

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

In the Matter of:

ELECTRONIC APPLICATION OF AEUG)	
MADISON SOLAR, LLC FOR A CERTIFICATE OF)	
CONSTRUCTION FOR AN APPROXIMATELY 100)	CASE NO.
MEGAWATT MERCHANT ELECTRIC SOLAR)	2020-00219
GENERATING FACILITY IN MADISON COUNTY,)	
KENTUCKY PURSUANT TO KRS 278.700 AND)	
807 KAR 5:110)	

ORDER

On December 11, 2020, AEUG Madison Solar, LLC (AEUG Madison) filed an application requesting a Certificate of Construction to construct an approximately 100-megawatt alternating current (MWac) solar photovoltaic electric generating facility to be located at 2146 Red House Road, Richmond, Madison County, Kentucky.¹ AEUG Madison is a limited liability company organized under the laws of Delaware with a principal place of business in Chicago, Illinois.² The total acreage within the project boundary is 1,770 acres that has been predominantly used as pasture and agricultural.³ Of the total acreage, approximately 1,100 acres will be covered by project components.⁴ The on-site equipment will consist of 276,048 solar panels with a tracking system,

¹ Application at 1.

² *Id.*

³ AEUG Madison's Response to Siting Board Staff's First Request for Information (filed Feb. 9, 2021), Item 5. *See also*, Application Volume 1, Item 2, Description of Proposed Site.

⁴ *Id.*

36 inverters, substation, warehouse, operations and maintenance building.⁵ The facility's output will be transmitted and sold in the wholesale power market through the existing transmission line that crosses the property.⁶ 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 AEUG Madison's application, a deadline for the filing of the consultant's report, and an opportunity for AEUG Madison 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 Madison 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, and three requests for a public meeting. This Board did not act on the three

⁵ Application Volume 2, Item 1.1, Proposed Site Development Plan.

⁶ Application at 1.

requests for a public meeting. The Siting Board did, as part of the procedural schedule entered in this matter, set a hearing for April 15, 2021, which was conducted. Prior to the evidentiary portion of the hearing, there was an opportunity for the public to provide comments on the proposal.

AEUG Madison has filed responses to multiple rounds of discovery in this matter. Pursuant to KRS 278.708(5), the Siting Board retained a consultant, Wells Engineering, PSC, to review AEUG Madison'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 18, 2021. The Wells Engineering Report was filed on March 26, 2021. AEUG Madison submitted its response to the Wells Engineering Report on April 6, 2021. A formal evidentiary hearing was held on April 15, 2021. AEUG Madison filed responses to post-hearing data requests on May 14, 2021. The Siting Board received multiple public comments, both supporting and objecting to the proposed solar facility. The Siting Board also heard a number of public comments at the beginning of the April 15, 2021 formal evidentiary hearing in support of the proposed solar project. The matter now stands submitted for a decision.

PROPOSED AEUG MADISON SOLAR FACILITY

The proposed solar facility will be located at 2146 Red House Road, Richmond, Madison County, Kentucky. The facility will be located between Richmond and Ford.⁷ The solar facility site is roughly bounded by the intersection of State Highways 388 and 627 in the north, Dr. Robert R. Martin Bypass on the south, State Highway 388 on the

⁷ Application Volume 1, Item 2, Description of Proposed Site.

east, and U.S. Highway 75 on the west.⁸ The proposed site totals approximately 1,700 acres. AEUG Madison has entered into lease agreements with 14 adjoining landowners to establish site control.⁹ AEUG Madison anticipates using approximately 1,100 acres for the installation of the necessary solar equipment and facilities.¹⁰ AEUG Madison 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 and that project entrance gates are anticipated to be approximately 8 feet high and 12 feet wide to allow for emergency and maintenance access.¹¹ The solar facility has a rated capacity of 100 MWac and will be connected to East Kentucky Power Cooperative, Inc.'s (EKPC) Three Forks-Dale 138 kV transmission line which runs across the proposed site.¹² AEUG Madison states that, to the extent needed, electric service during construction and operation will be provided by either Clark Energy Cooperative or Kentucky Utilities Company (KU).¹³

⁸ *Id.*

⁹ Application Volume II, Site Assessment Report, Appendix B, Legal Description of Site.

¹⁰ AEUG Madison's Response to Siting Board Staff's First Request for Information, Item 5.

¹¹ Application Volume I, Item 2, Description of Proposed Site. See *also*, Application Volume II, Site Assessment Report, Item 1, Proposed Site Development Plan.

¹² Application Volume I, Item 2, Description of Proposed Site. See *also*, Application, Volume I, Appendix G, Economic Impact Report, page 10, and AEUG Madison's Response to Wells Engineering First Request for Information (filed Feb. 9, 2021) Item 21.

¹³ AEUG Madison's Response to Siting Board Staff's Second Request for Information (filed Mar. 9, 2021), Item 3, and Response to Wells Engineering Second Request for Information (filed Mar. 9, 2021), Item 4.

AEUG Madison notes that the area surrounding and within the project site consists of scattered rural residential development, commercial and retail businesses, communication facilities, and vehicular transportation network.¹⁴

Pursuant to KRS 278.706(2)(c), AEUG Madison notified 162 landowners whose property borders the proposed solar facility site via certified mail on December 7, 2020.¹⁵ AEUG Madison also published notice of the proposed solar facility in the *Richmond Register*, the newspaper of general circulation in Madison County, on December 8, 2020.¹⁶

In addition, AEUG Madison also engaged in public involvement program activities as required by KRS 278.706(2)(f) prior to the filing of its application. AEUG Madison informs that it has been active in the project area since March 2020.¹⁷ During that time AEUG Madison notes that it has met with landowners, stakeholders, and local government officials about the proposed 100-MW solar power project just north of Richmond.¹⁸ AEUG Madison also states that it held a public meeting on August 6, 2020, at the Madison County Public Library to inform the public about the solar project and receive comments from the public.¹⁹ AEUG Madison published notice of the public meeting in the July 21, 2020 edition of the *Richmond Register* and also mailed letters to

¹⁴ Application Volume I, Item 2, Description of Proposed Site.

¹⁵ Application Volume I, Item 3, Public Notice Evidence.

¹⁶ *Id.*

¹⁷ Application Volume I, Item 6, Public Involvement Report.

