Bright Mountain Solar Project

Case No. 2022-00274

TAB 12

TAB 12 SITE ASSESSMENT REPORT

KRS 278.706(2)(l) *A site assessment report as specified in KRS 278.708. The applicant may submit and the board may accept documentation of compliance with the National Environmental Policy Act (NEPA) rather than a site assessment report.*

KRS 278.708(3) *A completed site assessment report shall include:*

a) *A description of the proposed facility that shall include a proposed site development plan that describes:*
    1. *Surrounding land uses for residential, commercial, agricultural, and recreational purposes;*
    2. *The legal boundaries of the proposed site;*
    3. *Proposed access control to the site;*
    4. *The location of facility buildings, transmission lines, and other structures;*
    5. *Location and use of access ways, internal roads, and railways;*
    6. *Existing or proposed utilities to service the facility;*
    7. *Compliance with applicable setback requirements as provided under KRS 278.704(2), (3), (4), or (5); and*
    8. *Evaluation of the noise levels expected to be produced by the facility;*
b) *An evaluation of the compatibility of the facility with scenic surroundings;*
c) *The potential changes in property values and land use resulting from the siting, construction, and operation of the proposed facility for property owners adjacent to the facility;*
d) *Evaluation of anticipated peak and average noise levels associated with the facility's construction and operation at the property boundary; and*
e) *The impact of the facility's operation on road and rail traffic to and within the facility, including anticipated levels of fugitive dust created by the traffic and any anticipated degradation of roads and lands in the vicinity of the facility.*

KRS 278.708(4) *The site assessment report shall also suggest any mitigating measures to be implemented by the applicant to minimize or avoid adverse effects identified in the site assessment report.*

A Site Assessment Report (SAR) was developed by the Applicant, with assistance from EDR, in response to the requirements of KRS 278.706(2)(l) and KRS 278.708, and is included in this Tab as Attachment J.

Bright Mountain Solar Project
Application Tab 12
Case No. 2022-00274

Attachment J – Site Assessment Report

Site Assessment Report

Bright Mountain Solar Project

Perry County, Kentucky

Case No. 2022-00274

Prepared for:

Bright Mountain Solar, LLC
A subsidiary of Avangrid Renewables, LLC
2701 NW Vaughn Street, Suite 300
Portland, OR 97210
Contact: Andrew House, Senior Business Developer
Tel: 419-619-8873

Prepared by:

Environmental Design & Research,
Landscape Architecture, Engineering & Environmental Services, D.P.C.
5 E Long St, Suite 700
Columbus, OH 43125
www.edrdpc.com

September 2023

TABLE OF CONTENTS

LIST OF EXHIBITS

1.0 INTRODUCTION

Kentucky Revised Statute (KRS) 278.706 requires that any person seeking a certificate from the Kentucky State Board on Electric Generation and Transmission Siting (the Board) of the Kentucky Public Service Commission (KY PSC) to construct a merchant electric generating facility provide certain information to the KY PSC. Pursuant to KRS 278.706(2)(l), these requirements include the preparation and submission of a Site Assessment Report. As provided in KRS 278.708, the Site Assessment Report is to include:

(a) A description of the proposed facility that shall include a proposed site development plan that describes:
   1. *Surrounding land uses for residential, commercial, agricultural, and recreational purposes;*
   2. *The legal boundaries of the proposed site;*
   3. *Proposed access control to the site;*
   4. *The location of facility buildings, transmission lines, and other structures;*
   5. *Location and use of access ways, internal roads, and railways;*
   6. *Existing or proposed utilities to service the facility;*
   7. *Compliance with applicable setback requirements as provided under KRS 278.704(2), (3), (4), or (5); and*
   8. *Evaluation of the noise levels expected to be produced by the facility;*

(b) An evaluation of the compatibility of the facility with scenic surroundings;

(c) The potential changes in property values and land use resulting from the siting, construction, and operation of the proposed facility for property owners adjacent to the facility;

(d) Evaluation of anticipated peak and average noise levels associated with the facility's construction and operation at the property boundary; and

(e) The impact of the facility's operation on road and rail traffic to and within the facility, including anticipated levels of fugitive dust created by the traffic and any anticipated degradation of roads and lands in the vicinity of the facility.

