

COMMONWEALTH OF KENTUCKY

BEFORE THE KENTUCKY STATE BOARD ON ELECTRIC GENERATION  
AND TRANSMISSION SITING

In the Matter of:

ELECTRONIC APPLICATION OF NORTHERN	)	
BOBWHITE SOLAR LLC FOR A CERTIFICATE	)	
OF CONSTRUCTION FOR AN	)	
APPROXIMATELY 96 MEGAWATT	)	CASE NO.
MERCHANT SOLAR ELECTRIC GENERATING	)	2020-00208
FACILITY IN MARION COUNTY, KENTUCKY	)	
PURSUANT TO KRS 278.700 AND 807 KAR	)	
5:110	)	

ORDER

On December 22, 2020, Northern Bobwhite Solar LLC (Northern Bobwhite or Applicant) filed an application seeking a Construction Certificate to construct an approximately 96-megawatt alternating current (MWac) photovoltaic electricity generation facility (Project). The Project is to be located in unincorporated Marion County, KY, north of the city of Lebanon, KY and east of Highway 55.<sup>1</sup> Northern Bobwhite is a limited liability company organized under the laws of the Commonwealth of Kentucky with a principal place of business in Minneapolis, Minnesota.<sup>2</sup> Northern Bobwhite is a subsidiary of EDF Renewables Development, Inc. (EDF).<sup>3</sup> The total acreage within the project boundary is 1,700 acres that has historically been used for agriculture and farming.<sup>4</sup> Project

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<sup>1</sup> Application, Part I, Application Pleadings at 1 See *also* Application, Volume I at 5.

<sup>2</sup> Application, Part I at 4.

<sup>3</sup> *Id.*

<sup>4</sup> Application, Part I I at 5.

components will include photovoltaic solar panels, associated ground-mounted racking structure, access roads, inverters, medium voltage transformers, buried electrical collection cabling, a step-up substation, a short 161-kilovolt (kV) transmission line, security fencing, laydown areas, and an operations and maintenance (O&M) building.<sup>5</sup> Power generated by the Project will be sold through the PJM Regional Transmission Organization. The Project will interconnect to the transmission system via an existing substation adjacent to the Project.<sup>6</sup>

Pursuant to an Order issued on January 12, 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 Northern Bobwhite's application, a deadline for the filing of the consultant's report, and an opportunity for Northern Bobwhite to submit comments in response to the consultant's report. The January 12, 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 Marion County or from the

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<sup>5</sup> *Id.*

<sup>6</sup> *Id.*

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.

Northern Bobwhite has filed responses to multiple rounds of discovery in this matter. Northern Bobwhite filed a motion requesting deviations from certain setback requirements set forth in KRS 278.704(2), contemporaneously with its application on December 22, 2020. Pursuant to KRS 278.708(5), the Siting Board retained a consultant, Harvey Economics, to review Northern Bobwhite'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 February 24, 2021. The Harvey Economics Report was filed on March 29, 2021. Northern Bobwhite submitted its response to the Harvey Economics Report on April 8, 2021. A formal evidentiary hearing was held on May 4, 2021. Northern Bobwhite filed responses to post-hearing data requests on May 17, 2021. The Siting Board received no public comments, and the Siting Board heard no public comments at the beginning of the May 4, 2021 formal evidentiary hearing. The matter now stands submitted for a decision.

#### PROPOSED NORTHERN BOBWHITE SOLAR FACILITY

The proposed solar facility is to be located in unincorporated Marion County, KY, north of the city of Lebanon, KY and east of Highway 55.<sup>7</sup> The proposed Northern

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<sup>7</sup> Application, Part I, Application Pleadings at 1 See *also* Application, Part I at 5.