¹⁸ *Id.*

¹⁹ *Id.*

all adjoining landowners notifying them of the public meeting.²⁰ In addition to the public meeting, AEUG Madison held a virtual community meeting on August 3, 2020.²¹

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

In addition to the description of the proposed solar facility as described above, AEUG Madison states that the area around the project site can be generally described

²⁰ *Id.*

²¹ *Id.*

as rural, agricultural, with gently to moderately rolling hills and swales.²² The primary land use of the surrounding parcels is 16 percent residential, 25 percent agricultural, and 58 percent agricultural/residential. The solar facility will include 36 inverters, 276,048 modules, 2,556 trackers, a substation located near the northwest corner of the project and a warehouse and O&M Building located just south of the substation.²³

The project site is crossed by four overhead electric transmission lines, as well as electric distribution lines, and four underground natural gas transmission right-of-ways.²⁴ AEUG Madison states it will obtain all necessary consents and crossing agreements from pipeline operators in regard to any impact the project will have on existing pipelines.²⁵

There are no railways on the site, although there is one located just west of the project that will not be used for construction or operation of Madison Solar.²⁶ The Wells Engineering Report noted that the project's internal roads are intended to be gravel and that bridges may need evaluation for their load bearing capacity.

The project survey boundary is provided in AEUG Madison's application.²⁷ Even though Wells Engineering found that there may be some discrepancies between the application materials and the Madison County PVA records, probably due to a time lag, Wells Engineering's consultant, Cloverlake Consulting, found that the data contained in

²² Application, Volume I, Item 2, Description of Proposed Site at 2.

²³ Wells Engineering Report (filed Mar. 26, 2021), Appendix B at 2.

²⁴ AEUG Madison's Response to Wells Engineering Second Request for Information, Attachment A – Updated Layout, "General Layout", Revision 1.11, 02/03/2021.

²⁵ AEUG Madison's Response to Siting Board Staff's Second Request for Information, Item 2.

²⁶ Application, Volume II at 12.

²⁷ Application, Volume II, Appendix A, Figure A-1; Application, Volume II, Appendix B, Legal Description of Site.

the SAR is in compliance with the intent of the statute as it relates to legal boundaries of the proposed site.²⁸ The Wells Engineering Report recommends AEUG Madison submit a Site Survey Map indicating the property boundaries and update the property ownership records.

AEUG Madison Solar states it will secure its perimeter using six foot high chain link fencing topped by barbed wire and meeting NESC requirements. Project entrance gates are anticipated to be approximately 8 feet high and 12 feet wide to allow for emergency and maintenance access.²⁹ However, the Wells Engineering Report found that the conceptual design doesn't completely address Federal Energy Regulatory Commission (FERC) and North American Electric Reliability Corporation (NERC) requirements, since power plants greater than 75MW are classified as Critical Infrastructure Properties.³⁰

AEUG Madison states that the project will receive retail electric service for its operations building from the local retail electric supplier, Clark Energy Cooperative.³¹ If electric service is needed during construction, it will be provided by the appropriate provider for the electric service area, either Clark Energy Cooperative or Kentucky Utilities. Potable water and wastewater facilities will be needed, but on-site systems are being considered in lieu of connection to a public system.³²

²⁸ Wells Engineering Report, Appendix B at 4.

²⁹ Application, Volume I at 2; Application, Volume II, SAR at 1.

³⁰ Wells Engineering Report, 3.3.3. Legal Boundaries at 12.

³¹ AEUG Madison's Response to Siting Board Staff's Second Request for Information, Item 3; AEUG Madison's Response to Wells Engineering Second Request for Information, Item 4.

³² AEUG Response to Wells Engineering Report (filed Apr. 6, 2021) at 6.

The Wells Engineering Report concludes that AEUG Madison has generally complied with the requirements for describing the facility and a site development plan, as required by KRS 278.708. The Wells Engineering report recommends the following mitigation measures.

1. AEUG Madison should submit a revised site plan after the field survey is complete, and prior to the start of construction;
2. AEUG Madison should submit a Site Survey Map indicating the property boundaries and update the property ownership records;
3. AEUG Madison will ensure compliance with any NERC or FERC requirement as the design and engineering of the project is finalized;
4. Any changes to the facility, such as location of inverters, should be located in the revised site development plan; and
5. AEUG Madison will evaluate existing bridges for their load bearing capacity for construction, operation, and maintenance. Any new bridges should be included in the revised site development plan.

The Siting Board finds that AEUG Madison's detailed description of the proposed solar facility site complies with the requirement set forth in KRS 278.708(3)(a). The Siting Board also finds that the mitigation measures recommended in the Wells Engineering Report are reasonable and, therefore, will require AEUG Madison to implement the mitigation measures identified above.

Compatibility with Scenic Surroundings

AEUG Madison states that the proposed solar site is located between the towns of Richmond and Ford in Madison County, Kentucky. According to AEUG Madison, the

topography of the area consists of a series of gently to moderately rolling hills and swales.³³ AEUG Madison notes that land use surrounding the project area is primarily pasture and agriculture, with no large forested areas. Tree lines typically occur at parcel boundaries, in riparian zones, and along roadways. Adjoining land use is primarily a mix of residential and agricultural, which, according to AEUG Madison is very typical of solar farm sites.³⁴ AEUG Madison also notes that there is a nearby religious facility and minimal adjoining commercial uses.³⁵

AEUG Madison states the proposed project would introduce gray, low vertical, geometric elements into a green landscape and rolling terrain.³⁶ AEUG Madison also states existing vegetative buffers between the solar arrays and adjacent properties will be left in place to help reduce visual impacts.³⁷

AEUG Madison asserts that its solar facility, which uses tracking panels, is a passive use of the land that would blend in with the nearby rural and residential area. AEUG Madison asserts that the height of solar panels, which are generally six to ten feet off the ground, has a similar visual impact as compared to a typical greenhouse (which is similar in height) and lower than a single story residential home (which has a greater height).³⁸ AEUG Madison notes that, as compared to the proposed solar facility, if the

³³ Application, Volume 1, Item 2, Description of Proposed Site.

³⁴ Application, Volume 2, Site Assessment Report, Appendix A, Property Value Impact Report, at 3.

³⁵ *Id.*

³⁶ *Id.*, Item 2, Compatibility with Scenic Surroundings at 2.

³⁷ *Id.*

³⁸ *Id.* at 120.

subject property was developed with single family house, 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 the proposed panels.³⁹ AEUG Madison further indicates that it has identified certain properties on which a vegetative buffer will be implemented in order to mitigate view shed impacts for those properties.

The Wells Engineering Report finds that the visual setting surrounding the AEUG Madison solar site is primarily rural. The report also finds the combination of topography, existing tree lines, existing human made features, and setbacks proposed by the developer help mitigate any negative visual impacts. The report notes that views may differ from location to location but that surrounding places would generally be screened by vegetation and structures associated with development. Wells Engineering does indicate the major exceptions to this general screening are the project participants and a small number of neighboring landowners. The Wells Engineering Report suggests AEUG Madison develop screen plans to break up the visual effect of the relays on these properties.

The Wells Engineering Report concludes the impact on neighboring properties to be minimal and that proposed setbacks, local topography, existing vegetative buffers, and existing human made features mitigate visual impacts on the community. The Wells Engineering Report and AEUG Madison recommend the following mitigation measures to address visual impacts:

1. AEUG Madison should identify properties with the most effected view shed and provide a vegetation buffer to create a visual break.

