

**COMMONWEALTH OF KENTUCKY
BEFORE THE KENTUCKY STATE BOARD
ON ELECTRIC GENERATION AND TRANSMISSION SITING**

In the Matter of:

ELECTRONIC APPLICATION OF MARTIN)	
COUNTY SOLAR PROJECT, LLC, FOR A)	
CONSTRUCTION CERTIFICATE TO)	
CONSTRUCT A MERCHANT ELECTRIC)	Case No. 2021-00029
GENERATING FACILITY IN MARTIN)	
COUNTY, KENTUCKY PURSUANT TO KRS)	
278.700 AND 807 KAR 5:110)	

**MARTIN COUNTY SOLAR LLC'S
MOTION FOR DEVIATION FROM SETBACK REQUIREMENTS**

Martin County Solar LLC (“Martin County Solar” or “Applicant”), by counsel, pursuant to KRS 278.704(4), moves the Kentucky State Board on Electric Generation and Transmission Siting (“Board”) for a deviation from the setback requirements in KRS 278.704(2). Specifically, the Applicant seeks a deviation from the 2,000-foot setback requirement in KRS 278.704(2) to allow it to place generating equipment 590 feet from the nearest residential neighborhood and to place invertors no closer than 1,000 feet from the residential neighborhood. In support thereof, Martin County Solar states as follows:

I. INTRODUCTION

On May 19, 2021, Martin County Solar filed an application for a Certificate to Construct a 200-megawatt (“MW”) merchant electric generating facility in Martin County, Kentucky (the “Project”). The Project will be situated on up to 1,053 acres of land, which has historically been used as a mining site, except for small areas of intact forested land on the periphery. The land comprising and adjacent to the Project site is sparsely populated. However, there are ten residences

consisting of single-family homes located within 1,000 feet of the Project boundary. The nearest residence is approximately 590 feet from the Project boundary.

Project equipment onsite will consist of photovoltaic (PV) solar panels mounted on either single axis tracker or fixed-tilt racking systems supported by steel posts. Other components of the PV system include combiner boxes, inverters, high voltage transformers, junction boxes, DC and AC electrical collection systems, a Project substation, and gen-tie lines. In addition, the Project will include an operation and maintenance (O&M) trailer, meteorological (MET) structures, access roads, and fencing.

During construction, the Project will include temporary laydown yards, temporary construction management trailers, and stormwater management features. The Project will also include a 100MW (up to 6 hours) AC-coupled battery energy storage system (BESS). The Project will require one substation that will include one 140-mega volt ampere (MVA) transformer and all necessary equipment to step up incoming medium voltage (MV) electricity to the high voltage electricity necessary to interconnect into the existing 138kV Inez substation onsite owned and operated by Kentucky Power Company, an American Electric Power (AEP) Company. The gen-tie line will be no more than 300 feet (91.4 meters) in length. Project equipment will be spread throughout the Project site based on topography, legal agreements with landowners, and engineering requirements.

II. THE 2,000 FOOT SETBACK REQUIREMENT

In relevant part, KRS 278.704(2) establishes setback requirements for merchant electric generating facilities as follows:

Except as provided in subsections (3), (4), and (5) of this section, no construction certificate shall be issued to construct a merchant electric generating facility unless the exhaust stack of the proposed facility and any

wind turbine is at least one thousand (1,000) feet from the property boundary of any adjoining property owner and all proposed structures or facilities used for generation of electricity are two thousand (2,000) feet from any residential neighborhood, school, hospital, or nursing home facility.¹

Without a deviation, all proposed structures or facilities used for generation of electricity must be located more than 2,000 feet from any residential neighborhood, school, hospital, or nursing home facility. Per KRS 278.700(6), a “residential neighborhood” is “a populated area of five (5) or more acres containing at least one (1) residential structure per acre.” There is one residential neighborhood within 2,000 feet of the proposed “structures or facilities used for generation of electricity.” (hereinafter, the “Neighborhood”)² This Neighborhood consists of ten (10) residences along KY-1439, near the northwest corner of the Project. The nearest home within the Neighborhood is approximately 563 feet from the Project boundary and 590 feet from the nearest solar panel. The nearest inverter is currently proposed to be located approximately 1,013 feet from the nearest dwelling within the Neighborhood. In addition to the vertical distance, the project sits more than 240 feet above these receptors.