Bobwhite Solar Project will be located on approximately 1,700 acres.<sup>8</sup> The proposed site has been used for primarily agriculture and farming. Northern Bobwhite anticipates using approximately 900 acres for the installation of the necessary solar equipment and facilities.<sup>9</sup> Northern Bobwhite states Project components will include photovoltaic solar panels, associated ground-mounted racking structure, access roads, inverters, medium voltage transformers, buried electrical collection cabling, a step-up substation, a short 161-kilovolt transmission line, security fencing, laydown areas, and an operations and maintenance building.<sup>10</sup> The solar facility has a rated capacity of 96 MWac, and the Project Substation will be connected to the point of interconnection, the Marion County Substation, via an approximately 700 to 1,000 foot 161-kV transmission line (the Gen-Tie Line).<sup>11</sup> The Gen-Tie Line will be located on a parcel under lease to Northern Bobwhite authorizing the placement of Project facilities, including transmission lines.<sup>12</sup> The 161-kV Marion County substation owned by Eastern Kentucky Power Cooperative (EKPC) is located near the south-west corner of the proposed site, outside of the Project boundary.<sup>13</sup> The substation serves as a connection for multiple high voltage lines that run across the proposed site and will serve as the point of interconnection between the Project's step-

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<sup>8</sup> Harvey Economics Report at 13.

<sup>9</sup> *Id.*

<sup>10</sup> Application, Part I at 5.

<sup>11</sup> Application, Part I at 6.

<sup>12</sup> *Id.*

<sup>13</sup> Application, Part II, Site Assessment Report at 6.

up substation and the regional transmission system.<sup>14</sup> EKPC and Northern Bobwhite are designing the final configuration per the Interconnection Service Agreement.<sup>15</sup>

Northern Bobwhite notes that there is one residential neighborhood (as defined by KRS 278.700(6)) within 2,000 feet of the Project's facilities, and pursuant to KRS 278.704 (4), Northern Bobwhite is seeking a deviation from this setback requirement.<sup>16</sup>

Pursuant to KRS 278.706(2)(c), Northern Bobwhite notified 75 landowners whose property borders the proposed solar facility site via certified mail on November 27, 2020.<sup>17</sup> Northern Bobwhite also published notice of the proposed solar facility in the *Lebanon Enterprise*, the newspaper of general circulation in Marion County, on December 2, 2020.<sup>18</sup>

In addition, Northern Bobwhite also engaged in public involvement program activities as required by KRS 278.706(2)(f) prior to the filing of its application. Northern Bobwhite informs that through its initial developer partner Geenex, it has been actively engaged with Marion County officials and the community since early 2019. That year, at least two informal meetings were held with Marion County staff and officials to ensure Geenex was answering any questions they had about the development of the proposed Project.<sup>19</sup> On October 29, 2019, Geenex funded a regional Utility-Scale Solar Workshop

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<sup>14</sup> *Id.*

<sup>15</sup> *Id.*

<sup>16</sup> Application, Part I at 9.

<sup>17</sup> Application, Part I at 7.

<sup>18</sup> *Id.*

<sup>19</sup> Application, Part I at 10.

for County Officials conducted by the Center for Energy Education at the Marion County Public Library in Lebanon, Kentucky. Several representatives from Marion County attended this day-long event along with approximately 30 officials from more than 12 counties across the state of Kentucky. Geenex representatives Kara Price, Senior VP of Permitting & Development and Doug Schulte, Director of Operations for Kentucky, presented at the workshop.<sup>20</sup> In 2020, Geenex twice presented publicly to the Marion County Fiscal Court and had opportunities to answer their questions concerning the Project. The first presentation on June 4, 2020, was a high-level introduction to utility-scale solar, its growth in Kentucky and the future benefits of the Project to Marion County. The second presentation on July 23, 2020, provided the officials and participating citizens a more detailed look into the design and layout of the Project and the proposed setbacks and vegetative screening to be utilized, and on June 22, 2020, Northern Bobwhite sent an introductory letter to neighboring landowners of the Project informing them about the proposed Project and providing them contact information ahead of official public information meetings to come.<sup>21</sup>

Northern Bobwhite states that it also held an in-person public meeting from 10 a.m. to 3 p.m. Eastern Daylight Time on July 30, 2020, followed by a virtual public meeting on July 30, 2020 from 6 p.m. to 8 p.m. to inform the public about the solar project and receive comments from the public.<sup>22</sup> The physical portion of the meeting was held at the Marion County Agriculture Extension Complex, located at 415 Fairgrounds Road in Lebanon

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<sup>20</sup> *Id.*

<sup>21</sup> *Id.*

<sup>22</sup> Application, Part I at 12.

close to the Project site.<sup>23</sup> Northern Bobwhite published notice announcing the public meeting in the *Lebanon Enterprise* on July 15, 2020, and also mailed letters, dated July 13, 2020, to all adjoining landowners notifying them of both the in-person informational open house and the virtual public information meeting.<sup>24</sup>

## 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

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<sup>23</sup> Application, Part I at 11.