³⁹ *Id.*

2. Existing vegetation between the solar arrays and residences shall be left in place, to the extent practicable, to help screen the solar facility and reduce visual impacts from the adjacent homes.

3. AEUG Madison has committed to working with homeowners and business owners to address concerns related to the visual impact of the solar facility on its neighbors.

4. AEUG Madison should provide a visual buffer between the facility and residences and other occupied structures with a line of sight to the facility to the satisfaction of the affected property owners. If vegetation is used, plants should reach eight feet high within four years. That vegetation should be maintained or replaced as needed.

5. AEUG Madison has pledged to select anti-glare panels and operate the panels in such a way that all glare from the panels is eliminated. Applicant will provide proof that glare will not occur from the facility or immediately adjust solar panel operations upon any complaint from those living, working, or travelling in proximity to the facility. Failing this, AEUG Madison will cease operations until the glare is rectified.

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 much of the day the solar panels

will be between six and ten feet high, which would be a lower profile than most single-family homes.

The Siting Board does have concerns regarding areas identified in the Wells Engineering Report which have view of the facility. Although AEUG Madison has committed to coordinating with neighboring property owners and businesses who raise concerns about the visual impact of the solar facility to provide visual buffering when it is appropriate and reasonable, the Siting Board finds that such a commitment does not provide reasonable assurance that the concerns of neighboring landowners and businesses will be adequately addressed as it leaves the decision making in the sole hands of AEUG Madison without any oversight. The Siting Board finds the proposed mitigation measures are reasonable and, therefore, will require AEUG Madison to implement the mitigation measures identified above with the exception to Mitigation Measure 4 which will be modified as follows:

4. AEUG Madison should provide a visual buffer between the facility and residences and other occupied structures with a line of sight to the facility to the satisfaction of the affected property owners. If vegetation is used, plants should reach eight feet high within four years. That vegetation should be maintained or replaced as needed. To the extent an affected property owner indicates to AEUG Madison that such a buffer is not necessary, AEUG Madison will need to obtain that property owner's written consent and submit such consent in writing to the Siting Board.

Impact on Property Values

With respect to impact on property values, AEUG Madison submitted a Property Value Impact Report from a certified real estate appraiser 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.⁴⁰ 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 and prepared further analysis of the information provided in AEUG Madison's Property Value Impact Report using both Cloverlake Consulting Services and Mary McClinton Clay, MAI. The Wells Engineering Report review noted that the methodology for the appraisal findings were missing from the report and the case studies reviewed were ones funded by solar developers.⁴¹ The Wells Engineering Report also indicates view shed as the primary area of concern but indicates that every site is different and every property within that site is different and to draw a consistent conclusion is difficult.

The review conducted by Mary McClinton Clay discusses the potential flaws and inconsistencies found with the case study data used in the report and concluded that the AEUG Madison's Property Value Impact Report 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 AEUG Madison

⁴⁰ Application, Volume II, Site Assessment Report, Appendix A, Property Value Impact Report.

⁴¹ Wells Engineering Report at 19.

Solar facility.⁴² Ms. Clay's review also examined the North Star case study which showed the number of effected 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. Ms. Clay's 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, AEUG Madison address the concerns brought forth stating that Mary McClinton Clay exhibited bias against solar development and her professional review of the AEUG Madison's Property Value Impact Report is defective and misrepresents the findings and conclusions of several of the studies reviewed.⁴³ The response clarifies that the AEUG Madison Property Value Impact 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.⁴⁴ Additionally, the appraisal methodology used in the AEUG Madison Property Value Impact Report is a Matched Pair Analysis or Paired Sales Analysis as indicated in the report and while not explained in detail it is a commonly used appraisal methodology for addressing the question of impact of an adjoining solar farm on property values. Also

⁴² Wells Engineering Report, Appendix C. See *a/so*, AEUG Madison' Response to the Wells Engineering Report, Exhibit 3, Kirkland Appraisals rebuttal letter at 1–5.

⁴³ AEUG Madison Solar, LLCs Response to the Wells Engineering Report, at 10–11.

⁴⁴ AEUG Madison Solar, LLCs Response to the Wells Engineering Report, Exhibit 3, Kirkland Appraisals rebuttal letter at 5.

included in the response was 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 geospatial analysis showed that relatively few homes would be impacted; and a 2020 University of Rhode Island study, which found the impact was limited to non-rural locations with the impact in rural locations effectively being zero following construction of a solar array.⁴⁵ In regards to the North Star case study, the response 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 in purchasing or selling homes adjoining their projects and at time would only do so to get rid of the hassle.

The Wells Engineering Report review conducted by Cloverlake Consulting 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, protection from light pollution at night, quietness, and minimal traffic after construction.

Overall, the Wells Engineering Report concludes that while there will always be impact to the scenery of neighboring properties the impact of this project is minimal. The combination of the topography, existing tree line, existing human made features, and the

⁴⁵ AEUG Madison Solar, LLCs Response to the Wells Engineering Report, Exhibit 3, Kirkland Appraisals rebuttal letter at 1–5.

large setback from the property line proposed by the developer works well to minimize the impact. The major exceptions to this are the project participants and a few other directly neighboring landowners.⁴⁶

Having reviewed the record, the Siting Board finds that there is sufficient evidence to conclude that the proposed AEUG Madison solar facility will likely not have any adverse impact on nearby property values. As noted earlier, the characteristics of the solar facilities operations are 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, AEUG Madison's Noise and Traffic Study as part of its SAR notes that any access points to the facility are likely to be on KY-388.⁴⁷ The major roads to be used to access the facility are anticipated to be KY-388, I-75, and KY-627.⁴⁸ KY-388 would be the main route to access the facility from Richmond, which is south of the facility, and runs north and south on the east side of the facility, and partially through the facility. I-75 is a divided highway that will provide access from Lexington, which is northwest of the facility. I-75 runs generally north and south along the west side of the site. KY-627 will be the main route from Winchester in the northeast, eventually connecting with KY-388 to reach the facility and runs northeast

⁴⁶ Wells Engineering Report at 19.

⁴⁷ Application, Volume II, Noise and Traffic Study at 10.

⁴⁸ *Id.*

and southwest. AEUG Madison states that it does not intend to use railways for any construction or operational activities.⁴⁹

It is expected that construction will take up to ten months to complete the solar facility. AEUG Madison's Noise and Traffic Study provides average daily traffic (ADT) data for three stations in the vicinity of the solar site. The ADT for KY-388 near mile point 5.4, which is located 40 feet from the solar site boundary to the west, is 5,318. The ADT for I-75 at mile point 93.8, which is located 1.65 miles west of the solar site, is 56,860. The ADT for Ky-627 at mile point 1.8, which is two miles northwest of the solar site, is 7,650.⁵⁰

AEUG Madison indicates during construction of this facility, traffic is anticipated to increase, with morning and evening peaks for daily workers and deliveries being made to the site periodically.⁵¹ AEUG states that all necessary safety precautions, including use signage and flagmen, will be taken to best ensure collisions are prevented on the surrounding roads. Operation of the facility is not expected to cause a significant impact to local traffic as the anticipated traffic in the area will be similar to that of a typical single-family home.⁵²

During operations, AEUG Madison states that the facility will have a maximum of eight employees to staff the solar site.⁵³ Those employees will work during the week from

⁴⁹ *Id.* at 12.