Additionally, pursuant to KRS 278.708(4), the Site Assessment Report shall suggest any mitigating measures to be implemented by the Applicant to minimize or avoid adverse effects identified in the Site Assessment Report.

This Site Assessment Report was developed by the Applicant, with assistance from Environmental Design & Research, Landscape Architecture, Engineering & Environmental Services, D.P.C. (EDR), to be responsive to the requirements of KRS 278.706(2)(l) and KRS 278.708.

2.0 DESCRIPTION OF PROPOSED FACILITY

KRS 278.708(3)(a) *A description of the proposed facility that shall include a proposed site development plan that describes:*

1. *Surrounding land uses for residential, commercial, agricultural, and recreational purposes;*
2. *The legal boundaries of the proposed site;*
3. *Proposed access control to the site;*
4. *The location of facility buildings, transmission lines, and other structures;*
5. *Location and use of access ways, internal roads, and railways;*
6. *Existing or proposed utilities to service the facility;*
7. *Compliance with applicable setback requirements as provided under KRS 278.704(2), (3), (4), or (5); and*
8. *Evaluation of the noise levels expected to be produced by the facility.*

Bright Mountain Solar, LLC (Bright Mountain or Applicant) is proposing to develop the Bright Mountain Solar Project (Project), which includes an up to 80-megawatt (MW) alternating current, solar-powered electric generation facility (Facility) and an associated 69 kV, approximately 4-mile long, nonregulated electric transmission line (the Transmission Line), in Perry County, Kentucky. The Facility will be located on the site of a reclaimed coal surface mine, approximately 2.5 miles west of Hazard, Kentucky. The area leased for the Facility includes approximately 805 acres of private land (Facility Area). The footprint of the Facility will be approximately 360 acres, within the Facility Area. The Transmission Line will be approximately 4 miles in total length, generally traversing through vacant timberland from the Facility's collection substation to Kentucky Power Company's existing Bonnyman Substation, located approximately 2.5 miles east of the proposed Facility.

The Facility will use approximately 200,000 ground-mounted photovoltaic (PV) modules, commonly known as solar panels, to provide renewable energy to the Kentucky bulk power transmission system. Solar panels will be affixed to a metal racking system mounted on piles that will be installed into the ground in arrays. Arrays will be grouped into separate, contiguous clusters, and all of the array clusters will be within a contiguous agricultural-style fence which will be gated for equipment security and public safety. Facility components will be accessed through a system of internal gravel-surfaced roads, approximately 14 feet in finished width.

There are two PV array layout alternatives currently under consideration for the Facility, one of which consists of a single-axis, tracking-style racking system (tracking layout), while the other consists of a fixed-tilt racking system (fixed-tilt layout). The footprint of PV panels is similar for the two layouts. For the fixed-tilt layout, the arrays will be oriented in an east-west direction and tilted at approximately 28 degrees to face southward toward the sun. For the tracking layout, arrays will

be oriented in a north-south direction with panels facing east at sunrise, rotating throughout the day, and facing west at sunset. At night, the panels will assume a resting angle.

Specific responses to items 1 through 8 of KRS 278.708(3)(a) are presented in the following sections.

2.1 Surrounding land uses for residential, commercial, agricultural, and recreational purposes

Land use surrounding the Facility Area predominantly consists of vacant timberland and farmland, as well as industrial mining and scattered residences. The surrounding land uses are further discussed in the Real Estate Adjacent Property Value Impact Report, prepared by CohnReznick and provided as Exhibit A of this Site Assessment Report. The report concludes that the Facility is a locally compatible use.

2.2 The legal boundaries of the proposed site

Legal descriptions of the parcels which will comprise the Facility Area are provided in Exhibit B of this Site Assessment Report.