<sup>24</sup> *Id.*

As detailed above, Northern Bobwhite states that the area around the project site has historically been used for agriculture. Additionally, Northern Bobwhite further states that 57 percent of the surrounding acreage is defined as agricultural/residential, and another 38 percent of the surrounding acreage is purely agricultural; the remaining 5 percent of the surrounding area is defined as purely residential.<sup>25</sup> The final design of the Project has not yet been completed, and the Project will consist of a construction phase lasting approximately 12 months. This will include site grading and construction of the solar panel arrays. Upon completion of the construction phase, ongoing operations of the Project will last for approximately 35 years.<sup>26</sup>

There are 60 individual parcels of land, varying in size from less than one acre to 309 acres, located adjacent to the Northern Bobwhite solar site.<sup>27</sup> The closest home will be at least 200 feet away and the average distance to adjoining homes is 1,162 feet.<sup>28</sup> There are three non-participating residential homes within 300 feet of the Project.<sup>29</sup> Exact locations of some solar panels, the inverters, and transformer have not been finalized by Northern Bobwhite. Project components will include solar panels and the associated ground-mounted racking structure, access roads, inverters, medium voltage transformers, buried electrical collection cabling, a step-up substation, a short 161 kV transmission line, security fencing, laydown areas, and an O&M building.<sup>30</sup>

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<sup>25</sup> Application, Part II, Site Assessment Report, Appendix A, Property Value Impact Report at 21.

<sup>26</sup> Application, Part II, Site Assessment Report, Appendix D, Noise Assessment at 177.

<sup>27</sup> *Id.*

<sup>28</sup> *Id.*

<sup>29</sup> Application, Part II, Site Assessment Report, Appendix A at 23–24.

<sup>30</sup> Application, Part II, Site Assessment Report at 4.

The proposed site development plan in the SAR was filed with the application on December 22, 2020. The SAR has not been further updated for the Siting Board.<sup>31</sup> As represented by Northern Bobwhite, the potential project footprint, the setbacks from property lines, roads, and non-participating residential homes, the minimum distance from central inverters and residences, and the distance from the Marion County substation and Northern Bobwhite's step-up substance (less than one mile) will not materially change during the final design.<sup>32</sup> One mistake has been noted, the project boundary needs to be revised so that the Marion County substation is outside of it.<sup>33</sup> Northern Bobwhite will submit the final site plan to the Siting Board prior to construction.<sup>34</sup>

Harvey Economics evaluated the data contained in the SAR and concluded that Northern Bobwhite 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. Northern Bobwhite will be constructed on approximately 900 acres out of parent tracts of 1,700 acres on Simmstown Road, Lebanon, Kentucky. Based on 60 adjoining parcels 5 percent of the acreage is residential, 38 percent is agricultural, 57 percent is agricultural/residential, less than 1 percent is the substation. The closest

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<sup>31</sup> Application, Part II, Site Assessment Report, Appendix C at 164–171

<sup>32</sup> Application, Part II, Site Assessment Report at 4.

<sup>33</sup> Response to Harvey Economics First Data Request at 18.