⁵⁰ *Id.* at 186.

⁵¹ *Id.* at 12.

⁵² *Id.*

⁵³ *Id.* at 183.

7 a.m. until 3:30 p.m. AEUG Madison further states that employees will be in mid- or full-sized trucks and will contribute less to vehicle traffic than a typical single-family home.⁵⁴

With respect to road degradation, AEUG Madison states it does not anticipate that there will be any damages to the existing road infrastructure. However, the truck bringing the Main Power Transformer will have a weight (truck + load) of around 554,000 lbs.⁵⁵ AEUG Madison states it will secure overweight and over-dimensional permits, as applicable, and other construction traffic and equipment deliveries will conform to typical weight and dimensional requirements.⁵⁶ The roadways used to access the site for these vehicles are in the planning phase. AEUG Madison further states that all necessary permits from Kentucky DOT will be obtained as appropriate.⁵⁷

AEUG Madison states the proposed facility will only have minimal fugitive dust during construction.⁵⁸ The facility will be constructed within the existing contours and topography of the land. For those limited areas that are cleared and grubbed, water trucks are anticipated be employed to keep dust to a minimum, authorized by Sections of the Kentucky Pollutant Discharge Elimination System (KPDES) as a non-storm water discharge (KPDES, 2018).⁵⁹ The earth moving required for the site is anticipated to last

⁵⁴ *Id.*

⁵⁵ AEUG Madison's Response to Wells Engineering's First Request for Information, Item 8.

⁵⁶ *Id.*

⁵⁷ *Id.*

⁵⁸ Application, Volume II at 5.

⁵⁹ *Id.*

from October of 2021 to April of 2022 and the total acres to be disturbed is assumed to be approximately 275, which is estimated as 25 percent of the total facility acres.⁶⁰

In order to reduce wind erosion of recently disturbed areas, AEUG Madison states that appropriate revegetation measures, application of water, or covering of spoil piles may occur. In addition, any open-bodied truck transporting dirt will be covered when the vehicle is in motion. AEUG Madison also notes the size of the project site and the distance to nearby structures and roadways, combined with vegetated buffers along the property boundaries and fencerows will aid in managing off-site dust impacts. Internal roads will be compacted gravel, which may result in an increase in airborne dust particles during dry conditions and when internal road traffic is heavy. During construction activities, water may be applied to the internal road system to reduce dust generation. Once the project is operational, the only source of dust emissions would be due to occasional maintenance vehicle traffic on the access roads. Typical existing sources of dust in the project area include agricultural activities (e.g., from plowing, planting, and harvesting fields) and from travel along gravel and dirt roads.⁶¹

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

1. AEUG Madison should evaluate the existing bridges for their load bearing capacity for construction, operation, and Maintenance;
2. AEUG Madison should construct new bridge wherever required necessary;

⁶⁰ *Id.*

⁶¹ *Id.*

3. AEUG Madison should submit a detailed plan on how traffic safety will be maintained during the construction of the facility ten days before commencing construction; and

4. AEUG Madison should 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 AEUG Madison, and will require AEUG Madison 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. AEUG Madison should develop a traffic management plan to minimize the impacts of any traffic increase and keep traffic safe. Any such traffic management plan should also identify any noise concerns during the construction phase and develop measures that would address those noise concerns.

2. AEUG Madison should 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. AEUG Madison 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. AEUG Madison should 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. AEUG Madison should 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 AEUG Madison's Noise and Traffic Study,⁶² the nearest residence is approximately 77 feet from the project boundary at the closest point.⁶³ The closest noise receptor, a residence along the northwest boundary of the central portion of the project site, will be approximately 320 feet from the nearest solar panel and the closest noise receptor, a residence along the west boundary and eastern portion of the project, will be approximately 657 feet from the nearest inverter.⁶⁴

AEUG Madison's Noise and Traffic Study indicates that the project area can be defined as a sparse suburban or rural area with very few (if any) near sources of sound. The background sound levels are conservatively characterized under the American National Standards Institute's Land Use Category as being very quiet suburban and rural residential.⁶⁵ According to AEUG Madison, the majority of the analysis area would be expected to have a Day-Night Average Sound Level (L_{dn}) background noise of about

⁶² Application, Volume II, Site Assessment Report, Appendix C, Noise and Traffic Study.

⁶³ *Id.* at 2.

⁶⁴ *Id.* at 3.

⁶⁵ *Id.* at 2–3.

40 A-weighted decibels (dBA) or less.⁶⁶ This noise level would occasionally increase due to passing vehicular traffic from Highway 338.⁶⁷ There are also temporary increases in the existing noise level from farm equipment used to grow and harvest crops and to raise cattle and other farm animals.⁶⁸ AEUG Madison's Noise and Traffic Study notes that according to a U.S. Environmental Protection Agency's (EPA) 1974 study, which evaluated the effects of environmental noise with respect to health and safety, the EPA determined an L_{dn} of 55 dBA (equivalent to a continuous noise level of 48.6 dBA) to be the maximum sound level that will not adversely affect public health and welfare by interfering with speech or other activities in outdoor areas.⁶⁹

AEUG Madison provides that construction of the facility is expected to commence in September of 2021 and be completed in June of 2022.⁷⁰ 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, 2022.⁷¹ AEUG Madison also notes that there will be a 4-week period from March to April of 2022 when all six major construction phases will be in progress concurrently.⁷² Foundations/Poles would be the loudest activity during this time, which generates a maximum noise level between 96 dBA and 101 dBA at a distance of

⁶⁶ *Id.* at 3.

⁶⁷ *Id.*

⁶⁸ *Id.*

⁶⁹ *Id.*

⁷⁰ *Id.* at 5.

⁷¹ *Id.*

⁷² *Id.*

50 feet.⁷³ AEUG Madison further notes that construction work is expected to progress 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.⁷⁴

When the solar facility is operating, there will be periodic noise associated with the relatively constant noise of inverters, the solar panel tracking system, and the substation transformer. The noise produced by the 36 or so inverters will be less than 66.0 dBA measured at ten meters, which can be described as a hum and has roughly the same noise output of a household air conditioning unit.⁷⁵ The panel tracking motors on the solar panels will operate at 78 dBA (or equivalent to a sound pressure of 47 dBA measured at ten meters) no more than one minute out of every 15-minute period.⁷⁶ The transformer is located within the planned substation, which is anticipated to cover approximately 1.4 acres on the east side of the facility.⁷⁷ The transformer is anticipated to be the loudest noise-generating operational equipment with noise emissions rated at 85 dBA sound power.⁷⁸ According to AEUG Madison, this equates to a sound pressure level of 54 dBA

⁷³ *Id.*

⁷⁴ *Id.*

⁷⁵ *Id.* at 6.