III. DEVIATION FROM THE SETBACK REQUIREMENTS

Pursuant to KRS 278.704(4), the Board may grant a deviation from the 2,000-foot setback requirements in KRS 278.704(2) if “the proposed facility is designed to and, as located, would meet the goals of KRS 224.10-280, 278.010, 278.212, 278.24, 278.216, 278.218, and 278.700 to 278.716 at a distance closer than those provided in subsection (2) of this section.” The Board has previously stated that the purpose of the setback requirements in KRS 278.704(2) is to protect property owners from the adverse impacts that might result from the construction of merchant

² (See attached Exhibit 1 for listing of the neighborhood as well as a map showing the location).

electric generation facilities.³ With that in mind, the Project has been designed to minimize any adverse impacts on the residential neighborhood that might result from construction of the Project. Additionally, the Project has been designed to and will meet the goals of the statutes referenced in KRS 278.704(4). Thus, deviation from the setback requirements in KRS 287.704(2) is appropriate.

IV. DISCUSSION

A. The Project Meets the Goals Identified in KRS 278.704(4)

The Martin County Solar Project was designed with the goals of KRS 224.10-280, 278.010, 278.212, 278.214, 278.216, 278.218, and 278.700 to 278.716 in mind, and if constructed, will meet those goals as required by KRS 278.704(4).

1. KRS 224.10-280

KRS 224.10-280 provides that, prior to constructing a facility to be used for the generation of electricity, a developer must submit a cumulative environmental assessment (“CEA”) to the Energy and Environment Cabinet and pay a fee set pursuant to KRS 224.10-100(2). A CEA has been prepared and the results are provided below.⁴ The CEA demonstrates that the Martin County Solar will have limited negative environmental impacts. There have been no regulations promulgated establishing a fee to defray the costs of processing the CEA. As such, no CEA fee is paid.

(a) *Air Evaluation (KRS 224.10-280(3)(a))*

As required by KRS 224.10-280(3)(a), the CEA evaluates the air pollutants to be emitted by the facility and the associated control measures. Solar facilities do not produce any emissions

³*In the Matter of Application of ecoPower Generation-Hazard, LLC for a Certificate to Construct and Operate a Merchant Electric Generating Facility and a 69KV Transmission Line in Perry County, Kentucky* (“ecoPower Order”) at 32-33, Case No. 2009-00530 (Ky. P.S.C. May 18, 2010).

⁴ The CEA is provided as Exhibit 2.

during operation, as such, the Project is not anticipated to emit any of the criteria pollutants⁵ or Hazardous Air Pollutants (HAPs). The CEA describes the estimated emissions of each air pollutant.

Indirect air emissions from the Project would occur during construction from operation and staging of supplies and construction equipment, worker personnel vehicles, and equipment and supply deliveries, as well as during facility operation from maintenance vehicles, such as trucks used by technicians and equipment used during mowing and other vegetation control. The CEA describes the air pollution mitigation measures during both construction and operation of the Project. No air emissions permit is required for the Project.

(b) *Water Evaluation (KRS 224.10-280(3)(b))*

KRS 224.10-280(3)(b) requires that the CEA describe the type and quantity of water pollutants that will be discharged to the waters of the Commonwealth, and the methods that will be used to control those discharges. Site grading and construction activities will be the most likely source of surface water pollutants from the Project. The Project will minimize grading and excavating by incorporating existing topography into the layout to the extent possible. Martin County Solar will conduct Project construction activities under the coverage of the Kentucky Pollutant Discharge Elimination System (“KPDES”) permit for Stormwater Discharges Associated with Construction Activities (“KYR10 Permit”). The KYR10 Permit requires Martin County Solar develop and implement a stormwater pollution prevention plan which will identify best management practices (“BMPs”), such as silt fences, sediment basins, and buffer zones, that will be followed to minimize impacts associated with construction. Following construction, Martin

⁵ Particulate Matter (PM), Carbon Monoxide (CO), Sulfur Dioxide (SO₂), Nitrogen Oxides (NO_x), Volatile Organic Contaminants (VOCs), or lead.

County Solar will seed all disturbed areas with non-invasive species of ground cover for stabilization and erosion minimization.