<sup>34</sup> Application, Part II, Site Assessment Report at 4.

residence is at least 200 feet away from the Project boundary and the average distance to adjoining homes is 1,162 feet.<sup>35</sup>

2. Appendix B of the SAR contains the boundary survey. The Project boundary on the Site Plan follows the property lines of parcels that are participating in the project, with the exception of the Marion County Substation.<sup>36</sup> The Collection Easement Parcels on the Site Plan contain easements that provide a contiguous link between the solar panel infrastructure on the eastern and western areas and between the Project's substation and the transmission substation. Ten Lease Agreements and three Access and Utility Easement Agreements have been signed for the purpose of constructing the project facility and those collection facilities within a defined right-of-way.<sup>37</sup>

3. The Site Plan shows the location of nine road access points and control fences for construction and operation.<sup>38</sup> Access to the site will be controlled through secure (gated) access points. The perimeter of the property will be enclosed by a security fence. The chain-link security fence will be located immediately adjacent to the panels and will be a minimum of six feet tall. Barbed wire will be included on top of the fencing around the Project substation. Security cameras will be installed around the Project substation and the O&M facility after construction.<sup>39</sup>

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<sup>35</sup> Application, Part II, Site Assessment Report, Appendix A, Property Value Impact Study at 20–24.

<sup>36</sup> Response to Harvey Economics First Data Request at 14 and 18.

<sup>37</sup> Response to Siting Board First Data Request at 9.

<sup>38</sup> Application, Part II, Site Assessment Report at 5-7 See *also* Response to Harvey Economics First Data Request at 7 and 8

<sup>39</sup> Harvey Economics Report at 14.

4. The preliminary Site Plan shows the solar panels, inverters and medium voltage transformers will be installed throughout the site. Inverters will be delivered as pre-built, self-contained skids installed on gravel pads. A small maintenance building may be constructed to store equipment and parts, the location of which will be determined during construction.<sup>40</sup> The Gen-Tie Line connecting the Project substation to the transmission substation will be 700-1,000 feet long. Approximately three wood or steel poles about 70-100 feet high will be placed along the transmission corridor.<sup>41</sup>

5. Access to the facility is gained through nine controlled access points identified in the Site Plan. Approximately 320,000 feet of internal gravel roads shown on the Site Plan will be built for construction and operation of Northern Bobwhite. No railways will be used during the construction or operation of this facility.<sup>42</sup>

6. Northern Bobwhite does not need electricity during normal daytime operations. During construction electric service will be required from either Inter County Energy Cooperative or Kentucky Utilities.<sup>43</sup> Northern Bobwhite has not yet contacted any municipal water or sewer providers. If municipal water or sewer service cannot be obtained, it will install a water well and septic system.<sup>44</sup>

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<sup>40</sup> Application, Part II, Site Assessment Report at 6.

<sup>41</sup> *Id.*

<sup>42</sup> Application, Part II, Site Assessment Report at 7 See *also* Response to Harvey Economics First Data Request at 9.

<sup>43</sup> Application, Part II, Site Assessment Report at 7.

<sup>44</sup> Response to Harvey Economics Supplemental Request for Information from Email Dated March 18, 2020 at 3.

As already stated, Harvey Economics concludes the SAR and Site Plan complies with the requirements set forth in KRS 278.708. However, Harvey Economics has mitigation measures and recommendations regarding new information when said final design is completed by Northern Bobwhite. The Harvey Economics Report recommends the following mitigation measures:

1. A final site layout plan shall be submitted to the Siting Board upon completion of the final site design. Deviations from the preliminary site layout plan which formed the basis for Harvey Economics's review should be clearly indicated on the revised graphic. Those changes could include, but are not limited to, location of solar panels, inverters, transformers, substation, operations and maintenance building or other Project facilities and infrastructure.

2. Any change in Project boundaries from the information which formed this evaluation should be submitted to the Siting Board for review.

3. The Board will determine if any deviation in the boundaries or site development plan is likely to create a materially different pattern or magnitude of impacts. If not, no further action is required, but if yes, the Applicant will support the Siting Board's effort to revise its assessment of impacts and mitigation requirements.

4. A final, Project specific, construction schedule, including revised estimates of on-site workers and commuter vehicle traffic, shall be submitted to the Siting Board. Deviations from the preliminary construction schedule, which formed the basis for Harvey Economics's review, should be clearly indicated.

5. The Board will determine if any deviation to the construction schedule or workforce estimates is likely to create a materially different pattern or magnitude of

impacts. If not, no further action is required, but if yes, the Applicant will support the Siting Board's effort to revise its assessment of impacts and mitigation requirements.