⁷⁶ *Id.*

⁷⁷ *Id.*

⁷⁸ *Id.*

at ten meters distance.⁷⁹ AEUG Madison also points out that the nearest noise sensitive receptor to the transformer is a residence community approximately 1,000 feet west.⁸⁰

AEUG Madison states that it did not find any relevant county or state noise ordinance or standard.⁸¹ AEUG Madison provides that the city of Richmond, Kentucky, Noise Regulation prohibits producing a noise disturbance that crosses a dwelling boundary due to operating construction equipment or loading and unloading boxes, building materials, and similar objects between 10 p.m. and 7 a.m.⁸²

AEUG Madison's "as proposed" analysis concludes that the L_{dn} value at the nearest noise sensitive area would be 53.4 dBA.⁸³ Since no sounds emanating from operation equipment are greater than 55 dBA, AEUG Madison concludes that the proposed solar facility complies with the EPA's noise emission recommendations.⁸⁴

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 sun. The Wells Engineering Report further notes that distance from noise emitters to

⁷⁹ *Id.*

⁸⁰ *Id.*

⁸¹ *Id.* at 3.

⁸² *Id.*

⁸³ *Id.* at 9.

⁸⁴ *Id.*

noise receptors also matters, since the further a noise receptor from a noise emitter, the less noise impact overall. Lastly, the Wells Engineering Report points out that Madison County does not have a noise ordinance, but the city of Richmond, Kentucky does. The report indicates that the city of Richmond's noise ordinance, which prohibits the loading and unloading of equipment is not anticipated to occur between the hours of 10 p.m. and 7 a.m. and would occur several hundred feet from the project boundary. The report utilizes the noise recommendations generated by the EPA to gauge acceptable levels of sound. The report concludes that under the maximum worst-case scenario value estimated under the assumption all pieces of equipment are operating simultaneously and that all the inverters are located at a minimum distance of 985 feet (300 meters) from any sensitive receptor, is below the EPA's recommended value, approximately 53.9 dBA Ldn.⁸⁵

The Wells Engineering Report concludes that the average sound level (LAEq) would be 9.2 dBA higher than the current estimated ambient noise levels for the area, which would be perceived by humans as approximately a doubling of sound level.⁸⁶ The loudest noise-generating operational equipment will consist of inverters, trackers, and transformers. No operational components of the project include significant ground borne noise or vibration sources, and no significant vibrations sources currently exist, or are planned, in the area. Thus, no significant ground borne vibration impacts would occur with operation of the project. In addition, blasting would not be required as part of the

⁸⁵ Wells Engineering Report at 15.

⁸⁶ *Id.* at 16.

project. The Wells Engineering Report did not recommend any mitigation measures to address any potential noise impacts.

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. AEUG Madison should implement a Customer Resolution Program to address any complaints from surrounding landowners. AEUG Madison should also submit annually a status report associated with its Customer Resolution Program, providing, among other things, the individual complaints, how AEUG Madison addressed those complaints, and the ultimate resolution of those complaints identifying whether or not the resolution was to the complainant's satisfaction.

2. If pile driving activity occurs within 1,500 feet of a noise sensitive receptor, AEUG Madison should 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).⁸⁷

3. AEUG Madison should contact homes within 500 feet of any pile driving activity and notify them in advance of the upcoming activity, its timing and anticipated duration, rather than waiting for complaints from those residents. It should also provide the opportunity for residents to ask questions or provide feedback, if desired.

⁸⁷ 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 (filed May 25, 2021), Item 2.

Mitigation Measures Proposed by AEUG Madison

AEUG Madison's SAR contained the following mitigation measures that it plans to implement.

1. AEUG Madison states that existing vegetation between the solar arrays and the residences will be left in place, to the extent practicable, to help screen the project and reduce visual impacts from the adjacent homes. AEUG Madison anticipates that views of the project from surrounding places (Richmond, Ford) would generally be screened by vegetation and structures associated with development. AEUG Madison has met with certain property owners to discuss specific view shed concerns and to provide visual buffers to address to specific concerns.

2. Other permit applications to the appropriate regulatory body will follow as the project enters the construction phase. In particular, AEUG Madison notes that completion of a Phase I Environmental Site Assessment for the site, which was submitted with the instant application.

The Siting Board has reviewed the mitigation measures that have either been proposed by AEUG Madison or measures that have been accepted by AEUG Madison in response to discovery requests or recommended in the Wells Engineering Report and have modified certain of those measures. The Siting Board finds that the mitigation measures as proposed and as modified are appropriate and reasonable.

The Siting Board finds that AEUG Madison'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 Site Assessment Report, 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 AEUG Madison'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.⁸⁸ 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. AEUG Madison states that the project will pay approximately \$6.6 million in property taxes over the life of the proposed solar facility.⁸⁹ The estimated capital cost of the facility is in excess of \$120 million.⁹⁰

During the construction phase, AEUG Madison estimates that approximately 394 total full-time equivalent jobs will be created, with 160 of those jobs directly linked to Madison County.⁹¹ The vast majority of these jobs will be filled by craft workers and

⁸⁸ Application, Volume I, Appendix G.

⁸⁹ *Id.* at 40, Section VIII Table 8.

⁹⁰ *Id.*

⁹¹ *Id.* at 35, Appendix G Section VII Table 5.

contractors. The 394 jobs translate to a projected injection of approximately \$13.2 million in new wages into the local economy, which will support local businesses, and approximately \$27.9 million across the state.⁹² During the operations phase, the proposed solar facility will create approximately ten long-term full time equivalent jobs in Madison County and 13 full-time equivalent jobs statewide.⁹³ The new annual local long-term earnings total over \$425,000 for Madison County and over \$798,000 for the Commonwealth of Kentucky.⁹⁴

Wells Engineering did not evaluate the economic impact of the project. Having reviewed the record, the Siting Board finds that the AEUG Madison 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 resources in the state and will be one of the largest solar facilities in the state.

Existence of Other Generating Facilities

AEUG Madison states that it is difficult to find an existing generation site with enough land available to install a large utility-scale solar facility.⁹⁵ AEUG Madison sited the project near the existing Three Forks-Dale 138 kV line. AEUG Madison states that it will be responsible for building a new interconnection to this line.⁹⁶

⁹² *Id.* at 37, Appendix G Section VII Table 6.

⁹³ *Id.* at 35, Appendix G Section VII Table 5.

⁹⁴ *Id.* at 37, Appendix G Section VII Table 6.

⁹⁵ Application, Volume I, Item 7, Efforts to Locate Near Existing Electric Generation.

