COMMONWEALTH OF KENTUCKY

BEFORE THE KENTUCKY STATE BOARD ON ELECTRIC GENERATION AND TRANSMISSION SITING

In the Matter of:

ELECTRONIC APPLICATION OF HORSESHOE BEND SOLAR, LLC FOR A CERTIFICATE OF CONSTRUCTION FOR AN APPROXIMATELY 60 MEGAWATT MERCHANT ELECTRIC SOLAR GENERATING FACILITY IN GREEN COUNTY, KENTUCKY PURSUANT TO KRS 278.700 AND 807 KAR 5:110	)))))))	CASE NO. 2020-00190

O R D E R

On December 14, 2020, Horseshoe Bend Solar, LLC (Horseshoe Bend) filed an application seeking a Construction Certificate to construct an approximately 60-megawatt alternating current (MWac) photovoltaic electricity generation facility, near the unincorporated community of Exie, Green County, Kentucky.[1] Horseshoe Bend is a limited liability company organized under the laws of Delaware with a principal place of business in Durham, NC.[2] The total acreage within the project boundary is 550 acres that has been predominantly used as pasture and agriculture.[3] The on-site equipment will consist of 550 acres of solar photovoltaic panels and associated racking, inverters, DC-coupled energy storage system, and a project substation transformer.[4] The power

[1] Application, Volume I at 3.

[2] Application at 1.

[3] Application, Volume I at 3.

[4] *Id.*

generated by the project will be sold on the open market through an existing transmission line that crosses the property.[5]

Pursuant to an Order issued on January 6, 2021, a procedural schedule was established for the orderly review and processing of this matter. The procedural schedule provided for two rounds of discovery upon Horseshoe Bend's application, a deadline for the filing of the consultant's report, and an opportunity for Horseshoe Bend to submit comments in response to the consultant's report. The January 6, 2021 Order also scheduled a hearing for the matter which resulted in extending the statutory deadline for the processing of this matter from 120 days to 180 days from the date of the filing of the application.

Pursuant to 807 KAR 5:110, Section 4, requests to intervene had to be filed within 30 days from the date of the filing of the application. Also, pursuant to 807 KAR 5:110, Section 6, the Siting Board on its own motion or any party to this case may file a motion requesting an evidentiary hearing within 30 days from the date of the filing of the Application. Under KRS 278.712(1), a request for a local public hearing may be requested by at least three interested persons that reside in Green County or from the local planning and zoning commission, mayor of the city or county fiscal court of a jurisdiction where the solar facility is proposed to be located. Lastly, pursuant to 807 KAR 5:110, Section 8, a request for a public meeting must be made within 30 days from the date of the filing of the application. There have been no requests for intervention in this matter, no requests for an evidentiary hearing, and no requests for a public meeting or a local public hearing in this matter.

[5] Application, Volume I at 15.

Horseshoe Bend has filed responses to multiple rounds of discovery in this matter. On February 23, 2021, Horseshoe Bend filed a motion requesting deviations from certain setback requirements set forth in KRS 278.704(2). Pursuant to KRS 278.708(5), the Siting Board retained a consultant, Wells Engineering, to review Horseshoe Bend's site assessment report (SAR) and to provide recommendations concerning the adequacy of the SAR and propose mitigation measures. A site visit was held on March 17, 2021. The Wells Engineering Report was filed on March 29, 2021. Horseshoe Bend submitted its response to the Wells Engineering Report on April 9, 2021. A formal evidentiary hearing was held on April 22, 2021. Horseshoe Bend filed responses to post-hearing data requests on May 14, 2021. The Siting Board received no public comments, and the Siting Board heard no public comments at the beginning of the April 22, 2021 formal evidentiary hearing. The matter now stands submitted for a decision.

PROPOSED HORSESHOE BEND SOLAR FACILITY

The proposed solar facility will be located at 1648 KY 218, Greensburg, Green County, KY 42743.[6] The proposed Horseshoe Bend Solar Project will be located on approximately 550 acres to the South of KY-218, set back from Jim Meadows Road, approximately ten miles Southwest of Greensburg.[7] The proposed site totals approximately 550 acres which has been used as primarily pasture and crop land with some woodland. Horseshoe Bend has signed long-term agreements with six local landowners who have agreed to lease portions of their land to the facility to establish site

[6] Application Volume II, Site Assessment Report at 1.

[7] Application, Volume I, Attachment F, Public Notice.

control.[8] Horseshoe Bend anticipates using approximately 550 acres for the installation of the necessary solar equipment and facilities.[9] Horseshoe Bend states that a fence meeting the National Electrical Safety Code (NESC) requirements, which is typically a six-foot fence with razor or barbed wire at the top, will enclose the facility.[10] The solar facility has a rated capacity of 60 MWac and will be connected to East Kentucky Power Cooperative, Inc.'s (EKPC).[11] Horseshoe Bend states that the proposed facility is located within PJM Interconnection territory and PJM will manage the interconnection of the Project in coordination with EKPC, which owns the onsite transmission infrastructure. Interconnection studies, paid for by Horseshoe Bend, have been in process for 1.5 years and will identify any infrastructure upgrades the project will contribute to, and allocate cost to the project accordingly. The project will interconnect to an on-site, existing transmission line owned by EKPC. At Horseshoe Bend's expense, EKPC will build a new tap line to interconnect the Project.[12]

Horseshoe Bend notes that there is one residential neighborhood (as defined by KRS 278.700(6)) within 2,000 feet of the Project's facilities, but there are no schools, public or private parks within two miles of the project's radius.[13]

[8] Application, Volume I, Executive Summary.

[9] Application, Volume I at 3. *See also*, Application Volume II, Site Assessment Report at 152.

[10] Application, Volume I at 3.

[11] *Id*.

[12] *Id*.

[13] Application, Volume I, Executive Summary.

Pursuant to KRS 278.706(2)(c), Horseshoe Bend notified 24 landowners whose property borders the proposed solar facility site via certified mail on December 7, 2020.[14] Horseshoe Bend also published notice of the proposed solar facility in the *Greensburg Record-Herald*, the newspaper of general circulation in Green County, on December 9, 2020.[15]

In addition, Horseshoe Bend also engaged in public involvement program activities as required by KRS 278.706(2)(f) prior to the filing of its application. Horseshoe Bend informs that through its parent Carolina Solar Energy III, LLC (Carolina Solar Energy) it first reached out to Green County Judge/Executive John Frank in September 2019, and met in person to introduce Carolina Solar Energy and to let him know about the location of the Project.[16] Soon after, Horseshoe Bend notes that it met with landowners, stakeholders, and local government officials about the proposed 60-MW solar power project and held an introduction to solar energy facilities presented by solar companies including Carolina Solar Energy, which took place in Marion County in October of 2019.[17] Horseshoe Bend also states that it held a public meeting via Zoom at 5:30pm CDT on July 16, 2020, with an in-person screening option to inform the public about the solar project and receive comments from the public.[18] The physical portion of the meeting was held at the Greensburg Community and Senior Center, 110 North 1st Street,

[14] Application, Volume I, Attachment B.

[15] *Id*.

[16] Application, Volume I at 8.

[17] *Id.*

[18] *Id.*

Greensburg.[19] Horseshoe Bend published notice announcing the public meeting in the Greensburg Record-Herald on July 1, 2020, and also mailed letters, dated June 26, 2020, to all adjoining landowners notifying them of the virtual meeting, and providing instructions on how to reserve a spot at the physical screening of the public meeting.[20]

DISCUSSION

I. Requirements Under KRS 278.708 – Site Assessment Report

KRS 278.704(1) states that "[n]o person shall commence to construct a merchant electric generating facility until that person has applied for and obtained a construction certificate for the facility from the [Siting] [B]oard." KRS 278.708 requires a SAR be prepared and filed with an application. The SAR should provide (1) a detailed description of the proposed site; (2) an evaluation of the compatibility of the facility with scenic surroundings; (3) 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; (4) evaluation of anticipated peak and average noise levels associated with the facility's construction and operation at the property boundary; (5) 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; and (6) any mitigating measures to be implemented by the applicant to minimize or avoid adverse effects identified in the site assessment report.

Detailed Site Description

[19] Application, Volume I at 9.