6. The Applicant or its contractor will control access to the site during construction and operation. All construction entrances will be gated and locked when not in use.

7. The Applicant's access control strategy shall also include appropriate signage to warn potential trespassers. The Applicant must ensure that all site entrances and boundaries have adequate signage, particularly in locations visible to the public, local residents, and business owners.

8. According to National Electric Safety Code regulations, the security fence must be installed prior to any electrical installation work. The substation will have its own separate security fence and locked access installed.

The Siting Board finds that Northern Bobwhite'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 Harvey Economics Report to be reasonable and, therefore, no mitigation measures relating to the SAR beyond what has been recommended by Harvey Economics and accepted by Northern Bobwhite are necessary as it relates to satisfying KRS 278.708. The Siting Board does support mitigation measures recommended by the Harvey Economics Report regarding the Applicant's obligation to inform the Siting Board of potential changes when the final design of the Project is completed.

#### Compatibility with Scenic Surroundings

Northern Bobwhite states the proposed solar site is located in unincorporated Marion County, Kentucky, north of the city of Lebanon, Kentucky, and east of Highway 55.<sup>45</sup> According to Northern Bobwhite, the project will be situated on approximately 1,700 acres of land historically used for agriculture and farming.<sup>46</sup> Northern Bobwhite notes the topography of the project is generally rolling hills with steeper areas alongside streams.<sup>47</sup> Adjoining land use is primarily agricultural, with only 5.26 percent of the adjoining property zoned residential and 38 percent zones agricultural/residential, which Northern Bobwhite states is typical for large-scale solar facilities in the Southeast and Midwest.<sup>48</sup>

Northern Bobwhite notes the site will maintain native vegetative buffers and screening and will add vegetative buffer where the project could be visible.<sup>49</sup> Northern Bobwhite indicates viewshed impacts will be mitigated where properties are located within 500 feet of the project for non-participating property owners, or 300 feet for public roadways.<sup>50</sup>

Northern Bobwhite asserts that its solar facility is a passive use of the land that would be consistent with the nearby agricultural and residential area. Northern Bobwhite asserts the height of the solar panels, which are generally less than 15 feet high at their highest tilt, has a similar visual impact as compared to a typical greenhouse and lower

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<sup>45</sup> Application, Part I, at 4.

<sup>46</sup> Application, Part I, at 5.

<sup>47</sup> Application, Part II, Site Assessment Report, at 9.

<sup>48</sup> *Id.*

<sup>49</sup> *Id.*

<sup>50</sup> *Id.*

than that of a single-story residential home.<sup>51</sup> Northern Bobwhite notes that, as compared to the proposed facility, if the subject property were developed with single-family housing, that development would have a greater 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.<sup>52</sup>

The Harvey Economics Report finds the area surrounding the project is agricultural and residential. The report also finds the combination of rolling hills and groupings of trees help mitigate negative visual impacts to citizens. The report notes that roads in the area are primarily in valleys and would be hidden from the view of nearly all commuters. The Harvey Economics Report finds the Northern Bobwhite substation is located near existing transmission infrastructure and unlikely to create negative visual impacts. Harvey Economics does indicate small portions of the project may be visible to commuters on Radio Station Road, Gene Campbell Road, and St. Ivos Road, but that such visual impacts would be mitigated by the low rate of traffic. Any impact to commuters on Horan Lane would be minimal or, depending on placement of panels, non-existent.

The Harvey Economics Report concludes the impact on neighboring properties to be minimal, noting that panels will be mostly hidden from view due to the topography of the area, Northern Bobwhite's commitment to provide vegetative buffers, the location of the substation, and the anti-reflective coating of the panels. The Harvey Economics Report recommends the following mitigation measures:

1. Northern Bobwhite will not remove any existing vegetation unless the existing vegetation needs to be removed for placement of solar panels.

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<sup>51</sup> *Id.*

<sup>52</sup> *Id.*

2. 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 nearby homes and roadways.

3. Northern Bobwhite shall follow through on its commitment to providing vegetative buffers for 15 houses with sight lines within 500 feet of the solar panels, and for 1.85 miles of roadways within 300 feet of the solar panels.