2.3 Proposed access control to the site

Public access to the Facility will be restricted by an agricultural-style perimeter fence. A private road to the west of the intersection of Jarets Branch Road and Couch Branch Road will be used for access to the Facility location. Entry to the Facility for authorized personnel will be through locked gates. Internal graveled roadways, approximately 14 feet in width, will provide access to Facility components. The preliminary layout of the Facility is provided in Exhibit C of this Site Assessment Report.

2.4 The location of facility buildings, transmission lines, and other structures

The preliminary layout of the Facility shown in Exhibit C provides proposed locations for Facility components, including PV panel arrays, collection lines, access roads, inverters, the Facility substation, and the fenceline. An on-site operation and maintenance (O&M) building is shown on the preliminary layout and may be included in the final Facility design. Alternatively, an existing facility/building in the vicinity of the City of Hazard could be re-purposed as the O&M building. The Facility will deliver generated electricity to the electric transmission system through a 69-kilovolt (kV) electric transmission line to the existing Kentucky Power Company Bonnyman Substation, which is approximately 2.5 miles east of the Facility. The planned route for the Transmission Line is included with the generation facility application to the Board.

A preliminary geotechnical engineering report was prepared by Terracon Consultants, Inc. (Terracon) to provide preliminary recommendations on site design and the location of Facility components. The Preliminary Geotechnical Engineering Report is provided as Exhibit D of this Site

Assessment Report. Pile driving and load testing was conducted, in addition to exploratory test bores to evaluate the subsurface conditions of the site. A review of the geologic conditions in the vicinity of the Facility Area identified no karst hazards. Given the prior use of the Facility Site as a coal surface mine, it is recommended that effective drainage be completed early in the construction sequence to ensure stability of the subsurface fill left from mining activities. Existing runoff patterns within the Facility Area were identified in the Preliminary Hydrologic and Hydraulic Evaluation prepared by GAI Consultants, Inc. (GAI), which is provided as Exhibit E to this Site Assessment Report.

2.5 Location and use of access ways, internal roads, and railways

The preliminary layout of the Facility shown in Exhibit C provides proposed locations for Facility access and internal Facility roads. As discussed in the Traffic and Dust Study prepared by BL Companies (provided as Exhibit F to this Site Assessment Report), the preferred access route to the Facility site would be via Kentucky Highway (KY) 15. From KY 15, local road access would include Sam Campbell Branch Road, to Jarets Branch Road, to the intersection with Couch Branch Road. If additional site access is found to be necessary as design of the Facility progresses, additional investigation will be conducted to identify another suitable route.

The Traffic and Dust Study notes that a CSX rail line runs along the North Fork Kentucky River, south and west of the Facility Area. Usage of the access route described above will not impact this rail line, as it is outside of the Facility Area and not crossed by the access route.

2.6 Existing or proposed utilities to service the facility

The Facility will deliver electricity generated onsite to the electric transmission system through a 69 kV transmission line to the existing Kentucky Power Company Bonnyman Substation, approximately 2.5 miles east of the Facility. Electric power necessary for operation of the Facility when it is not generating electricity will be obtained through this interconnection, or through a local distribution service line. A back-up power supply generator and propane tank may be included in the final design for the Facility substation. If an on-site O&M building is chosen in the final Facility design, water will be obtained from a potable water well system or an off-site location, and an on-site septic system will be used for sewage disposal. The potable water well system and septic system will be designed and installed pursuant to all applicable regulations.

2.7 Compliance with setbacks as provided under KRS 278.704(2), (3), (4), or (5)

Setback requirements applicable to the Facility are discussed in Tab 5 of the Application. Pursuant to KRS 278.704(4), a motion to deviate from the setback requirements of KRS 278.706(2)(e) is forthcoming.

2.8 Evaluation of the noise levels expected to be produced by the facility

An evaluation of the noise levels expected to be produced by the Facility is provided in the Bright Mountain Solar Project Sound Assessment, prepared by Jacobs Engineering Group, Inc. (Jacobs), and provided as Exhibit G of this Site Assessment Report. The evaluation found that the sound levels expected during construction activities in the vicinity of the nearest residence, approximately 420 feet from the solar panel area, would be approximately 73 A-weighted decibels (dBA). As construction activities progress away from this residence, construction noise levels would decrease. The operational sound model for the Facility produced an estimated operational sound level of up to 37 dBA at the closest residence that is not participating as a leaseholder in the Project. Please see Section 4.0 below for additional detail.