During operation, the Project will store small quantities of petroleum fuels, lubricants, and fluids as well as groundskeeping chemicals for use in maintenance and upkeep. These chemicals will be stored inside a building or, if bulk storage is used, in appropriate tanks with secondary containment. Martin County Solar will implement BMPs to minimize the impacts of any spills on groundwater or surface water. The CEA concludes that “given the minimal chemical use and implemented BMP’s, it is unlikely that this Project will negatively impact any water resources in the area during the construction or ongoing operations phases.”⁶

(c) *Waste Evaluation (KRS 224.10-280(3)(c))*

As required by KRS 224.10-280(3)(c), the CEA evaluates the waste to be generated by the facility and the associated control measures. Waste generated during construction activities would include wooden crates, pallets, cardboard boxes and other packaging material. Additionally, excess wiring and other random debris could be intermittently produced. Where practical, construction waste material will be recycled and any material that cannot be recycled will be disposed of offsite at a permitted facility. Trash and other solid waste generated during operation will also be disposed offsite at a permitted facility. The Project could also generate very small amounts of hazardous waste. The Project would be considered a conditionally exempt small quantity generator (CESQG). Any hazardous waste will be managed offsite at a permitted facility. Finally, portable chemical toilets will be provided for construction workers during development.

(d) *Water Withdrawal Evaluation (KRS 224.10-280(3)(d))*

As required by KRS 224.10-280(3)(d), the CEA identifies the source and volume of

⁶ *Id* CEA Section 4.

anticipated water withdrawal needed to support facility construction and operations, and the CEA describes the methods to be used for managing water usage and withdrawal. As described in the CEA, either existing or new (if required) water wells within the Project area will provide water during construction activities and ongoing maintenance. Water use related to construction activities would include site preparation such as dust control and grading activities.

Solar electricity operation is not a water-intensive process. Rainfall in the region will suffice to remove dust and other debris from the PV panels. However, water will be used for vegetation management needs, including screening vegetation installation and during prolonged periods of drought. The provided CEA further describes the substantial amount of planning, permitting, and assessments which have been completed to ensure the project creates a minimal environmental impact. In summary, the Project is designed and located to meet the goals of KRS 224.10-280.

2. KRS 278.010

KRS 278.010 provides a list of definitions to be used in conjunction with KRS 278.010 to 278.450, 278.541 to 278.544, 278.546 to 278.5462, and 278.990. The Board's authority begins with KRS 278.700 and extends through KRS 278.716 and any applicable provision of 278.990. In filing a complete Application pursuant to the applicable statutes in this proceeding, Martin County Solar has satisfied the goal of providing the required information utilizing the definition of any applicable term defined in KRS 278.010.

3. KRS 278.212

KRS 278.212 requires the filing of plans for electrical interconnection with merchant electric generating facility and costs of upgrading the existing grid. Martin County Solar has met the goals of KRS 278.212 because Martin County Solar will comply with all applicable conditions

relating to electrical interconnection with utilities by following the American Electric Power (AEP) interconnection process. Additionally, Martin County Solar will accept responsibility for appropriate costs which may result from its interconnecting with the electricity transmission grid. With Martin County Solar's commitment to comply with KRS 278.212, the proposed facility has been designed and located to meet the goals of KRS 278.212.

4. KRS 278.214

KRS 278.214 establishes a curtailment priority for utilities or cooperatives that provide transmission service to follow in the event an emergency on its transmission facilities require curtailment. Martin County Solar will abide by the requirements of this provision to the extent that these requirements are applicable. By committing to comply with these requirements Martin County Solar has met the goals anticipated by the statute.

5. KRS 278.216

KRS 278.216 requires a jurisdictional utility, as defined by KRS 278.010(3), to comply with many of the requirements that are included within KRS 278.700 to 278.716, including the submission of a site assessment report. However, Martin County Solar is not a jurisdictional utility. Therefore, by complying with the requirements of KRS 278.700 *et seq.*, Martin County Solar has met the requirements and goals of KRS 278.216.

6. KRS 278.218

KRS 278.218 requires approval by Public Service Commission for change in ownership or control of assets owned by utility. Martin County Solar is not a utility as described in 278.010(3), and therefore this statute does not apply to Martin County. However, to the extent Board approval may at some time be required for change of ownership or control of assets owned by Martin County Solar, Martin County Solar will abide by the applicable rules and regulations which govern its

operation.