4. Northern Bobwhite shall continue to work with homeowners to address glare impacts for any residents that experience glare for more than 60 minutes in a year.

5. The Applicant will consider cultivating at least two acres of native pollinator-friendly species within the solar facility site in the southwestern and northeastern parcels of the Project, leaving the site with a total of four acres of native pollinator-friendly species.

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 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 Harvey Economics Report which may have views of the site. Although Northern Bobwhite has committed to coordinating with neighboring property owners who raise concerns about the visual impact of the solar facility and committed 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 will be adequately addressed as it leaves the decision making solely in the hands of Northern Bobwhite without any oversight. The Siting Board finds the proposed mitigation measures are reasonable and, therefore, will require Northern Bobwhite to implement the mitigation measures identified above with the exception of Mitigation Measures 1 and 3 which will be amended as follows:

1. Northern Bobwhite will not remove any existing vegetation unless the existing vegetation needs to be removed, except to the extent it must remove such vegetation for the construction and operation of Project components.

2. Northern Bobwhite shall follow through on its commitment of providing vegetative buffers for the 15 houses with sight lines within 500 feet of the solar panels, and for 1.85 miles of roadways within 300 feet of the solar panels. 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 Northern Bobwhite that such a buffer is not necessary, Northern Bobwhite 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, Northern Bobwhite 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.<sup>53</sup> The report indicates that the

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<sup>53</sup> Application Part II, Site Assessment Report, Appendix A, Property Value Impact Report at 18.

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 Harvey Economics Report evaluated the impacts to property values by reviewing relevant existing literature related to solar facility impacts; prepared further analysis of the data provided in Northern Bobwhite's Property Value Impact Report; and conducted interviews with several local real estate professionals.<sup>54</sup> Among the literature reviewed by Harvey Economics was a 2020 study completed by economists at the University of Rhode Island, which found that in areas of high population density, houses within a one-mile radius depreciate by about 1.7 percent following construction of a solar array.<sup>55</sup> However, the Harvey Economics Report states that the University of Rhode Island study performed additional analysis focused on impacts in more rural areas and found that the effect in rural areas was effectively zero and that the negative externalities of solar arrays are only occurring in non-rural areas. Harvey Economics also reviewed a 2019 article produced by the American Planning Association, which indicates that the impact of utility scale solar facilities is typically negligible on neighboring property values.<sup>56</sup> Additionally, Harvey Economics also reviewed a 2018 University of Texas study, which included a geospatial analysis and a survey of residential property assessors to determine the potential for property value impacts related to solar projects.<sup>57</sup> The results

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<sup>54</sup> Harvey Economics Report at 15-16.

<sup>55</sup> Harvey Economics Report at 47.

<sup>56</sup> Harvey Economics Report at 48.

<sup>57</sup> *Id.*

of the University of Texas study showed that a majority of survey respondents estimated a value impact of zero and geospatial analysis showed that relatively few homes would be impacted. Additional materials reviewed by Harvey Economics included several independent appraisal reports related to property value impacts for solar companies.<sup>58</sup> The Harvey Economics Report states that overall conclusions of these independent appraisal reports were that solar facilities do not negatively impact property values.<sup>59</sup>

In addition to reviewing the methodology and underlying matched pair analysis used in Northern Bobwhite's Property Value Impact Report, Harvey Economics also examined more closely the data provided in the matched pair sets to determine the likelihood of a positive impact, negative impact, or no impact.<sup>60</sup> Harvey Economics determined that the outcome of the evaluation of the solar facilities greater than 70 MW, which included 19 pair data set, indicates that the majority of matched pair comparisons resulted in no sales price difference or an increase in sales price due to adjacency to the solar facility property.<sup>61</sup>

Harvey Economics also interviewed the Marion County Property Valuation Administrator and a local real estate professional both of whom were familiar with property valuation and real estate in Marion County.<sup>62</sup> The Marion County Property Valuation Administrator stated that he has not heard from any Marion County residents regarding

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<sup>58</sup> *Id.*

<sup>59</sup> *Id.*

<sup>60</sup> Harvey Economics Report at 44.