[20] *Id.*

In addition to the description of the proposed solar facility as described above, Horseshoe Bend states that the area around the project site historically been used as pasture and crop land. Horseshoe Bend further states that 42 percent of the surrounding acreage is defined as agricultural/residential, and another 53 percent of the surrounding acreage is purely agricultural; the remaining 5 percent of the surrounding area is defined as purely residential.[21] The closest home will be more than 150 feet away and the average distance to adjoining homes is 1,104 feet.[22] There are two non-participating residential homes within 300 feet of the project.[23]

There are 50 individual parcels of land, varying in size from less than one acre to just over 141 acres, located adjacent to the Horseshoe Bend solar site.[24] There will also be 37 homes located within 2,565 feet of the Horseshoe Bend solar facility.[25] The closest home will be at least 150 feet away and the average distance to adjoining homes is 1,104 feet.[26] Exact locations of some solar panels, the inverters, and transformer have not been finalized by Horseshoe Bend. The solar equipment will consist of crystalline solar panels, racking, inverters, transformers, a DC-coupled energy storage system, one substation transformer, and associated wiring. The racking system used to fix the solar panels to the ground has a small footprint without the use concrete. The panels are not considered impervious as rainwater can travel over and around the panels, making this a low impact

[21] Application, Volume II, Site Assessment Report, Attachment B at 4.

[22] *Id.*

[23] Application, Volume II, Site Assessment Report at 4.

[24] Application, Volume II, Site Assessment Report, Attachment GB at 5–6.

[25] *Id.*

[26] *Id.* at 4.

development. The panels and racking are no more than 15 feet high and will be placed directly onto grass. Gravel will be placed on the internal access roads throughout the site, and will not be placed under the solar panels. The energy storage system is typically housed in a structure similar to a shipping container. There will be approximately 15 energy storage container areas, typically co-located with central inverters, if central inverters are used.[27]

The proposed site development plan in the SAR filed with the application and also referred to as application volume II was revised with a change in the location of the substation with a plan filed April 9, 2021.[28] After a site visit, EKPC recommended moving the substation to a new location approximately 0.3 miles southwest of the original location. That move towards the interior of the proposed footprint should not materially change the project's impact on adjacent neighbors.[29] The preliminary site plan, shows the following items that will not materially change during the final design unless reviewed by the Siting Board: potential project footprint, utility easements, setbacks from property lines, roads, and non-participating residential homes; vegetative buffer locations and specifications; substation and interconnection equipment area; and parcel boundaries.[30] The preliminary site plan also shows the location of items that will change during the detailed

[27] Application, Volume I at 4.

[28] Horseshoe Bend Supplemental Information (filed Apr. 9. 2021), Exhibit B.

[29] Horseshoe Bend Supplemental Information at 1–2.

[30] Application, Volume 2, Site Assessment Report at 4.

design process: interior access roads, construction entrances, solar equipment within the potential project footprint, and the security fence.[31]

Wells Engineering evaluated the data contained in the SAR and concluded that Horseshoe Bend has complied with the requirements for describing the facility and a site development plan, as required by KRS 278.708. The manner in which the SAR complies with KRS 278.708 is detailed below.

1. Considering the land use of the 50 adjoining parcels: 5 percentage of the acreage is residential, 53 percentage of the acreage is agricultural, and 42 percentage of the acreage is agricultural/residential. The closest home will be more than 150 feet away and the average distance to adjoining homes is 1,104 feet.[32] There are two non-participating residential homes within 300 feet of the Project.[33]

2. Attachment E of the SAR contains the boundary survey, as well as the legal descriptions of the nine parcels that compose the land leased for the proposed facility. Horseshoe Bend has signed long-term leases with six local landowners, and copies of the leases were submitted as a confidential filing on April 19, 2021.

3. The proposed site entrances are marked on the site development plan. In order to comply with the NESC, all areas where equipment is to be located will be fenced prior to construction. All entrances to the site will be gated, and locked at all times when workers are not active on site. There will be safety signage along the security fence.[34]

[31] Application, Volume II, Site Assessment Report at 4, *See also* Horseshoe Bend Supplemental Information at 3.

[32] Application, Volume II, Site Assessment Report, Attachment B at 4.

[33] Application, Volume II, Site Assessment Report at 4.

[34] *Id.*

4. The preliminary site plan filed in Horseshoe Bend Supplemental Information on April 9, 2021, shows the location of the array area; inverter, battery, and transformer equipment areas; substation and interconnection equipment area. The utility easement for the transmission line is also shown.[35]

5. Internal roads will be gravel. There are no railroads on or near the site. Horseshoe Bend will not interfere with access to two historic cemeteries located along DAR Cemetery Road, Sandidge Cemetery and Cox Cemetery.[36]

6. The Green County – Summer Shade 161kv transmission line, which crosses the site, will carry electricity generated by Horseshoe Bend Solar. It is not anticipated that the electric utility service will be required from Taylor County RECC during construction or maintenance. There are existing underground utilities in the area, such as pipelines for water (Green Taylor Water District) and natural gas (Louisville Gas & Electric), and retail water and electricity are not needed for use at the Horseshoe Bend site.[37]

As stated above the Siting Board finds that Horseshoe Bend's detailed description of the proposed solar facility site complies with the requirement set forth in KRS 278.708. The Siting Board also finds the determination of the Wells Engineering Report to be reasonable and, therefore, no mitigation measures relating to the SAR beyond what has been taken by Horseshoe Bend are necessary.

Compatibility with Scenic Surroundings

[35] Horseshoe Bend Supplemental Information, Exhibit A.

[36] Application, Volume II, Site Assessment Report at 12.

[37] Responses to Wells Engineering Second Request for Information (filed Apr. 9, 2021), Exhibit A.

Horseshoe Bend states that the proposed solar site is situated in a rural area, significantly set back from most roadways and surrounding homes and businesses, and will be nearly completely surrounded by existing vegetation. Once the project is complete, it will likely only be visible from a short stretch of Jim Meadows Road and Roy Bagby Road, small county roadways.[38] Horseshoe Bend further states that there are two non-participating residential homes within 300 feet of the proposed location of solar panels and equipment. One of those two homes has existing vegetation that will block much of the view of the solar facility. The owners of the other home did not express concern or opposition to the project after representatives from Horseshoe Bend met with them and explained the project, setbacks and proposed vegetative buffer to the homeowners.[39] An additional vegetative buffer is proposed at the historic family cemetery at the Southern end of the project site.[40]

Horseshoe Bend asserts that its solar facility uses fixed or tracking panels and are a passive use of the land that is in keeping with a rural/residential area, explaining that the solar panels are all less than 15 feet high, giving them a similar visual impact in height to a typical greenhouse and lower than a single story residential dwelling. Horseshoe Bend argues that if the subject property were developed with single family housing that it 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.[41]

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[38] Application, Volume II, Site Assessment Report at 6.

[39] *Id.*

[40] *Id.*

[41] *Id.*at 6–7.

Horseshoe Bend further indicates that it has plans to plant native evergreen species as a visual buffer to mitigate viewshed impacts. Plantings are primarily proposed in areas directly adjacent to the Project that lack existing vegetation; furthermore, members of the development team have met with neighbors to ensure they are aware of the Project and the locations of the proposed vegetative buffers.

The Well Engineering Report finds that the visual setting surrounding the Horseshoe Bend solar site is agricultural and residential. There are three residences within 300 feet of the solar power plant, but only two are non-participating.[42] The owners of the non-participating residence that is most affected has not objected to the project, and Horseshoe Bend has provided screening for this residence as well as a 150-foot setback. This residence is a large land holder and will be approximately 1,100 feet from the solar power plant, and they have a high voltage transmission line running through the same viewshed.[43] The other non-participating residence, as stated above, has natural screening, and will also be provide with a 150-foot setback.

Lastly, the Well Engineering Report advises there is a neighborhood within 2,000 feet as defined by KRS Chapter 278. This is a small collection of houses where the closest house is 850 feet from the solar power plant and completely obscured from view of any of the residences. Overall Wells Engineering concludes there is negligible impact to the viewshed.

The Well Engineering Report recommends the following mitigation measures to address visual impacts.

[42] Wells Engineering Report at 15.

[43] *Id.*

1. Leaving existing vegetation between solar equipment and neighboring residences in place, to the extent practicable, to help screen the project and reduce visual impact.

2. Ten days prior to the commencement of construction, Horseshoe Bend shall provide a detailed plan on how they will protect the water resources in the project area. The site assessment documents in several locations says that certain mitigation measures regarding erosion and protection of water resources "may" be carried out. This needs to be clearly specified. The primary focus should be on preventing turbidity being added to local water sources as a result of erosion during construction.