⁹⁶ *Id.*

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 AEUG Madison 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 AEUG Madison 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

AEUG Madison states that the proposed solar facility will be located entirely in Madison County. In July 2020, the Madison County Fiscal Court enacted Ordinance 20-17 requiring Commercial Solar Energy Facilities proposed on agricultural zoned land to apply for and receive a Conditional Use Permit (CUP) prior to the start of construction.⁹⁷ AEUG Madison Solar applied for the required CUP on August 6, 2020 and received approval by the Board of Adjustments on December 3, 2020.⁹⁸ The Madison County Board of Adjustments issued a CUP to AEUG Madison Solar on December 7, 2020. The CUP includes 20 conditions that address local issues such as signage, lighting, fencing, decommissioning, and setbacks. The CUP established setbacks of 200 feet from the center of any road; 200 feet between the solar facility (including fencing, panels,

⁹⁷ Application, Volume I, Item 4, Compliance with Local Ordinances and Regulations.

⁹⁸ *Id.*

structures and related equipment) and any adjacent nonparticipating property; and 200 feet between the solar facility and any adjacent property which contains a residence.⁹⁹

As previously mentioned, Richmond, Kentucky Noise Ordinance (Chapter 98, 2019) prohibits producing a noise disturbance that crosses a dwelling boundary due to operating construction equipment or loading and unloading boxes, building materials, and similar objects between 10 p.m. and 7 a.m.¹⁰⁰ AEUG Madison states that all construction will occur between 7 a.m. and 10 p.m., pursuant to this ordinance.¹⁰¹

AEUG Madison submitted as part of its application a certification that the proposed project will follow all local ordinances and regulations concerning noise control, and with any applicable local planning and zoning ordinances.¹⁰²

The Siting Board finds that AEUG Madison's certification that the proposed facility will meet all local planning and zoning requirements satisfies the requirements of KRS 278.710(1)(e). The Siting Board would emphasize that as a condition to its approval in this matter, AEUG Madison must maintain compliance with CUP requirements throughout the entirety of the Project's construction and operation.

Impact on Transmission System

AEUG Madison states that the proposed solar facility will be located within the Pennsylvania, Jersey, and Maryland Power Pool Interconnection LLC (PJM) footprint.¹⁰³

⁹⁹ *Id.*

¹⁰⁰ Application, Volume II, Noise and Traffic Study at 3.

¹⁰¹ *Id.* at 8.

¹⁰² Application, Volume I at 95.

¹⁰³ Application, Volume II at 6, Effect on Kentucky Electricity Generation System.

AEUG Madison informs that PJM is the Regional Transmission Organization for several states, including parts of Kentucky, and is therefore managing the interconnection of the project in coordination with EKPC, who owns the transmission infrastructure to which the project is proposing to interconnect.¹⁰⁴ 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 AEUG Madison solar facility to the PJM network at a location specified by AEUG Madison. PJM issued the Feasibility Study Reports on the AEUG Madison project in July 2019.¹⁰⁵ The Feasibility Study shows that AEUG Madison will be responsible for total upgrade costs of approximately \$6 million. These upgrades consist of attachment facilities, direct connection network upgrades, and non-direct connection network upgrades.¹⁰⁶

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 AEUG Madison solar facility in February 2020.¹⁰⁷ The System Impact Study Report indicated that AEUG Madison will be responsible for total upgrade costs of approximately \$9,673,376.¹⁰⁸ These upgrades consist of attachment facilities, direct connection network upgrades, non-direct connection network

¹⁰⁴ *Id.*

¹⁰⁵ *Id.*

¹⁰⁶ Application, Volume I at 111, Appendix E.

¹⁰⁷ Application, Volume I at 7.

¹⁰⁸ Application, Volume I, at 170, Appendix F.

upgrades, allocation for new system upgrades, and contribution to previously identified upgrades.¹⁰⁹

AEUG Madison states that the Facilities Study was expected to be issued in April 2021.¹¹⁰ To date, AEUG Madison has not submitted the Facilities Study. Based upon information provided by PJM, AEUG Madison informs that the Facilities Study encompasses the engineering design work necessary to begin construction of required expansion plan upgrades identified by PJM to accommodate an interconnection request.

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 AEUG Madison 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 AEUG Madison's commitment to the interconnection process and protocols and its acceptance of any cost obligations resulting from the interconnection process and protocols consistent with the requirements under KRS 278.212. The Siting Board finds that AEUG Madison has satisfied the requirements of KRS 278.710(f).

Compliance with Setback Requirements

AEUG Madison'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

¹⁰⁹ *Id.*

¹¹⁰ Application, Volume I at 6–7.

certain exception that is not applicable in this instance.¹¹¹ Further, it requires that if the facility proposed is located in a jurisdiction that has established setback requirements pursuant to KRS 278.704(3) then it must provide a statement that the proposed site is in compliance with the established setback requirements.¹¹²

The proposed Project is located in Madison County. In July 2020 the Madison County Fiscal Court enacted Ordinance 20-17 requiring Commercial Solar Energy Facilities proposed on agricultural zoned land to apply for and receive a Conditional Use Permit (CUP) prior to the start of construction. AEUG Madison applied for the required CUP on August 6, 2020, and received approval by the Board of Adjustments on Thursday December 3rd, 2020.¹¹³

The Madison County Board of Adjustments issued a CUP to AEUG Madison on December 7, 2020. The CUP includes 20 conditions that address local issues such as signage, lighting, fencing, decommissioning, and setbacks. The CUP established setbacks of 200 feet from the center of any road; 200 feet between the solar facility (including fencing, panels, structures and related equipment) and any adjacent nonparticipating property; and 200 feet between the solar facility and any adjacent property which contains a residence.¹¹⁴ AEUG Madison recognizes neighboring landowners as stakeholders in the project and states it has coordinated with them throughout the development and permitting process. As a result of discussions with

¹¹¹ Application, Volume I at 12–13.

¹¹² *Id.*

¹¹³ Application Volume 1, at 3.

¹¹⁴ *Id.*

neighboring landowners, AEUG Madison has further agreed to increase setback distances from all occupied residential structures from 200 feet to 300 feet.¹¹⁵ AEUG Madison also states that coordination with stakeholders will continue throughout the construction and operations phases of the project.¹¹⁶ The Siting Board would emphasize that as a condition to its approval in this matter, AEUG Madison must maintain compliance with CUP requirements throughout the entirety of the Project's construction and operation. Additionally, AEUG Madison should place panels, inverters and substation equipment no closer to noise receptors than indicated in AEUG Madison's noise and traffic study.

Having reviewed the record and being otherwise sufficiently advised, the Siting Board finds that AEUG Madison has demonstrated its compliance with the setback requirements.