<sup>61</sup> Harvey Economics Report at 46.

<sup>62</sup> Harvey Economics Report at 49.

concerns about impacts to property values. However, he stated that the Northern Bobwhite lease payments would be two to three times the rent obtained by a landowner for agricultural use and that that fact would drive up property prices in the County, or at least in the Project area.<sup>63</sup> Although the local real estate agent does not have any detailed knowledge about the proposed solar project components, design, or operations, the local real estate agent indicated any effects would be limited to adjoining properties and would probably depend on the current use of the adjoining property.<sup>64</sup> The local agent also expanded on the current property value market in Marion County, stating that the County is experiencing increasing home and property prices due to the limited amount of properties on the market, existing houses on the market selling quickly, farmland prices skyrocketing, and the influx of residents from outside the County and outside the Commonwealth.<sup>65</sup> Overall, the interviews conducted with the Marion County Property Value Administrator and local real estate agent finds that changes in property values due to solar facility does not appear to be a serious concern in Marion County, although many residents may be unaware of the existence of the proposed Project.

The Harvey Economics Report concludes that the current research indicates that the existence of solar facilities does not, in general, negatively influence property values for adjacent landowners.<sup>66</sup> The report concludes that property values in Marion County are unlikely to be affected by the siting of the Northern Bobwhite solar facility.

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<sup>63</sup> *Id.*

<sup>64</sup> *Id.*

<sup>65</sup> *Id.*

<sup>66</sup> Harvey Economics Report at 52.

Accordingly, the Harvey Economics Report does not recommend any mitigation measures related to potential impacts on property values or land use.<sup>67</sup> Having reviewed the record, the Siting Board finds that there is sufficient evidence to conclude that the proposed Northern Bobwhite 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, Northern Bobwhite's SAR shows the proposed construction entrances. Access to the facility is gained through nine controlled access points.<sup>68</sup> Most of the traffic will travel via KY-55, a principal arterial two-lane paved roadway, and KY-1195 and KY-1406 which are minor collector roads both paved two-lane roadways designed to handle high levels of traffic.<sup>69</sup> Primary access to the Project site for all personnel and deliveries will be via KY-55.<sup>70</sup> The Project will have a primary material laydown area located within the project perimeter off Radio Station Road. Internal gravel roads will be utilized to move equipment and materials throughout the project when possible. KY-1195 and KY-1406 will be used to move equipment and materials from the laydown area to other project areas when internal roads cannot be used. When possible, equipment and materials will be coordinated to

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<sup>67</sup> *Id.*

<sup>68</sup> Application Part II, Site Assessment Report at 7.

<sup>69</sup> Application Part II, Site Assessment Report at 13 and 201.

<sup>70</sup> Application Part II, Site Assessment Report, Appendix E, Traffic Assessment at 201.

be delivered to the respective areas at which they will be used to minimize traffic between project areas.<sup>71</sup> There are no railways that intersect with the Project site.<sup>72</sup>

Northern Bobwhite states construction is expected to last approximately 12 months, with construction traffic to the site will take place during normal operating hours between 7 a.m. and 10 p.m., and the majority of traffic will occur during hours of daylight. The Applicant states that construction workers will travel to the project site using Class 2 & 3 commuter vehicles arriving at the site around 7 a.m. and departing typically by 6 p.m. and no later than 10 p.m. daily. Deliveries of equipment and materials will normally take place throughout the operating hours of 7 a.m. to 6 p.m., but some evening deliveries may occasionally be required.<sup>73</sup>

Northern Bobwhite 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 when periodic deliveries of construction materials and equipment occur. An anticipated peak of 250 total workers, of which an estimated 50 would be local, will commute to the site each day in up to 200 vehicles. They will park within the project boundaries avoiding parking on roads, public lots and private lots. Local workers will commute from their homes while non-local workers will commute from hotels, rentals, and extended stay facilities. No temporary housing facilities will be located on site. When possible, workers will carpool to the site. Local construction labor will generally be

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<sup>71</sup> Application, Volume II, Site Assessment Report at 202.

<sup>72</sup> *Id.* at 206.