7. **KRS 278.700 to KRS 278.716**

KRS 278-700 to KRS 278.716 are the statutory provisions governing the application for and grant of construction certificates to merchant electric generating facilities. The Board has described the goals of these provisions as ensuring the proposed facility will be constructed and operated in a way that will not intrude upon or unnecessarily disrupt other surrounding land uses, including hospitals, nursing homes, residential areas, schools, parks or otherwise have adverse environmental impacts which are not otherwise regulated.⁷

Martin County Solar's application includes an evaluation of the issues required by KRS 278.700 to KRS 278.716. Moreover, Martin County Solar has designed the Project to ensure that, through Project layout and other mitigation measures, it will not intrude on or otherwise disrupt its neighboring landowners. The Martin County Solar Project meets the goals of KRS 278.700 to KRS 278.716.

B. The Project's Impact on the Residential Neighborhood will be Minimal

Martin County Solar has designed the Project to minimize impacts on the environment and the neighboring community. The Site Assessment Report, required by KRS 278.708 and included as Exhibit F to Martin County Solar's Application, described the Project's anticipated noise, visual, and traffic impacts.

1. **Noise Impacts**

SAR Exhibit D includes a thorough evaluation of the anticipated noise impacts of Project construction and operation ("Noise Assessment"). The Noise Assessment considered existing

⁷ *In the Matter of Application of ecoPower Generation-Hazard, LLC for a Certificate to Construct and Operate a Merchant Electric Generating Facility and a 69KV Transmission Line in Perry County, Kentucky* ("ecoPower Order") at 32-33, Case No. 2009-00530 (Ky. P.S.C. May 18, 2010).

sources of noise at the Project site, noise impacts from Project construction, and noise impacts from Project operations. Existing noise at the Project site consists of an active railroad that runs along the eastern boundary of the site, and noises typically produced by livestock farming and outdoor recreational activities. These noises include tractors, trucks, and all-terrain vehicles.

(a) *Noise During Construction*

The Project site is primarily an old surface mine site with some pastureland and graded hills. Heavy earth moving equipment is required to grade some of the land to a more gradual slope. The primary noise impact from Project construction will arise from the use of construction equipment to grade land, install the solar panels and associated equipment, and a temporary increase in traffic during construction activities.

The Noise Assessment identifies multiple pieces of construction equipment that may be utilized during Project construction; the loudest of which is an impact pile driver that could be used to construct foundations for solar panels. The US Department of Transportation describes the typical noise level of an impact pile driver as 101 decibels (“dB”) at 50 feet.⁸ The Noise Assessment calculates how the noise from the pile driver attenuates with distance as follows:

Distance from Noise Source to Receptor (feet)	Projected Noise level at Noise Receptor (dB)
50	101
100	94.98
200	88.96
300	85.44
500	81
1,000	74.98
1,500	71.46

⁸ FHWA 2006. *Roadway Construction Noise Model User’s Guide*. U.S. Department of Transportation. U.S. Department of Transportation, Federal Highway Administration, FHWA-HEP-05-054, DOT-VNTSCFHWA-05-01. January 2006.

Based on current site plans, all of the residential receptors are greater than 500 feet away from locations where pile drivers will operate. At 500 feet, the projected noise level is approximately the same as traffic⁹. Moreover, the noise from construction activities will be limited in duration and will occur generally occur only during daylight hours. Noise from construction equipment will not result in long-term negative impacts to neighboring landowners.

In addition to noise from construction equipment such as pile drivers, construction of the Project will result in a temporary increase in truck traffic. The Noise Assessment evaluated the potential noise impact from heavy trucks operating in the Project vicinity and found that the closest residents would experience only a minimal, temporary impact from construction-related truck traffic.

(b) *Noise During Operation*

Noise from the Project during operation will be minimal. Any operational noise will be produced by panel tracking system motors (if utilized), inverters, and transformers. Tracking system motors are small motors used to track the arc of the sun to maximize each panel's solar absorption. Tracking system motors would operate no more than one minute out of every 15-minute period. The sound typically produced by a tracking motor is approximately 78 dB at the source, attenuating to approximately 42 dB at 210 feet. Martin County Solar currently plans to utilize SMA Sunny Central UP inverters, GE LV5 PCS or similar invertors for the Project. The inverters will be distributed evenly across the Project site. According to the manufacturer's specifications, the noise emission produced by this inverter is rated at 67.0 dBA at an approximate distance of 33 feet.