Having reviewed the record, the Siting Board finds that the passive characteristics of the proposed solar facility combined with the existing topography of the surroundings, in general, where the solar facility will be located as well as the trees and other vegetation in the area will mitigate the effects the proposed facility will have on the scenic surroundings of the site. The physical characteristics of the solar facility also do not pose any adverse impact to the scenic surroundings given that the majority of the day the solar panels will be less than fifteen feet high, which would be a lower profile than most single-family homes. The Siting Board finds that the mitigation measures recommended in the Well Engineering Report are reasonable and, therefore, will require Horseshoe Bend to implement the mitigation measures identified above.

The Siting Board notes that the mitigation measure to plant native evergreen species as a visual buffer to further mitigate viewshed impacts, and that plantings are primarily proposed in areas directly adjacent to the project that lack existing vegetation. With this final measure and the mitigation measures put forth by both Wells Engineering

and Horseshoe Bend itself, the Siting Board agrees with the Wells Engineering conclusion that solar facility with have negligible impact to the viewshed of the scenic surroundings.

Impact on Property Values

With respect to impact on property values, Horseshoe Bend submitted a Property Value Impact (PVI) Report from a certified real estate appraiser, known as Kirkland Appraisals (Kirkland), that found that, based upon a comparative analysis, the solar facility will have no impact on the property values of abutting or adjacent residential or agricultural properties.[44] The report indicates that the solar facility would function in a harmonious manner with the nearby surroundings, which is mostly agricultural, and that operation of the solar facility would not generate the level of noise, odor, or traffic impacts to negatively impact the nearby surroundings as compared to a fossil fuel generating facility or other industrial facility.

The Wells Engineering Report evaluated the impacts to property values by reviewing relevant existing literature related to solar facility impacts; prepared further analysis of the information provided in Horseshoe Bend's PVI Report using both Cloverlake Consulting Services (Cloverlake) and Mary McClinton Clay, MAI (McClinton Clay). The Wells Engineering Report review noted that the methodology for the appraisal findings were missing from the Horseshoe Bend PVI report and the case studies reviewed were ones funded by solar developers.[45]

The review conducted by McClinton Clay discusses the potential flaws and inconsistencies found with the case study data used in the Horseshoe Bend PVI report

[44] See Application, Volume II, Site Assessment Report, Attachment B.

[45] Wells Engineering Report, at 17.

and concluded that it is fundamentally flawed, non-credible, is not consistent with the Uniform Standards of Professional Appraisal Practice (USPAP) and should not be used for any decision-making purposes related to the Horseshoe Bend Solar facility.[46] The McClinton Clay review also examined the North Star case study which showed the number of affected property owners who received compensation through a neighborhood agreement, or had their property directly purchased by the developer in an attempt to remove or reduce negative responses from property owners. These developers then flipped the property a few years later at a loss and in one instance sold the property back to the original owner. The review concludes that that many more data points are needed in appraising the actual valuation effect of the Solar Power Plant on property values.

In response to the Wells Engineering Report, Horseshoe Bend address the concerns brought forth and includes a rebuttal letter from Kirkland stating that McClinton Clay exhibited bias against solar development and her professional review of the Horseshoe Bend's PVI Report is defective and misrepresents the findings and conclusions of several of the studies reviewed.[47] The Kirkland rebuttal letter clarifies that the Horseshoe Bend Report is identified as a consulting assignment that falls under USPAP guidelines for Appraisal Practice as a valuation service and is not subject to Standards 1 and 2 of USPAP, but subject to the Competency, Ethics, and Jurisdictional Exception Rules.[48] Additionally, the appraisal methodology used in the Horseshoe Bend

[46] *See* Wells Engineering Report, Appendix C, McClinton Clay's Review of Horseshoe Bend Solar Impact Study.

[47] Horseshoe Bend Solar's Response to the Wells Engineering Report, at 10-11. *See also* Horseshoe Bend Solar's Response to the Wells Engineering Report, Exhibit D, Kirkland Appraisals rebuttal letter.

[48] Horseshoe Bend Solar's Response to the Wells Engineering Report, Exhibit D, Kirkland Appraisals rebuttal letter, at 5.

PVI Report is a Matched Pair Analysis or Paired Sales Analysis as indicated in the report and while not explained in detail, is a commonly used appraisal methodology for addressing the question of impact of an adjoining solar farm on property values. Kirkland's rebuttal letter included additional literature from university studies including, but not limited to, a 2018 University of Texas study, which showed that a majority of survey respondents estimated a value impact of zero and a geospatial analysis which showed that relatively few homes would be impacted. Also included was a 2020 University of Rhode Island study, which found the property value impact was limited to non-rural locations and the impact in rural locations effectively being zero following construction of a solar array.[49] In regards to the North Star case study, Kirkland's rebuttal letter asserts that the solar developers flipping property adjoining a solar farm at a loss is not a typical market participant and therefore not indicative of typical market activity. A good indicator of market value would include motivated buyers and sellers and solar developers are not typically motivated either in purchasing or selling homes adjoining their projects and, at times, would only do so to get rid of the hassle.

The review conducted by Cloverlake found that based on the data and analysis that the solar farm proposed at the subject property will have no impact on the value of adjoining or abutting property. The report also noted some positive implications to neighboring properties due to the passive nature of the solar facility's operations. These include protection from future development of residential developments or other more intrusive uses, reduced dust, odor and chemicals from former farming operations,

[49] Horseshoe Bend Solar's Response to the Wells Engineering Report, Exhibit 3, Kirkland Appraisals rebuttal letter, at 1–5.

protection from light pollution at night, it's quiet, and there is minimal traffic after construction.

Overall, the Wells Engineering Report concludes that every site is different and every property within that site is different and to draw a consistent conclusion is difficult. However, the area around the Horseshoe Bend solar facility area is lightly populated and there should be no impact to the property values.[50]

Having reviewed the record, the Siting Board finds that there is sufficient evidence to conclude that the proposed Horseshoe Bend solar facility will more than likely not have any adverse impact on nearby property values. As noted earlier, the characteristics of the solar facilities operations is passive in nature in that it does not produce any air, noise, waste, or water pollution nor does it create any traffic issues during operations.

Impact on Roads, Railways, and Fugitive Dust

With respect to the impact on roads, railways, and fugitive dust, Horseshoe Bend's Noise and Traffic Study as part of its SAR shows the proposed construction entrances. Three entrances will be along KY 218, two along Jim Meadows Road, and one along Roy Bagby Road. All construction vehicle access points from KY 218 will be from existing driveway locations. Both KY 218 and US 68 are Major Collectors not on the National Highway System, though US 68 is on the National Highway System in the eastern portion of Green County from the KY 793 intersection to Taylor County.[51] There are no railways that intersect with the project site.[52]

[50] Wells Engineering Report, at 18.

[51] Application, Volume II, Site Assessment Report, Attachment F Noise and Traffic Study at 6.

[52] *Id.*

Horseshoe Bend states it is expected that construction will take eight to 12 months, with working hours from 7 a.m. to 9 p.m. daily. Horseshoe Bend's Noise and Traffic Study provides average daily traffic (ADT) data for two stations in the vicinity of the solar site: KY 218 consisting of two 10-foot lanes in each direction and US 68 consisting of two 11-foot lanes in each direction.[53]

Horseshoe Bend anticipates a temporary increase in traffic near the vicinity of the solar site during construction activities. The increase in traffic will occur in the morning and evening when construction workers are entering and exiting the project site as well as periodic delivery of construction materials and equipment. Based on the company's experience with facilities of similar sizes, up to 150 workers are anticipated to be on-site each day. Workers will park on-site, but if space is inadequate, Horseshoe Bend may designate an off-site location and provide an employee shuttle.[54] For construction deliveries, up to 15 trucks (Class 9) are anticipated to deliver components daily, weighing approximately 40,000 pounds each. Additionally, a few Class 21 trucks will be required. One Class 21 truck is anticipated for the delivery of the substation transformer. Additionally, approximately 10 Class 21 truck (or similar) deliveries are anticipated to deliver solar panels to the facility. Deliveries are anticipated to occur at various times throughout each working day; group delivery is not common of the panels and racking, which is the majority of deliveries.[55] Therefore, the worst-case, conservative daily total traffic would be less than 200 vehicles per day, with the majority of trips for workers

[53] *Id.*

[54] *Id.*

[55] *Id*.