3.0 EVALUATION OF COMPATIBILITY WITH SCENIC SURROUNDINGS

KRS 278.708(3)(b) *An evaluation of the compatibility of the facility with scenic surroundings*

On behalf of Bright Mountain Solar, EDR evaluated the visibility of the Facility in the surrounding area. The results of this evaluation are presented in the Visibility Assessment Technical Memorandum, provided as Exhibit H of this Site Assessment Report. EDR's assessment included an inventory of visually sensitive resources within a 2-mile visual study area around the Facility and an evaluation of the potential visibility of the Facility within the 2-mile visual study area. The Facility Area, being a reclaimed surface coal mine, includes some areas of sparce vegetative cover. Its location, on a relatively level hill-top area surrounded by forest land, helps to reduce the visibility of the Facility. A viewshed analysis, conducted as part of the visibility assessment, found that the Facility will only be visible from approximately 2% of the 2-mile visual study area surrounding the Facility.

Of the eight visually sensitive resources identified within the visual study area, only four were found to have some potential view of the Facility. These were the Daniel Boone National Forest, North Fork Kentucky River, Kentucky State Route 2021, and Kentucky State Route 451. The potential view from the Daniel Boone National Forest included a very small, non-descript area of potential visibility at the boundary of the forest. Because this area of potential visibility is so small and occurs in a remote forested area, it is not likely for viewers to see the Facility from this location. Views of the Facility from the other locations are expected to be sufficiently screened by existing vegetation so that the Facility will likely go unnoticed by the casual observer. The Facility has been sited on a well-vegetated, elevated site. Vegetation bordering the site will largely remain intact, so there will be significant screening of Facility components. It is not anticipated that the Facility will result in any adverse visual effects on any visual resources.

Additionally, EDR, on behalf of the Applicant, conducted a baseline solar glare analysis to identify potential glare impacts that may result from operation of the Facility. The methods and results of this solar glare analysis are presented in the Solar Glare Analysis Report, which is provided as Exhibit I of this Site Assessment Report. The results of this analysis indicate that none of the potentially sensitive receptors adjacent to the Facility will receive glare from the proposed PV arrays.

Because the Facility is not anticipated to result in any adverse visual impacts or any glare impacts to identified receptors, no impact avoidance or mitigation measures are necessary.

4.0 PROPERTY VALUES AND LAND USE

KRS 278.708(3)(c) *The potential changes in property values and land use resulting from the siting, construction, and operation of the proposed facility for property owners adjacent to the facility*

Property value and land use impacts were assessed through an analysis that was conducted by CohnReznick, which is presented in the Real Estate Adjacent Property Value Impact Report, provided as Exhibit A of this Site Assessment Report. CohnReznick's assessment included an evaluation of both academic studies and studies prepared by other real estate valuation experts that analyzed solar facility impacts on property values. In addition, CohnReznick included summaries of its own previously conducted studies on solar facility impacts on both residential and agricultural property values. Summaries of interviews with local property valuation administrators discussing impacts of solar facilities on property values, conducted by others and by CohnReznick, were also presented. In summary, CohnReznick found that "the data indicates that solar facilities do not have a negative impact on adjacent property values."

The area surrounding the Facility was evaluated in a Site Specific Analysis Addendum Report (Addendum Report), provided as part of CohnReznick's Real Estate Adjacent Property Value Impact Report. The Addendum Report confirmed that there are no zoning regulations that are applicable to the proposed Facility. Additionally, the Addendum Report provided an overview of the surrounding area, as well as a review of traffic patterns/connectivity, demographics, surrounding land uses, local residential home value trends, and local land development trends. The evaluation provided in the Addendum Report found the proposed solar Facility to be considered a locally compatible use.