History of Environmental Compliance

AEUG Madison states that neither it nor any entity with ownership interest in the proposed solar project has violated any state or federal environmental laws or regulations.¹¹⁷ AEUG Madison further states that there are no pending actions against it nor any entity with ownership interest in the proposed solar project.¹¹⁸

KRS 278.710(1)(i) directs the Siting Board to consider whether the applicant has a good environmental compliance history. In light of AEUG Madison's verified statement

¹¹⁵ AEUG Madison's Response to Siting Board's Second Request for Information, Item 1.

¹¹⁶ *Id.*

¹¹⁷ Application Volume I, Item 11, Record of Environmental Violations.

¹¹⁸ *Id.*

and no evidence to the contrary, the Siting Board finds that AEUG Madison has satisfied the requirements of KRS 278.710(1)(i).

Decommissioning

According to AEUG Madison, the proposed solar facility would have an expected useful life of 30 plus years.¹¹⁹ AEUG states it has obligations to each Lessor to remove the solar facilities and restore the premises to pre-construction conditions upon the expiration or termination of the lease agreement.¹²⁰ AEUG Madison also notes that the CUP received from Madison County contains decommissioning conditions. The CUP requires AEUG Madison to submit a decommissioning plan to the Madison County Planning and Development office prior to construction and make it available to anyone on request.¹²¹ The CUP requires AEUG's commitment to the following decommissioning requirements to be performed within 12 months from the date the lease expires or terminates or proof that the solar facility is no longer generating/producing solar energy:

- a. Description of the plan 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;
- b. Provisions for removal of solar facilities structures, debris, and associated equipment to a depth not less than 4 feet of surface grade and the sequence in which removal is to be expected;
- c. Provisions for removal of all infrastructure including concrete mountings and foundations;
- d. Provisions to restore the land to as close to pre-construction condition as reasonably practical including soil and vegetation restoration;

¹¹⁹ Application Volume I at 50.

¹²⁰ AEUG Madison's Response to Wells Engineering First Request for Information, Item 6.

¹²¹ Application Volume I, Appendix D, Conditional Use Permit.

- e. An estimate of the decommissioning costs in future dollars at the time of filing certified by disinterested third party certified professional engineer;
- f. A written financial plan approved by the Planning and Development Director to ensure that funds will be available for decommissioning and land restoration;
- g. A provision that the terms of the decommissioning plan shall be binding upon the applicant, owner and/or operator and any of their successors, assigns or heirs;
- h. Upon review of the decommissioning plan, the Planning and Development Director/Office shall set an amount to be held in the form of a Bond;
- i. This Plan shall state that the project applicant/owner/operator shall provide the Madison County Fiscal Court with financial assurance to cover the estimated costs of decommissioning the solar farm facility/project and that the Madison County Fiscal Court shall have access to the solar farm facility/project and to the Bond proceeds to effect or complete decommissioning within one (1) year after cessation of operations; and
- j. The Applicant/owner/operator shall provide Madison County Planning and Development Director/Office with a new estimate of the cost of decommissioning the solar farm facility/project every five (5) years under the same conditions as set forth in this section above. Salvage value of structures, electrical wire and other appurtenances shall be considered within the cost estimate calculations. Upon receipt of this new estimate, the county may require, and the applicant, owner and/or operator shall provide, a new financial plan for decommissioning acceptable to the Planning and Development Director/Office or their designated representative. A new Bond amount may be determined and required to ensure decommissioning is adequately funded. Failure to provide these new cost estimates and updated financial plans every five (5) years shall be considered a cessation of operations.¹²²

The CUP further provides that ACCIONA Energy USA Global LLC, the 100 percent owner of AEUG Madison Solar, LLC, will provide a bond/guarantee ensuring the

¹²² *Id.*

decommissioning of the site under the proposed requirements stated above.¹²³ The beneficiary of said bond/guarantee shall be:

- a. If leased there will be a dual beneficiary between the property owner and Madison County Fiscal Court. In the event the property owner fails to reclaim the property to pre-construction condition, Madison County Fiscal Court shall have the sole authority to execute the bond for purposes of reclaiming the property to pre-construction condition;
- b. If property is owned by Applicant, then Madison County Fiscal Court will be the beneficiary of said bond/guarantee and shall have the sole authority to execute the bond for purposes of reclaiming property to pre-construction condition.¹²⁴

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 to carry out the land restoration requirements set forth in the CUP and various lease agreements. This plan should be filed with the Siting Board or its successors. As per the CUP requirements, AEUG Madison shall be required to file a bond equal to the amount necessary to effectuate the explicit decommissioning plan. The bond amount should be reviewed every five years at AEUG Madison'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 of removal or decommissioning of electric

¹²³ *Id.*

¹²⁴ *Id.*

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.

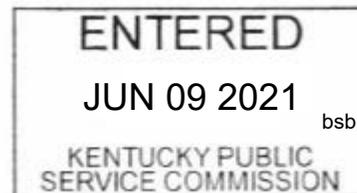
CONCLUSION

After carefully considering the criteria outlined in KRS Chapter 278, the Siting Board finds that AEUG Madison has presented sufficient evidence to support the issuance of 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. AEUG Madison's application for a Certificate to Construct an approximately 100 MWac merchant solar electric generating facility in Madison County, Kentucky, is conditionally granted subject to full compliance with the mitigation measures and conditions prescribed in Appendix A.
2. AEUG Madison shall fully comply with the mitigation measures and conditions prescribed in Appendix A.

By the Kentucky State Board on Electric
Generation and Transmission Siting



ATTEST:

A handwritten signature in blue ink that reads "Linda C. Bidwell". The signature is written in a cursive style and is positioned above a horizontal line.

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

Case No. 2020-00219

APPENDIX A

APPENDIX TO AN ORDER OF THE KENTUCKY STATE BOARD ON ELECTRIC GENERATION AND TRANSMISSION SITING IN CASE NO. 2020-00219 DATED JUN 09 2021

MITIGATION MEASURES AND CONDITIONS IMPOSED

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

1. AEUG Madison should submit a revised site development plan after the field survey is complete, and prior to the start of construction.
2. AEUG Madison shall submit a Site Survey Map indicating the property boundaries and update the property ownership records.
3. AEUG Madison will ensure compliance with any North American Electrical Reliability Corporation or Federal Energy Regulatory Commission requirement as the design and engineering of the project is finalized.
4. Any changes to the facility, such as location of inverters, will be located on the revised site development plan.
5. AEUG Madison will evaluate existing bridges for their load bearing capacity for construction, operation, and maintenance. Any new bridges shall be included in the revised site development plan.
6. AEUG Madison shall identify properties with the most effected view shed and provide a vegetation buffer to create a visual break.

7. Existing vegetation between the solar arrays and residences shall be left in place, to the extent practicable, to help screen the solar facility and reduce visual impacts from the adjacent homes.

8. AEUG Madison will work with homeowners and business owners to address concerns related to the visual impact of the solar facility on its neighbors.