(FHWA Class 2 and 3 vehicles). Two-way peak hour traffic volumes along nearby roads average fewer than 150 vehicles per hour (fewer than three vehicles per minute), due to this low background traffic volume no adverse traffic impacts are anticipated as a result of construction.[56]

Horseshoe Bend states that it and its vendors will be required to comply with laws and regulations, which are primarily focused on federal and state highways. Construction site access points are anticipated along a state road (KY 218) and along local roads within one mile of that state road (Jim Meadows Road and Roy Bagby Road). Encroachment Permits will be required through the State or county governing agencies, and additional permits/agreements could be required for roads beyond the National Truck Route depending on the route(s) the contractor determines will be needed for trucks to the site. Permitting will be performed by the contractor once the project is awarded and these considerations finalized.[57]

Horseshoe Bend or the construction contractor will provide adequate Manual on Uniform Traffic Control Devices compliant traffic control signs and devices during construction, including work zone signage and KY Transportation Cabinet-certified flaggers to facilitate safe construction deliveries. Due to its narrow width, the contractor may need to close Jim Meadows Road to through traffic during certain times of construction. There may be temporary stoppages on Roy Bagby Road to facilitate deliveries. Disruptions to local property owners will be coordinated during construction. The construction contractor will document roadway conditions in accordance with all

[56] *Id*.

[57] *Id.* at 7.

applicable transportation permits obtained from State and local road authorities before construction commences and will be responsible for restoring impacted roadway to pre-construction conditions as required through the permitting process.[58]

Horseshoe Bend states that during operations, the operation the facility will not require on-site employees for its regular operation. Approximately two employees may visit the site up to a few times a month for inspection and to perform or coordinate maintenance as needed. A few additional employee or contractor trips may occur during the vegetative growing system for activities such as grass cutting. With only a few occasional employee trips per month, operation of the facility is not anticipated to adversely impact area traffic.[59]

The Wells Engineering Report adds no additional factual information regarding traffic impact. It echoes the traffic assessment summary of Horseshoe Bend, stating due to the low traffic volumes of existing roadways near the proposed Horseshoe Bend Solar Facility (fewer than 1,500 vehicles per day), construction is not anticipated to cause level of service degradations, generating fewer than 200 additional vehicles per 14-hour working day (7 a.m. to 9 p.m.) during the eight to 12-month construction period. Appropriate traffic control such as warning signs and flaggers will be provided during construction to minimize traffic impacts. Once completed, the facility will have occasional employees on site (two or fewer daily vehicles), so long-term traffic impacts will be

[58] *Id.*

[59] *Id.*

negligible. Horseshoe Bend will restore roadways impacted by construction as required through the permitting process.[60]

The Wells Engineering Report also finds dust impacts are anticipated to be minor, and the contractor will work to minimize dust impacts. This again echoes the findings of the noise and traffic impact study, as Horseshoe Bend states that fugitive dust is anticipated during construction from land disturbance and use of unpaved driveways, but due to the low-density housing and rural character near the site, and the large size of the site, fugitive dust minor impacts are expected.[61] Furthermore, Horseshoe Bend advises to reduce potential dust impacts, open-bodied trucks will be covered while in motion, internal roadways will be constructed from compacted gravel, and water may be applied to the gravel roads to reduce dust generation as needed.[62]

The Wells Engineering Report recommends the following mitigation measures to ensure that impacts to roadways will be kept to a minimum.

1. Create an over-all plot plan indicating all water bodies, bridges, culverts, access roads, power lines, residential and public structures, etc.

2. Provide site access control as per NERC, NFPA, and OSHA guidelines as necessary.

3. Horseshoe Bend shall evaluate the existing bridges for their load bearing capacity for construction, operation, and Maintenance. During our site visit between stop

[60] Wells Engineering Report, Appendix B at 16.

[61] Application, Volume II, Site Assessment Report, Attachment F Noise and Traffic Study at 6.

[62] *Id.*

#1 and #2 there is a culvert designed for farm equipment but may not be able to sustain loaded tractor trailers used for delivering equipment.

4. Horseshoe Bend shall construct new bridges wherever required necessary.

5. Because most of the roads adjacent and through the site are narrow and, in some cases, curvy, Horseshoe Bend shall submit a detailed plan on how traffic safety will be maintained during the construction of the facility ten days before commencing construction.

6. Horseshoe Bend, the applicant shall submit in writing the specific plan to control fugitive dust and PM 10 during the construction process ten days prior to commencing construction.

The Siting Board agrees with the mitigation measures recommended in the Wells Engineering Report, which were generally accepted by Horseshoe Bend, and will require Horseshoe Bend to implement those measures. To further ensure that traffic impacts during construction are kept to a minimum, the Siting Board will also require the following mitigation measures:

1. Horseshoe Bend shall develop a traffic management plan to minimize the impacts of any traffic increase and keep traffic safe. Any such traffic management plan shall also identify any noise concerns during the construction phase and develop measures that would address those noise concerns.

2. Horseshoe Bend shall limit the construction activity, process, and deliveries to the hours of 8 a.m. and 6 p.m. Monday through Saturday. These hours represent a reasonable timeframe to ensure that nearby property owners are not too impacted by the construction activities.

3. Horseshoe Bend must commit to fix or fully compensate the appropriate transportation authorities for any damage or degradation to roads or bridges that it causes or to which it materially contributes to.

4. Horseshoe Bend shall develop special plans and obtain necessary permits before bringing heavy loads, especially the substation transformer, onto state or county roads in the vicinity. Heavy loads over state-designated deficient bridges should be avoided.

5. Horseshoe Bend shall properly maintain construction equipment and follow best management practices related to fugitive dust throughout the construction process. This should keep dust impacts off-site to a minimal level.

Anticipated Noise Level

According to Horseshoe Bend's Noise and Traffic Study,[63] there are two residences that are approximately 100 feet from the project boundary at the closest point.[64] In addition, there is a Neighborhood as defined by KRS 278.704(4) that contains eight homes, two of which are owned by participating landowners.[65] Horseshoe Bend has requested a deviation from the 2,000-foot setback requirement discussed in another section of the Order. The closest home, of a non-participating landowner, within the neighborhood is approximately 725 feet from the project boundary.[66]

Horseshoe Bend has committed, by setting "[a]pplicable minimum setbacks" to placing the central inverters and energy storage devises a minimum of 300-feet from non-

[63] Application, Volume II, Site Assessment Report, Attachment F, Noise and Traffic Study.

[64] *Id.* at 2 and Figure 3.

[65] Horseshoe Bend Motion for Deviation (filed Feb. 23, 2021) at 3 and Exhibit 4.

[66] *Id.*, Exhibit 4.

participating residences and a minimum of 150-feet from non-participating adjoining parcels.[67] At this distance the anticipated sound level of the inverters would be approximately 47 dBA. All other equipment would be placed at a minimum of 150-feet from non-participating residences.[68] The Substation is expected to produce a sound level of 71 dBA and at 150-feet this would equate to 37 dBA. Horseshoe Bend has estimated that the ambient sound level is normally at 50 dBA and adding in the noise associated with the equipment is would operate at a level of 51.5 dBA.[69]

Horseshoe Bend's Noise and Traffic Study indicates that the existing local sound environment around the project area comes from existing traffic on roadways.[70] There are two historic cemeteries located near the southern border of the project within 300 feet.[71]

Horseshoe Bend provides that construction of the facility is expected to commence in September of 2021 and be completed in June of 2022. The noisiest phase of construction is anticipated to be the foundations phase due to pile driver use and would last from December of 2021 to May of 2022 with planned pauses the weeks of December 27, 2021, and January 3, 2022. Foundations/Poles would be the loudest activity during this time, which generates a maximum noise level between 70 dBA and 125 dBA at the source.[72] Horseshoe Bend further notes that construction work is expected to progress

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[67] Application, Volume II, Site Assessment Report, Attachment F, Noise and Traffic Study at 4.

[68] *Id.*

[69] *Id.* at 1.