5.0 ANTICIPATED NOISE LEVELS

KRS 278.708(3)(d) *Evaluation of anticipated peak and average noise levels associated with the facility's construction and operation at the property boundary*

An evaluation of the noise levels expected to be produced by the Facility is provided in the Bright Mountain Solar Project Sound Assessment (Sound Assessment), prepared by Jacobs and provided as Exhibit G of this Site Assessment Report. Sound levels are presented in the report as A-weighted decibels (dBA). A-weighting de-emphasizes very low and very high frequencies in a manner similar to the frequency response of the human ear, and thus correlates well with human perception of noise.

The Sound Assessment made use of data from the Federal Transit Administration's *Transit Noise and Vibration Impact Assessment Manual* to evaluate potential construction noise impacts. The evaluation found that the sound levels expected during construction activities in the vicinity of the nearest residence (approximately 420 feet from the solar panel area) would be up to approximately 73 dBA. As noted in the Sound Assessment, construction would be a temporary and intermittent activity. As construction activities progress away from a residence, or any other specific area near the border of the Facility, construction-related noise levels would decrease.

During Facility operation, the principal sound-emitting equipment would include the inverters, which are used to convert direct current from the solar panels into alternating current for transport to the electric grid, and the transformers, which modify the electrical voltage. Using typical sound power levels for this sound-emitting equipment, Jacobs modeled the noise levels anticipated to be produced by the operational Facility under both the fixed-tilt and the single-axis tracking array layouts. The highest modeled operational sound level at a sensitive receptor was 42 dBA for the fixed-tilt layout and 39 dBA for the single-axis layout. However, this receptor is a residence that is participating in the Project. The highest modeled operational sound level at a non-participating residence is 37 dBA for the fixed-tilt layout and 34 dBA for the single-axis layout. These levels are representative of daytime operation when the inverters are operating at their full capacity during conditions that require maximum cooling fan operations.

Perry County, in which the proposed Facility would be located, has no established noise standards or other noise-related ordinances applicable to Facility operation. As noted in the Sound Assessment, land use around the proposed Facility can be characterized as a very quiet, sparse suburban or rural residential area. Typical daytime noise levels for such areas are around 40 dBA. Existing noise sources in the vicinity of the Facility Area include a railroad to the south and west of the Facility Area and mining activities north of the Facility Area. The modeled sound level of up to 37 dBA at the nearest non-participating residence during daytime operation is compatible with the existing conditions of the area.

6.0 TRAFFIC, ROADS, AND FUGITIVE DUST

KRS 278.708(3)(e) *The impact of the facility's operation on road and rail traffic to and within the facility, including anticipated levels of fugitive dust created by the traffic and any anticipated degradation of roads and lands in the vicinity of the facility*

Potential impacts of the Facility on road traffic were considered as part of the Traffic and Dust Study, which was prepared by BL Companies on behalf of Black & Veatch Corporation and is provided as Exhibit F of this Site Assessment Report. The study found that the preferred access route to the Facility Area would be via KY 15. The study anticipates that approximately 75% of the construction traffic along KY 15 will come from the south while approximately 25% will come from the north. It is anticipated that there will be approximately 300 passenger vehicle trips per day and approximately nine heavy duty vehicle or water truck trips per day during construction. These amounts are a small fraction of the annual average daily traffic in the vicinity of the Facility Area on KY 15, which is approximately 15,500 vehicles per day. The Traffic and Dust Study notes that the Applicant will obtain and comply with all required permits and coordinate with proper road officials as needed.

As noted in the Traffic and Dust Study, local roadways leading from KY 15 to the Facility Area are relatively narrow, with signs of asphalt buckling or sinking in some locations. Roadway improvements, including potential widening and surface repairs, may need to be made prior to construction in order to accommodate large semi-truck deliveries. Any such improvements would be coordinated with local authorities having jurisdiction. During construction, safety measures may need to be put in place at narrow or curved locations along local roadways. These could include radio communications, pilot vehicles, or traffic flaggers. After completion of construction activities, the Applicant will adhere to local and state requirements regarding necessary repairs to affected roadways.