9. AEUG Madison should provide a visual buffer between the facility and residences and other occupied structures with a line of sight to the facility to the satisfaction of the affected property owners. If vegetation is used, plants should reach eight feet high within four years. That vegetation should be maintained or replaced as needed. To the extent an affected property owner indicates to AEUG Madison that such a buffer is not necessary, AEUG Madison will need to obtain that property owner's written consent and submit such consent in writing to the Siting Board.

10. AEUG Madison has pledged to select anti-glare panels and operate the panels in such a way that all glare from the panels is eliminated. AEUG Madison shall provide proof that glare will not occur from the facility or immediately adjust solar panel operations upon any complaint from those living, working, or travelling in proximity to the facility. Failing this, AEUG Madison will cease operations until the glare is rectified.

11. AEUG Madison shall make permit applications to the appropriate regulatory bodies as the project enters the construction phase.

12. AEUG Madison shall evaluate the existing bridges for their load bearing capacity for construction, operation, and Maintenance.

13. AEUG Madison shall construct new bridge wherever required necessary.

14. AEUG Madison shall submit a detailed plan on how traffic safety will be maintained during the construction of the facility ten days before commencing construction.

15. AEUG Madison shall submit in writing the specific plan to control fugitive dust and PM 10 during the construction process ten days prior to commencing construction.

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

17. AEUG Madison should 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.

18. AEUG Madison 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.

19. AEUG Madison should 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.

20. AEUG Madison should 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.

21. AEUG Madison should implement a Customer Resolution Program to address any complaints from surrounding landowners. AEUG Madison should also submit annually a status report associated with its Customer Resolution Program, providing, among other things, the individual complaints, how AEUG Madison addressed those complaints, and the ultimate resolution of those complaints identifying whether or not the resolution was to the complainant's satisfaction.

22. If pile-driving activity occurs within 1,500 feet of a noise sensitive receptor, AEUG Madison should 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).

23. AEUG Madison should contact homes within 500 feet of any pile driving activity and notify them in advance of the upcoming activity, its timing and anticipated duration, rather than waiting for complaints from those residents. It should also provide the opportunity for residents to ask questions or provide feedback, if desired.

24. AEUG Madison should place panels, inverters and substation equipment no closer to noise receptors than indicated in AEUG Madison's noise and traffic study.

25. AEUG Madison shall file the Facilities Study into the record of this case once it is submitted.

26. AEUG Madison must maintain compliance with CUP requirements throughout the entirety of the project's construction and operation.

27. AEUG Madison should place panels, inverters and substation equipment no closer to noise receptors than indicated in AEUG Madison's noise and traffic study.

28. As applicable to the Conditional Use Permit (CUP) obtained from Madison County, and individual lease agreements, AEUG Madison, its successors, or assigns will abide by the specific land restoration commitments agreed to by individual property owners, as described in each signed lease agreement.

29. AEUG Madison should develop an explicit or formal decommissioning plan to carry out the land restoration requirements set forth in the CUP and various lease agreements. This plan shall be filed with the Siting Board or its successors. This plan should commit AEUG Madison to removing all facility components from the project site and Madison County at the cessation of operations.

30. AEUG Madison shall file a bond, pursuant to the requirements of the CUP, equal to the amount necessary to effectuate the explicit or formal decommissioning plan. The bond amount should be reviewed every five years at AEUG Madison'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 of 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.

APPENDIX B

APPENDIX TO AN ORDER OF THE KENTUCKY STATE BOARD ON
ELECTRIC GENERATION AND TRANSMISSION SITING IN CASE NO.
2020-00219 DATED JUN 09 2021

ONE PAGE TO FOLLOW



Project data:		PV plant summary:	
Project name:	Madison Solar	Structure type:	HSAT single row
Country:	EEUU	Module technology:	MonoPERC / Bifacial
COD Date:	Q4 2022	Inverter technology:	Central
Site information:		1/GCR:	2,50
Zone/Datum:		Tilt:	+ 55
Latitude/UTM-X:	37,818	Nº Block A:	16
Longitude/UTM-Y:	-84,285	Nº Block B:	3
Altitude (m.a.s.l.):	250	Nº Block C:	1
Area (ha):			
Structure		Total structures:	2555,5
Manufacturer:	Not defined	Total modules:	275994
Nº modules/structure:	108/54/27	Total strings:	10222
Module position:	1P	Pmax connection point (kW):	100000,0
Structure elevation:	2	P inverter nominal (kVA):	117739,0
PV module size:		Total peak power (kW):	125577,3
JAM72D20-455/MB	2,148 x 1,06	Ratio Pp/Pn POI:	1,256
		Ratio Pp/Pinv cos (φ)=1:	1,067

Power block type	Block A	Block B	Block C
PV module:	JAM72D20-455/MB	JAM72D20-455/MB	JAM72D20-455/MB
Inverter:	Ingecon Sun 3600TL C630	Ingecon Sun 3600TL C630	SG3150U-MV
Nº Modules/string:	27	27	27
Nº Inverters:	2	1	1
Nº Strings/inverter:	284	284	282
Nº Strings:	568	284	282
Nº modules:	15336	7668	7614
Peak power (kWp):	6977,9	3488,9	3464,4
Nominal power (kVA):	6548,0	3274,0	3149,0
Design power (kW):	5752,0	2876,0	2897,0
Ratio Pp/Pn cos φ=1:	1,066	1,066	1,100
Structure number:	142,00	71,00	70,50

LEGEND

- BUILDABLE AREA
- ROADS
- STRUCTURES
- POWER STATIONS
- PLANT SUBSTATION
- O&M BUILDING
- WAREHOUSE
- POWER LINES
- WATER
- FENCE
- PROJECTED BRIDGES
- ACCESS POINT

REV.	BASED ON LAYOUT	DATE	PURPOSE	DESCRIPTION	
1.9	C02172_P_AE_EN_CST_ERR_990000001	1.0	09/02/2021	FOR INFORMATION	B.D. COMMENTS
1.8	C02172_P_AE_EN_CST_ERR_990000001	1.0	15/01/2021	FOR INFORMATION	NAD83 (2011) Kentucky State Plane Coordinate System, South Zone (US Feet)
1.7	C02172_P_AE_EN_CST_ERR_990000001	1.0	04/11/2020	FOR INFORMATION	PARCEL CHANGES
1.0	C02172_P_AE_EN_CST_ERR_990000001	1.0	24/07/2020	FOR INFORMATION	INITIAL EDITION



DATUM	PROJECT	DESIGNED	DRAWN	CHECKED	VERIFIED	APPROVED			
NSRS11.KY-SF	MADISON SOLAR	N/A	P.G.B	N/A	N/A	N/A			
PROJECTION	TITLE	SCALE	ACCIONA CODE	EXTERNAL CODE	DRAW.NUMBER	REVISION	SHEET	DATE	PAPER
	GENERAL LAYOUT	0 1000 2000 Feet	C02245_P_AE_EN_LYT_CWS_980000001	N/A	N/A	1.9	01 OF 01	09/02/2021	A3

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