⁹ Noise Assessment.

	Panel Tracking System		Inverter		Transformer		Operation & Maintenance (Automobile)	
	Distance (ft)	dBA	Distance (ft)	dBA	Distance (ft)	dBA	Distance (ft)	dBA
Nearest Receptor - Cemetery	334	62	779	35	3,950	<10	218	58
Nearest Residential Receptor	670	55	1,013	33	3,740	<10	563	50
Note	Operates 1 minute every 15 minutes during daylight hours		Continuous low hum		Only two areas are located onsite		Ex. Pickup truck in various locations only during business hours	

As discussed above, the closest inverter the Neighborhood is currently planned to be located approximately 1,013 feet away. At this distance, the noise from the inverters is approximately 33 dB which is slightly louder than a soft whisper (30 dB).

Martin County Solar currently plans to utilize a Kentucky Power Company substation and transformers. Transformers associated with the Project will include an SBG-SMIT 3 phase 630 kVA transformer or similar. According to manufacturer specifications the loudest the transformer is expected to be is just over 60 dBA, measured 1 meter (3.2 feet) from the source, or the level of a normal conversation. The Neighborhood is approximately 4,000 feet away from the substation and battery storage area.

If the proposed inverters and transformers are located at least 1,013 feet from the Neighborhood, the noise levels generated from this type of equipment operation at the planned distances would be similar to, or slightly louder than a soft whisper. At that distance, the equipment would not be a significant contributor of noise.

2. Visual Impacts

Per SAR Exhibit B, the Property Value Impact Report,

“[L]arger solar farms using fixed or tracking panels are a passive

use of the land that is in keeping with a rural/residential area. The solar panels are all less than 15 feet high, which means that the visual impact of the solar panels will be similar in height to a typical greenhouse and lower than a single story residential dwelling. Were the subject property developed with single family housing, that development would have a much greater visual impact on the surrounding area given that a two-story home with attic could be three to four times as high as these proposed panels.”¹⁰

Additionally, the Project is sited on a topographic high and surrounded by existing vegetation. Therefore, viewshed impacts to residences in the surrounding area are not expected. Potential visual impacts of the Project are further described in Application Exhibit F, the Site Assessment Report.

3. Traffic Impacts

SAR Exhibit E is the Martin County Solar Traffic Impact Study (“Traffic Study”). The Traffic Study analyzes the traffic impact during both the construction and operation phases of the proposed facility. The Project will have two functional access points; one off Pigeon Roost Road and the other off Wolf Creek Road; however, the number of workers and the associated construction and delivery truck trips expected during the construction of the Project is not anticipated to adversely impact traffic on these adjoining roads. As operation of the Project will only require a single person to be on site daily, and up to three additional employees for 70 days a year for site inspections and repair, the additional volume of daily traffic will have no measurable impact on the traffic and/or transportation infrastructure.

4. Martin County Solar’s Mitigation Efforts

The Board should grant this motion for deviation because Martin County Solar has made every effort to protect property owners from all adverse impacts that might result from the

¹⁰ *Id* SAR Section 3, Exhibit B.

construction and operation of the facility. Martin County Solar has had an extensive outreach program to the community generally, and the neighbors specifically, which went above and beyond the statutory and regulatory requirements.¹¹ The proposed merchant generating plant will not produce any emissions, only a negligible amount of noise once constructed, and it will have very minimal visual impacts.

V. **PRAYER FOR RELIEF**

Martin County Solar has designed the Project to protect the residents of the adjoining residential neighborhood from any potentially adverse impacts of the Project. Additionally, the Project meets the goals of the statutory provisions listed in KRS 278.704(4).

Wherefore, Martin County Solar respectfully requests that the Board:

1. grant the Martin County Solar Project a deviation from the 2,000-foot setback requirement in KRS 278.704(2);
2. allow Martin County Solar to place generating equipment 500 feet from the relevant residential Neighborhood; and
3. authorize Martin County Solar to place inverters 1,000 feet from the relevant residential neighborhood.

Respectfully submitted,



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¹¹ See Application, Section III. Mitigation measures are outlined in Application Exhibit F, Section VII.