[70] *Id.*

[71] *Id.*

across the site such that equipment and activities would only be in a single area for a short period and that the potential for adverse noise impacts at any one receptor is expected to only occur for a short period.[73]

Horseshoe Bend states that it did not find any relevant county or state noise ordinance or standard that was applicable.[74] Horseshoe Bend proposes to have construction activities daily during the hours of 7 a.m. to 9 p.m.[75]

Horseshoe Bend's Noise and Traffic Study analysis concludes that the ambient daytime sound level for the area surrounding this project is anticipated to be between 50 and 60 dBA.[76] It is anticipated at 300 feet the sound level contribution from the operation of a Central Inverter will be approximately 47.6 dBA, at 150 foot the sound level contribution from the operation of the Substation will be approximately 37.0 dBA and String Inverters, if used in place of Central Inverters, would be approximately 40.0 dBA.[77]

The Wells Engineering Report likewise notes that noise issues stem from construction activities and operational components of the solar facility. During construction, noise will include graders, bulldozers, excavators, dozers, dump trucks, and other equipment. During operation of the proposed solar facility, noise will be emitted from transformers, inverters, and the tracking motors which rotate the panels to track the

[72] *Id.* at 2.

[73] *Id.*

[74] *Id.* at 1.

[75] *Id.*

[76] *Id.* at 4.

[77] *Id.* at 5.

sun. The report further notes that distance from noise emitters to noise receptors also matters, since the further a noise receptor from a noise emitter, the less noise impact overall. The Wells Engineering Report contained no data or analysis contrary to the Horseshoe Bend Noise and Traffic Study. The Wells Engineering Report echoed one specific mitigation measure to address any potential noise impacts detailed below.[78]

The Wells Engineering Report recommends the following mitigation measures to address any potential noise impacts.

1. Notices to neighbors regarding potential construction and operation noises, as well as limits on working hours during the construction period.

In response to Response to Siting Board Staff's Post-Hearing Requests for Information, Item 4, Horseshoe Bend proposed the following mitigation measures:

1. Horseshoe Bend's construction activity, process, and deliveries shall be limited to the hours of 7 a.m. and 9 p.m. daily.

2. Within 500 feet of a neighboring non-participating residential home, construction hours for the pile driver shall be limited to the hours of 8 a.m. and 6 p.m. daily.

3. Within 500 feet of a neighboring place of worship, construction hours for the pile driver shall be limited to the hours of 8 a.m. and 6 p.m. Monday through Saturday, and 1 p.m. and 6 p.m. on Sunday.

The Siting Board further finds that the noise levels created during the construction phase could cause adverse impacts to the nearby property owners. The Siting Board finds that modification to reflect a construction time period–with no earlier start than 8 a.m.

[78] Wells Engineering Report at 19.

with a construction stop at 6 p.m. Monday through Saturday–should be made. To further ensure as little noise impacts as reasonably possible during the construction period, the Siting Board will require the following additional mitigation measures.

1. Horseshoe Bend shall notify residents and businesses within 500 feet of the project boundary about the construction plan, the noise potential, and the mitigation plans at least one month prior to construction start.

2. Horseshoe Bend shall remain in contact with nearby residents to confirm that noise levels are not unduly high or annoying after the pounding and placement of the solar panel racking begins and mitigate those effects as needed.

3. If the pile driving activity occurs within 1,500 feet of a noise sensitive receptor, Horseshoe Bend shall implement a construction method that will suppress the noise generated during the pile driving process (i.e., semi-tractor and canvas method; sound blankets on fencing surrounding the solar site; or any other comparable method).[79]

4. Horseshoe Bend shall implement a Customer Resolution Program to address any complaints from surrounding landowners. Horseshoe Bend shall also submit annually a status report associated with its Customer Resolution Program, providing, among other things, the individual complaints, how Horseshoe Bend addressed those complaints, and the ultimate resolution of those complaints identifying whether the resolution was to the complainant's satisfaction.

[79] *See* Case No. 2020-00280, *Electronic Application of Ashwood Solar I, LLC for a Certificate of Construction for an Approximately 86 Megawatt Merchant Electric Solar Generating Facility in Lyon County, Kentucky Pursuant to KRS 278.700 and 807 KAR 5:110* (Ashwood Solar's Response to Siting Board Staff's Post-Hearing Request for Information, Item 2) (filed May 25, 2021), Item 2.

5. Horseshoe Bend shall place panels, inverters and substation equipment no closer to noise receptors than indicated in Horseshoe Bend's noise and traffic study, but additional mitigate measures are required for anticipated noises issues for noise receptors regarding certain facilities. Specifically, based on the noise information provided by the applicant the Siting Board has four mitigation measures beyond that recommended in the noise and traffic study: (1) the Central Inverter no closer to a noise receptor than 450 feet, (2) the String Inverter no closer to a noise receptor than 150 feet, (3) Solar Panels no closer to a noise receptor than 150 feet, and (4) Energy Storage no closer to a noise receptor than 400 feet.

Mitigation Measures Proposed by Horseshoe Bend

Horseshoe Bend's SAR contained the following mitigation measures that it plans to implement.

1. Setbacks for solar equipment from roads and property lines, with increased setbacks for certain equipment, and additional setbacks from two non-participating residential homes that are located relatively close to property lines. Horseshoe Bend proposes the following setbacks for solar equipment: 50 feet from adjacent roadways, 25 feet from non-participating adjoining parcels, and 150 feet from non-participating residences. The applicant proposes the following additional setbacks for central inverters, if used, and energy storage systems: 150 feet from property boundaries and 300 feet from non-participating residences. The security fencing, vegetative buffer and pollinator plantings shall not be subject to these setback restrictions.

2. Planting of native evergreen species as a visual buffer to mitigate viewshed impacts; see the site development plan in Attachment A for proposed planting areas, and

Section 1 of the application for the proposed specifications of the vegetative buffer. Plantings are primarily proposed in areas directly adjacent to the project that lack existing vegetation. Members of the development team have met with neighbors to ensure they are aware of the project and the locations of the proposed vegetative buffers.

3. Cultivation of at least two acres of native pollinator-friendly species onsite; see the site development plan in Attachment A for the anticipated pollinator area, and Section 1 of the application for information about pollinators and solar.

4. Complying with all applicable requirements of the NESC, including requirements that apply to security fencing and signage. The community has provided feedback that frequent signage along the security fence is unsightly, and should be tempered in use. The NESC includes requirements on safety signage along the security fence, which the project will comply with.

5. Leaving existing vegetation between solar equipment and neighboring residences in place, to the extent practicable, to help screen the project and reduce visual impacts.

6. Setbacks of at least 100 feet from two historic cemeteries that are located on the project site. Information on these cemeteries is provided below.

7. Retrofit plan, where Horseshoe Bend shall demonstrate to the Siting Board that the retrofit facility will not result in a material change in the pattern or magnitude of impacts compared to the original project. Otherwise, a new SAR will be submitted for Siting Board review; and if Horseshoe Bend intends to retire the currently proposed facility and employ a different technology, Horseshoe Bend shall also prepare a new SAR for Siting Board review.

The Siting Board has reviewed the mitigation measures that have either been proposed by Horseshoe Bend, measures that have been accepted by Horseshoe Bend in response to discovery requests or recommended in the Well Engineering Report and have modified certain of those measures, as well as mitigation measure specifically requested by the Siting Board itself. The Siting Board finds that the mitigation measures as proposed and as modified herein by the Siting Board are appropriate and reasonable.

The Siting Board finds that Horseshoe Bend's SAR complies with all of the statutory requirements of KRS 278.708 subject to the mitigation measures and conditions imposed in this Order and the attached Appendix A.

II. Requirements under KRS 278.710(1)

In addition to the evaluation of the factors contained in the SAR, KRS 278.710(1) directs the Siting Board to consider the following additional criteria in rendering its decision:

- Economic impact on the affected region and state;
- Existence of other generation facilities;
- Local planning and zoning requirements;
- Potential impact on the electricity transmission system;
- Compliance with statutory setback requirements; and
- History of environmental compliance.

Economic Impact on Affected Region and the State

According to Horseshoe Bend's economic impact report, the proposed solar facility will generate lasting and significant positive economic and fiscal impacts on the entire affected region and the state. Such impacts includes the creation of hundreds of construction jobs, expansion of the local tax base, and the benefits of having a long-term employer and corporate citizen in the region that has a strong commitment to investing in

the communities it serves. Horseshoe Bend states that it and the County government are negotiating a financial agreement where it will make annual payments in lieu of taxes (PILOT) to local government jurisdictions. The project will pay approximately $1.44 million in PILOT payments over the 40-year life of the proposed solar facility.[80] The estimated capital cost of the facility is approximately $90-120 million.[81]

During the project construction phase, Horseshoe Bend estimates that approximately 150 workers will be hired with a payroll of $7.5 million. The total economic impact is estimated to be 186 total full-time equivalent jobs in the County.[82] The vast majority of these jobs will be filled by craft workers and contractors. The 186 jobs translate to a projected injection of approximately $9.92 million in new wages into the local economy, which will help support local businesses.[83] The ongoing economic impact from the project's operational phase is estimated to be very small relative to the one-time impacts from the construction phase.[84]

Wells Engineering did not evaluate the economic impact of the project.