During operation, Facility-related traffic will be minimal. Facility operation personnel will require the use of pickup-truck-sized vehicles for transportation to, from, and within the Facility. This will typically require one or two vehicle trips per day. Delivery of Facility components or other items or equipment necessary for maintenance activities will also occur from time to time.

As noted in the Traffic and Dust Study, construction activities are anticipated to result in the release of some fugitive dust into the surrounding air. Fugitive dust consists of small, lightweight particles that remain suspended in the air for a relatively brief period of time. Fugitive dust could arise from grading activities, equipment installation, traffic in unpaved areas, and dry, windy conditions during construction. It is anticipated that fugitive dust levels will be greatest within the Facility Area. The dust will quickly settle or be captured by the forested buffer that will surround the Facility within the Facility Area, and thus diminish before reaching residences outside of the

Facility Area. Creation of fugitive dust will be controlled by the use of best management practices such as reduced vehicle speed when necessary, application of gravel to heavily-travelled internal roadways, seeding/stabilization in areas where construction activities have been completed or suspended, and the application of water (or a dust suppressant) where needed. Overall impacts associated with fugitive dust are anticipated to be minimal.

A CSX rail line runs along the North Fork Kentucky River, south and west of the Facility Area. The Traffic and Dust Study notes that this rail line will not be impacted by Facility construction or operation because it is outside of the Facility Area and the Facility access route. Although not currently planned, the potential of using the rail line for the delivery of select Facility components will be considered by the Applicant.

7.0 PROPOSED MITIGATION MEASURES

KRS 278.708(4) *The site assessment report shall also suggest any mitigating measures to be implemented by the applicant to minimize or avoid adverse effects identified in the site assessment report*

Mitigation is not anticipated to be necessary because of the careful siting of the Facility. The location of the Facility on a relatively flat hilltop at the site of a former surface coal mine, with existing wooded areas surrounding the site, limits potential views of the Facility so that visual mitigation is not necessary. Analysis indicates that the Facility is not anticipated to cause any glare impacts to nearby sensitive receptors. The Facility is compatible with local land use, and property values are not anticipated to be negatively impacted by the construction and operation of the Facility. Noise levels associated with operation of the Facility are compatible with the existing noise conditions of the area. Access to the Facility during construction is anticipated to have minimal effect on the traffic levels for KY 15. During operation, traffic associated with the Facility typically would be one or two vehicle trips per day.

The Applicant has actively pursued public involvement in the siting process since early 2020. Numerous meetings to discuss the Project have been held with local and regional public officials. An official Project website has been established to provide information about the Project to the public (https://www.brightmountainsolar.com). A public information meeting was held on September 7, 2022, at West Perry Elementary in Hazard, to provide the public with information and to answer questions about the Project. An additional public information meeting was held on August 22, 2023, also at West Perry Elementary. At both meetings, Project representatives were available to answer questions. The Applicant will continue to pursue public involvement throughout the siting process.

Public safety will be safeguarded by security fencing that will surround the perimeter and discourage access to the Facility. Entrance to the Facility by authorized personnel will be through locked gates. Facility lighting that is necessary to ensure safe operation will be downward facing where practicable.

Facility construction will potentially impact local roadways. Before construction, roadway improvements will be made where necessary to ensure the roads can accommodate construction traffic. Traffic/transportation safety measures, such as radio communications, pilot vehicles, or traffic flaggers, will be used as needed during deliveries to ensure public safety on the local roadways during construction. After completion of construction activities, the Applicant will adhere to local and state requirements regarding necessary repairs to affected roadways to ensure they are in good condition for the travelling public.

Although there will be noise associated with construction of the Facility, construction noise will diminish as construction is completed in a given area and moves to another area. Temporary construction noise impacts will be minimized by ensuring that equipment and mufflers are maintained in good operating condition. Noise producing construction activities will be limited to daylight hours, or until 7pm when dusk is before 7pm, Monday through Saturday.

At the end of its life the Facility will be decommissioned, and Facility components will be removed. A Decommissioning Plan is included as Exhibit J of this Site Assessment Report. The Decommissioning Plan addresses end-of-life removal of the Facility and includes estimated costs of decommissioning.