies.

- (20) Construction in northern harrier preferred nesting habitat types shall be avoided during the species' nesting period of May 15 through August 1 unless coordination by the Applicant with the ODNR allows a different course of action during that period. Absent coordination with the ODNR that allows a different course of action, mapping of these habitat areas shall be provided to the construction contractor along with instructions to avoid these areas during the restricted dates.
- (21) The Applicant shall conduct no in-water work in perennial streams from April 15 through June 30 to reduce impacts to indigenous aquatic species and their habitat, unless coordination efforts with the Ohio Department of Natural Resources allows a different course of action.
- (22) The Applicant shall construct the facility in a manner that incorporates post construction stormwater management under OHC00005 (Part III.G.2.e, pp. 19-27) in accordance with the Ohio Environmental Protection Agency's Guidance on Post-Construction Storm Water Controls for Solar Panel Arrays.
- (23) The Applicant take steps to prevent establishment and/or further propagation of noxious weeds identified in Ohio Adm.Code Chapter 901:5-37 during implementation of any pollinator-friendly plantings.
- (24) If the Applicant encounters any new listed plant or animal species or suitable habitat of these species prior to construction, the Applicant shall include the location in the final engineering drawings and associated mapping, as required in condition 7. The Applicant shall avoid impacts to these species and explain how impacts would be avoided during construction.
- (25) Prior to commencement of construction activities that require transportation permits, the Applicant shall obtain all such permits. The Applicant shall coordinate with the appropriate authority regarding any temporary road closures, road use agreements, driveway permits, lane closures, road access restrictions, and traffic control necessary for construction and operation of the proposed facility. Coordination shall include, but not be limited to, any affected railroads, the county engineer, the Ohio Department of Transportation, local law enforcement, and health and safety officials. The Applicant shall detail this coordination as part of a final transportation management plan submitted to Staff prior to the preconstruction conference for review and confirmation by Staff that it complies with this condition.
- (26) Prior to the pre-construction conference, the Applicant shall submit to Staff a complete route evaluation study. This study shall include but not be limited to the present condition of roadways, culverts, and bridges, weight restrictions, overhead obstructions, railroads, and any potential impacts these findings may produce.
- (27) At least 30 days prior to the preconstruction conference, the Applicant shall provide the status (i.e. avoidance, mitigation measures, or capping) of each water well within the project area. The Applicant shall indicate to Staff whether the nearest solar components to each uncapped well within the project area meets or exceeds any applicable minimum isolation distances outlined in Ohio Adm.Code 3701-28-7.



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Case No(s). 20-1084-EL-BGN

Summary: Staff Report of Investigation electronically filed by Mr. Matt Butler on behalf of Staff of OPSB