Having reviewed the record, the Siting Board finds that the Horseshoe Bend solar facility will have a positive economic impact on the region. The Siting Board notes that the solar facility will be one of the very few utility-scale renewable generation resource in the state.

Existence of Other Generating Facilities

[80] Application, Volume I, Attachment I Economic Report at 1 and 5.

[81] *Id.*

[82] *Id*. at 2–3.

[83] *Id.*

[84] *Id.* at 106.

Horseshoe Bend states that it is rare for utility-scale solar projects to be co-located with existing electricity generating infrastructure, such as a coal or natural gas fired power plant. Efforts were made to site the Project where there is existing electricity transmission infrastructure.[85] The project will interconnect to an on-site, existing transmission line owned by EKPC. At the project's expense, EKPC will build a new tap line to interconnect the Project.[86]

KRS 278.710(1)(d) provides that the Siting Board must consider whether a merchant plant is proposed for a site upon which facilities capable of generating 10 MW or more of electricity are currently located. Although the site upon which the Horseshoe Bend solar facility will be located does not contain any other generating facilities, the Siting Board notes the selected site will encompass an existing transmission line and Horseshoe Bend will be able to directly interconnect its solar facility to that of the existing transmission line without the need for any additional land. Also, as previously determined, the generally passive characteristics of the solar facility will be compatible with the surrounding area.

Local Planning and Zoning Requirements

Horseshoe Bend states that the proposed solar facility will be located entirely in Green County. Horseshoe Bend notes that there are no setback requirements established by a planning and zoning commission for the location of the project, and no noise ordinance that applies to the Project. In fact Horseshoe Bend submitted a letter

[85] Application, Volume 1 at 11.

[86] *Id.*

from Green County Judge Executive John H. Frank confirming the lack of planning and zoning and noise ordinance with its application.[87]

The Siting Board finds that Horseshoe Bend's certification that the proposed facility will meet all local planning and zoning requirements that existed on the date the application was filed satisfies the requirements of KRS 278.710(1)(e).

Impact on Transmission System

Horseshoe Bend states that the proposed solar facility will be located within the territory of PJM Interconnection LLC (PJM). PJM is the Regional Transmission Organization for 13 states including parts of Kentucky, and is managing the interconnection of the project in coordination with EKPC, which owns the transmission infrastructure to which the project is proposing to interconnect.[88] The interconnection study process for PJM involves three study phases: Feasibility Study, System Impact Study, and Facilities Study. The purpose of the feasibility study is to determine a plan, with ballpark cost and construction time estimates, to connect the proposed Horseshoe Bend solar facility to the PJM network at a location specified by Horseshoe Bend. PJM issued the Feasibility Study Reports on the Horseshoe Bend project in January 2020.[89] The Feasibility Study shows that Horseshoe Bend will be responsible for total upgrade costs of approximately $7,700,000, upgrades consisting of attachment facilities, a direct connection network upgrade, and a non-direct connection network upgrade.[90]

[87] *Id.* at 6.

[88] Application, Volume 1 at 13.

[89] *Id.*

[90] Application, Volume 1, Attachment G Horseshoe Bend Feasibility Study Report at 6.

The System Impact Study determines potential impacts to the regional electric grid and the need for any network upgrades to mitigate potential impacts. PJM issued the System Impact Study Report for the Horseshoe Bend solar facility in August 2020. The System Impact Study Report indicated that Horseshoe Bend will be responsible for total upgrade costs of approximately $7,700,000, upgrades consisting of attachment facilities, a direct connection network upgrade, and a non-direct connection network upgrade.[91]

Horseshoe Bend states that the Facilities Study is currently underway and expected to be issued in mid-2021. Concurrent with this final step, LG&E/KU is completing an affected systems study to determine whether there will be any upgrades required to LG&E/KU facilities. If so, applicable upgrade costs will be borne by the Project. PJM has confirmed that there are no other utilities that have the potential to be affected by the Project or that require affected systems studies.[92]

KRS 278.710(f) provides that the Siting Board should consider whether the additional load imposed upon the electricity transmission system by use of the Horseshoe Bend solar facility will adversely affect the reliability of service for retail customers of electric utilities regulated by the Public Service Commission (PSC). Having reviewed the record, the Siting Board finds that the proposed solar facility will not adversely impact the reliability of service provided by retail electric utilities under the PSC's jurisdiction based upon Horseshoe Bend's commitment to the interconnection process and protocols and its acceptance of any cost obligations resulting from the interconnection process and

[91] Application, Volume I, Attachment H Horseshoe Bend System Impact Study Report at 6.

[92] Application, Volume I at 15.

protocols consistent with the requirements under KRS 278.212. The Siting Board finds that Horseshoe Bend has satisfied the requirements of KRS 278.710(f).

Compliance with Setback Requirements

Horseshoe Bend's application acknowledges that KRS 278.706(2)(e) requires all proposed structures or facilities used for generation of electricity to be at least 2,000 feet from any residential neighborhood, school, hospital, or nursing home facility subject to a certain exception that is not applicable in this instance. KRS 278.700(6) defines "residential neighborhood" as a populated area of five or more acres containing at least one residential structure per acre. Horseshoe Bend states that there is one residential neighborhood. Horseshoe Bend filed a motion, pursuant to KRS 278.704(4), seeking a deviation from the 2,000 feet setback requirement.[93] Within the single nearby residential neighborhood there are eight residential structures in this area. Of the eight residential structures, the two residences located closest to the project footprint are owned by a landowner who is leasing land to the project, and is supportive of the project's location on his property.

KRS 278.704(4) provides that the Siting Board may grant a deviation from the setback requirements if it is determined that the proposed facility as designed and as located would meet the goals of KRS 224.10-280 (Cumulative Environmental Assessment), KRS 278.010 (definitions), KRS 278.212 (costs of upgrading existing grid), KRS 278.214 (curtailment of service), KRS 278.216 (site assessment report), KRS 278.218 (transfer of ownership), and KRS 278.700 to KRS 278.716 (Siting Board requirements) at a distance closer than the required 2,000 feet.

[93] Applicant's Motion for Deviation from Setback Requirements (filed Feb. 23, 2021).

Subject to certain exceptions not applicable in this matter, KRS 224.10-280 requires a person to submit a cumulative environmental assessment (CEA) to the Kentucky Energy and Environment Cabinet (Cabinet) along with a fee before beginning construction of an electric power plant. Although it is unaware of any regulations that have been promulgated regarding CEAs, including any regulations that would establish a fee for the processing of a CEA, Horseshoe Bend developed a CEA for submission to the Cabinet. Horseshoe Bend states that the CEA provides an in-depth analysis of the potential air pollutants, water pollutants, wastes, and water withdrawal associated with the proposed merchant solar facility. The CEA shows that the Horseshoe Bend solar facility will produce zero emissions and is not expected to emit any of the criteria pollutants such as particulate matter, carbon monoxide, sulfur dioxide, nitrogen oxide, volatile organic contaminants, or lead. Although there will be some indirect air emissions during construction and operations from the use of vehicles and mowing, respectively, no air quality permit is required for these construction or ancillary activities. With respect to water evaluation, Horseshoe Bend states that with the use of best management practices, operations and maintenance of the proposed solar facility are expected to result in a net, long-term beneficial effect to surface waters.

With respect to waste evaluation, the CEA notes that construction activities will generate solid waste consisting of construction debris and general trash, such as wooden crates, pallets, flattened cardboard module boxes, plastic packaging, and excess electrical wiring. No special wastes as defined in KRS 224.50–760 are anticipated to be generated during construction or operations and maintenance. No existing structures would be demolished. To the extent feasible, Horseshoe Bend will recycle construction

waste and material that cannot be recycled will be disposed off-site at a permitted facility. The project will also generate very small amounts of hazardous waste, which will be managed offsite at a permitted facility.

With respect to managing water withdrawal and usage, the Horseshoe Bend solar facility will primarily utilize groundwater from existing onsite wells to provide water needed for construction activities. Construction-related water use would support site preparation (including dust control, if applicable) and grading activities. Similar to other solar facilities, the Horseshoe Bend solar project is not water intensive during the operational phase.

Horseshoe Bend states that, based upon the CEA submitted to the Cabinet, the goals of the requirements of KRS 224.10-280 have been met.

With respect to KRS 278.010, Horseshoe Bend states that this statutory provision sets forth the definitions to be used in conjunction with KRS 278.010 to KRS 278.450, KRS 278.541 to KRS 278.544, KRS 278.546 to KRS 278.5462, and KRS 278.990. Horseshoe Bend asserts that the Siting Board's authority begins with KRS 278.700 and extends through KRS 278.716 and any applicable provision of KRS 278.990. Horseshoe Bend contends that in filing a complete application pursuant to the applicable statutes in this proceeding, the company has satisfied the goal of providing the required information utilizing the definition of any applicable term defined in KRS 278.010.

KRS 278.212 requires the filing of plans and specifications for electrical interconnection with merchant electric generating facility and imposes the obligation upon a merchant electric generating developer for any costs or expenses associated with upgrading the existing electricity transmission grid as a result of the additional load caused by a merchant electric generating facility. Horseshoe Bend avers that it has met

the goals of KRS 278.212 because Horseshoe Bend will comply with all applicable conditions relating to electrical interconnection with utilities by following the PJM interconnection process. Additionally, Horseshoe Bend states that it will accept responsibility for appropriate costs which may result from its interconnecting with the electricity transmission grid.

KRS 278.214 governs the curtailment of service and establishes the progression of entities whose service may be interrupted or curtailed pursuant to an emergency or other event. Horseshoe Bend states that it will abide by the requirements of this provision to the extent that these requirements are applicable.

KRS 278.216 requires utilities under the jurisdiction of the Kentucky Public Service Commission (PSC) to obtain a site compatibility certificate before beginning construction of an electric generating facility capable of generating more than 10 megawatts. An application for a site compatibility certificate should include the submission of a site assessment report as prescribed in the applicable Siting Board statutes. Horseshoe Bend states that it is not a utility under the jurisdiction of the Kentucky PSC. However, Horseshoe Bend states that it has nonetheless met the requirements of KRS 278.216 by complying with the requirements of KRS 278.700 *et seq.*, including the submission of a site assessment report.

KRS 278.218 provides that no transfer of utility assets having an original book value of $1 million or more without prior approval of the Kentucky PSC if the assets are to be transferred by reasons other than obsolescence or the assets will continue to be used to provide the same or similar service to the utility or its customers. Horseshoe Bend states that it is not a utility as that term is defined in KRS 278.010(3). However, to

the extent Siting Board approval may at some time be required for change of ownership or control of assets owned by Horseshoe Bend, Horseshoe Bend states that it will abide by the applicable rules and regulations which govern its operation.

KRS 278.700 *et seq.* governs the Siting Board's jurisdiction and process. Horseshoe Bend states that it has met the goals set forth in these provisions as evidenced by the application in its entirety. Horseshoe Bend further states that it has provided a comprehensive application with a detailed discussion of all of the criteria applicable to its proposed facility under KRS 278.700–278.716.

Having reviewed the record and being otherwise sufficiently advised, the Siting Board finds that Horseshoe Bend has demonstrated the proposed facility as designed and as located would meet the goals of the various statutes set forth in KRS 278.704(4) at a distance closer than the required 2,000 feet and is therefore permitted to a deviation from the 2,000 feet setback requirement. Accordingly, the Siting Board reduces the setback requirement from 2,000 feet to 600 feet. The Siting Board notes that the mitigation requirements imposed in the Compatibility with Scenic Surroundings and Noise and Anticipated Noise Level sections will also provide some level of protection for persons occupying a property adjacent to the proposed solar facility with respect to noise, visual obstruction of scenic views, and traffic.

History of Environmental Compliance

Horseshoe Bend states neither it, nor any entity with ownership interest in the project, has violated any state or federal environmental laws or regulations, and there are

no pending actions against Horseshoe Bend, nor any entity with ownership interest in the project.[94]

KRS 278.710(1)(i) directs the Siting Board to consider whether the applicant has a good environmental compliance history. In light of Horseshoe Bend's verified statement and no evidence to the contrary, the Siting Board finds that Horseshoe Bend has satisfied the requirements of KRS 278.710(1)(i).

Decommissioning

According to Horseshoe Bend, the proposed solar facility would have an expected useful life of 40 years. Horseshoe Bend has not yet provided a formal decommissioning plan, but during the formal evidentiary hearing held on April 22, 2021, Ms. Carson Harkrader CEO of Carolina Solar Energy, parent of Horseshoe Bend, provided testimony that Carolina Solar/Horseshoe Bend was committed to developing a formal decommissioning plan for the project. Additionally Ms. Harkrader referenced the Supplement to Mitigation Measures filed with the Commission on February 12, 2021. In the Supplement to Mitigation Measures Horseshoe Bend commits itself as well as its successors and assigns to decommission the entire site if the project ceases producing electricity for a period of more than 12 months.[95] Horseshoe Bend advises decommissioning shall involve the removal of all solar panels, racking, and equipment including concrete pads and trenched electrical wiring. Furthermore, fencing and internal access roads shall also be removed, unless the landowner states in writing that they prefer fencing and internal roads to remain in place. This mitigation requirement shall be

[94] Application, Volume I at 16.

[95] Supplement to Mitigation Measures (filed Feb. 12, 2021) at 2.

deferred if Horseshoe Bend continues with its currently proposed operation beyond 40 years.[96]

The Wells Engineering Report does not comment on, nor make any mitigation recommendations as far as decommissioning.

The Siting Board finds that decommissioning is an important consideration to ensure the land used during the life of the proposed solar facility can be returned to its original use as well as ensuring that such an obligation can be properly enforced. Toward that end, the Siting Board will require the explicit or formal decommissioning plan be developed. This plan should be filed with the Siting Board or its successors. The decommissioning plan must include a commitment to remove solar farm facility equipment, solar panels and any other improvements and restore the land to its previous use upon the end of the project's life. Restoring the land to its previous uses requires removal of all solar facilities structures, debris, and associated equipment installed by Horseshoe Bend at any depth. This requirement holds regardless of the depths at which Horseshoe Bend is required to remove solar facilities structures, debris, and associated equipment it installed in under any leases agreement. Restoration of the land also includes removal of all infrastructure including concrete mountings and foundations as well as soil and vegetation restoration.

Horseshoe Bend shall also be required to file a bond equal to the amount necessary to effectuate the explicit decommissioning plan naming Green County as a third-party beneficiary, in addition to the lessors of the subject property insofar as the leases contain a decommissioning bonding requirement, so that Green County will have

[96] *Id.*

the authority to draw upon the bond to effectuate the decommissioning plan. The bond should be in place at the commencement of operation. The bond amount shall be reviewed every five years at Horseshoe Bend's expense to determine and update the cost of removal amount. This review shall be conducted by an individual or firm with experience or expertise in the costs or removal or decommissioning of electric generating facilities. Certification of this review shall be provided to the Siting Board or its successors and the Madison County Fiscal Court. Such certification shall be by letter and shall include the current amount of the anticipated bond and any change in the costs of removal or decommissioning.

Accordingly, the Siting Board will require Horseshoe Bend to implement the decommissioning measures set forth above as on-going conditions of the certificate sought in this matter.

CONCLUSION

After carefully considering the criteria outlined in KRS Chapter 278, the Siting Board finds that Horseshoe Bend has presented sufficient evidence to support the issuance of a deviation from the setback requirements of KRS 278.704(2) and a Certificate of Construction for the proposed merchant solar facility. The Siting Board conditions its approval upon the full implementation of all mitigation measures described herein and listed in Appendix A to this Order. A map showing the location of the proposed solar generating facility is attached hereto as Appendix B.

IT IS THEREFORE ORDERED that:

1. Horseshoe Bend's application for a Certificate to Construct an approximately 60 MWac merchant solar electric generating facility in Green County,

Kentucky, is conditionally granted subject to full compliance with the mitigation measures and condition prescribed in Appendix A.

2. Horseshoe Bend's motion for deviation from the 2,000 feet setback requirement is granted.

3. Horseshoe Bend shall fully comply with the mitigation measures and conditions prescribed in Appendix A.

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By the Kentucky State Board on Electric Generation and Transmission Siting

ENTERED
JUN 11 2021
bsb
KENTUCKY PUBLIC SERVICE COMMISSION

ATTEST:

Executive Director
Public Service Commission
on behalf of the Kentucky State Board on Electric Generation and Transmission Siting

APPENDIX A

APPENDIX TO AN ORDER OF THE KENTUCKY STATE BOARD ON ELECTRIC GENERATION AND TRANSMISSION SITING IN CASE NO. 2020-00190 DATED JUN 11 2021

MITIGATION MEASURES AND CONDITIONS IMPOSED

The following mitigation measures and conditions are hereby imposed on Horseshoe Bend Solar, LLC (Horseshoe Bend) to ensure that the facilities proposed in this proceeding are constructed as ordered.

1. Leaving existing vegetation between solar equipment and neighboring residences in place, to the extent practicable, to help screen the Project and reduce visual impact.

2. Ten days prior to the commencement of construction, Horseshoe Bend will provide a detailed plan on how they will protect the water resources in the project area. The site assessment documents in several locations says that certain mitigation measures regarding erosion and protection of water resources “may” be carried out. This needs to be clearly specified. The primary focus should be on preventing turbidity being added to local water sources as a result of erosion during construction.

3. Create an over-all plot plan indicating all water bodies, bridges, culverts, access roads, power lines, residential and public structures, etc.

4. Provide Site access control as per NERC, NFPA, and OSHA guidelines as necessary.

5. Horseshoe Bend shall evaluate the existing bridges for their load bearing capacity for construction, operation, and Maintenance. During our site visit between stop

#1 and #2 there is a culvert designed for farm equipment but may not be able to sustain loaded tractor trailers used for delivering equipment.

6. Horseshoe Bend shall construct new bridges wherever required necessary.

7. Because most of the roads adjacent and through the site are narrow and, in some cases, curvy, Horseshoe Bend shall submit a detailed plan on how traffic safety will be maintained during the construction of the facility ten days before commencing construction.

8. Horseshoe Bend, the applicant shall submit in writing the specific plan to control fugitive dust and PM 10 during the construction process ten days prior to commencing construction.

9. Horseshoe Bend should develop a traffic management plan to minimize the impacts of any traffic increase and keep traffic safe. Any such traffic management plan shall also identify any noise concerns during the construction phase and develop measures that would address those noise concerns.

10. Horseshoe Bend shall limit the construction activity, process, and deliveries to the hours of 8 a.m. and 6 p.m. Monday through Saturday. These hours represent a reasonable timeframe to ensure that nearby property owners are not too impacted by the construction activities.

11. Horseshoe Bend must commit to fix or fully compensate the appropriate transportation authorities for any damage or degradation to roads or bridges that it causes or to which it materially contributes to.

12. Horseshoe Bend shall develop special plans and obtain necessary permits before bringing heavy loads, especially the substation transformer, onto state or county

roads in the vicinity. Heavy loads over state-designated deficient bridges should be avoided.

13. Horseshoe Bend shall properly maintain construction equipment and follow best management practices related to fugitive dust throughout the construction process. This should keep dust impacts off-site to a minimal level.

14. Notices to neighbors regarding potential construction and operation noises, as well as limits on working hours during the construction period.

15. Horseshoe Bend shall notify residents and businesses within 500 feet of the project boundary about the construction plan, the noise potential, and the mitigation plans at least one month prior to construction start.

16. Horseshoe Bend shall remain in contact with nearby residents to confirm that noise levels are not unduly high or annoying after the pounding and placement of the solar panel racking begins and mitigate those effects as needed.

17. If the pile driving activity occurs within 1,500 feet of a noise sensitive receptor, Horseshoe Bend shall implement a construction method that will suppress the noise generated during the pile driving process (i.e., semi-tractor and canvas method; sound blankets on fencing surrounding the solar site; or any other comparable method).

18. Horseshoe Bend shall implement a Customer Resolution Program to address any complaints from surrounding landowners. Horseshoe Bend shall also submit annually a status report associated with its Customer Resolution Program, providing, among other things, the individual complaints, how Horseshoe Bend addressed those complaints, and the ultimate resolution of those complaints identifying whether the resolution was to the complainant's satisfaction.

19. Horseshoe Bend shall place panels, inverters and substation equipment no closer to noise receptors than indicated in Horseshoe Bend's noise and traffic study. But additional mitigate measures are required for anticipated noises issues for noise receptors regarding certain facilities. Specifically, the Siting Board has four mitigation measures beyond that recommended in the noise and traffic study: (1) the Central Inverter no closer to a noise receptor than 450 feet, (2) the String Inverter no closer to a noise receptor than 150 feet, (3) Solar Panels no closer to a noise receptor than 150 feet, and (4) Energy Storage no closer to a noise receptor than 400 feet.

20. Setbacks for solar equipment from roads and property lines, with increased setbacks for certain equipment, and additional setbacks from two non-participating residential homes that are located relatively close to property lines. Horseshoe Bend proposes the following setbacks for solar equipment: 50 feet from adjacent roadways, 25 feet from non-participating adjoining parcels, and 150 feet from non-participating residences. Applicant proposes the following additional setbacks for central inverters, if used, and energy storage systems: 150 feet from property boundaries and 300 feet from non-participating residences. The security fencing, vegetative buffer and pollinator plantings shall not be subject to these setback restrictions.

21. Planting of native evergreen species as a visual buffer to mitigate viewshed impacts; see the site development plan in Attachment A for proposed planting areas, and Section 1 of the application for the proposed specifications of the vegetative buffer. Plantings are primarily proposed in areas directly adjacent to the project that lack existing vegetation. Members of the development team have met with neighbors to ensure they are aware of the project and the locations of the proposed vegetative buffers.

22. Cultivation of at least two acres of native pollinator-friendly species onsite; see the site development plan in Attachment A for the anticipated pollinator area, and Section 1 of the application for information about pollinators and solar.

23. Complying with all applicable requirements of the National Electrical Safety Code, including requirements that apply to security fencing and signage. The community has provided feedback that frequent signage along the security fence is unsightly, and should be tempered in use. The National Electric Safety Code includes requirements on safety signage along the security fence, which the project will comply with.

24. Leaving existing vegetation between solar equipment and neighboring residences in place, to the extent practicable, to help screen the project and reduce visual impacts.

25. Setbacks of at least 100 feet from two historic cemeteries that are located on the Project site. Information on these cemeteries is provided below.

26. Retrofit plan, where Horseshoe Bend shall demonstrate to the Siting Board that the retrofit facility will not result in a material change in the pattern or magnitude of impacts compared to the original project. Otherwise, a new Site Assessment Report will be submitted for Siting Board review. If Horseshoe Bend intends to retire the currently proposed facility and employ a different technology Horseshoe Bend shall also prepare a new Site Assessment Report for Siting Board review.

27. Horseshoe Bend shall develop an explicit or formal decommissioning plan to carry out the land restoration. Land restoration requires removal of all facility components at any depth independent of the terms states in the lease agreement, while also performing soil and vegetation restoration. This plan shall be filed with the Siting

Board or its successors. This plan shall commit Horseshoe Bend to removing all facility components from the project site and Green County at the cessation of operations.

28. Horseshoe Bend shall file a bond, equal to the amount necessary to effectuate the explicit or formal decommissioning plan. The bond amount shall be reviewed every five years at Horseshoe Bend's expense to determine and update the cost of removal amount. This review shall be conducted by an individual or firm with experience or expertise in the costs or removal or decommissioning of electric generating facilities. Certification of this review shall be provided to the Siting Board or its successors and the Green County Fiscal Court. Such certification shall be by letter and shall include the current amount of the anticipated bond and any change in the costs of removal or decommissioning.

APPENDIX B

APPENDIX TO AN ORDER OF THE KENTUCKY STATE BOARD ON ELECTRIC GENERATION AND TRANSMISSION SITING IN CASE NO. 2020-00190 DATED JUN 11 2021

ONE PAGE TO FOLLOW

PROJECT LOCATION

GREEN COUNTY, KENTUCKY

REFERENCE:

© DIGITALGLOBE

LEGEND

PROJECT LOCATION BOUNDARY

CONSTRUCTION ENTRANCE

FIGURE 2
SITE PLAN

DRAWN BY: TMW DATE: 12/10/2020

CHECKED: RAK APPROVED: 12/10/2020

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