<sup>73</sup> *Id.* at 202–203.

recruited from within a 60-minute driving radius of the site.<sup>74</sup> Most equipment and material deliveries will be by Class 9 freight trucks. Several oversized vehicles will deliver heavy machinery to the project site for grading and solar panel construction. Grading machinery will be delivered to the site at the project commencement and will remain on site until grading has been completed. Telehandler lifts will remain on site for the duration of the project once delivered. The largest vehicle expected on site will be used for the delivery of the substation transformer, with an expected weight of approximately 60 tons.<sup>75</sup> Northern Bobwhite or the construction contractor will provide adequate signage and traffic control devices during construction to increase driver safety and reduce the risk of accidents on all roads that will be used for construction traffic.<sup>76</sup>

Northern Bobwhite states that the solar facility will not require on-site employees for its regular operation, with approximately two employees visiting the site three times a week to inspect the site, ensure proper equipment operation, and note any maintenance needs. Maintenance will occur periodically and will be limited to typical working hours Monday through Friday. Access to the site for both operation and maintenance activities will use Class 2 or Class 3 vehicles and will not contribute to a substantial traffic increase.<sup>77</sup>

The Harvey Economics Report does raise some issues regarding traffic impact. First, it echoes the Traffic Assessment summary of Northern Bobwhite that traffic will

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<sup>74</sup> *Id.* at 203.

<sup>75</sup> *Id.*

<sup>76</sup> *Id.* at 204.

<sup>77</sup> *Id.*

temporarily increase during construction, but will be able to handle the temporary increase in traffic. Harvey Economics found that construction-related traffic has the potential to congest roads between Project parcels, but since the parcels are spread out and non-contiguous, no roads are expected to receive a large increase in construction-related traffic. The report went on to state that the roads between Project parcels are not very busy, and thus the roads should be able to handle the increase in construction worker commuter vehicles. However, a number of the County roads between parcels are narrow and turns are sharp, which might present congestion and road issues, especially in moving heavy equipment. Harvey Economics confirmed that there will be no noticeable traffic impact during operations. But the report has some additional information about impacts of the temporary construction traffic.

Harvey Economics discusses both road degradation and bridge degradation, advising that road degradation is likely to occur where heavy construction vehicles (such as freight trucks carrying solar panels and racking systems) exceed posted weight limits.<sup>78</sup> Numerous roads in the area are rated at 44,000 pounds, and Northern Bobwhite is planning on utilizing freight trucks weighing more than 60,000 pounds. The heaviest vehicle, which will carry the main substation transformer, is estimated to weigh 240,000 pounds.<sup>79</sup> Northern Bobwhite will need to coordinate with Kentucky Transportation Cabinet (KTC) and Morgan County Road Department (MCRD) officials to ensure all permits are obtained and all routes are approved. Northern Bobwhite has addressed this as it has pledged to fix any potential road degradation that may occur from construction

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<sup>78</sup> Harvey Economics Report at 16 and 65.

<sup>79</sup> Harvey Economics Report at 16–17 and 65.

vehicles.<sup>80</sup> There are a small number of bridges in the vicinity of the Project, and there is only one structurally deficient bridge. But that bridge is not expected to be utilized by the Project, but special consideration should be paid to this bridge if the Applicant intends to utilize it during construction.<sup>81</sup>

Harvey Economics also finds that that the roads in the area are very narrow, and that this may be problematic.<sup>82</sup> The Harvey Economics Report states many roads on the site are capable of only carrying 1.5 cars, and vehicles need to pull half-off the road in order to avoid oncoming traffic. While not an issue for drivers encountering residential and construction-related commuter vehicles on these roads, it is likely commuter vehicles encountering heavy freight trucks will need to turn around or into private drives to avoid oncoming freight trucks. Furthermore, the narrow roads will make accessing some proposed access points difficult, if not impossible. For example, the stretch of road between Horan Lane and Kentucky Route (KR) 55 has two hairpin curves that may not be possible for freight trucks to navigate without road improvements or tree removal.<sup>83</sup>

Lastly, the Harvey Economics Report finds dust impacts are anticipated to be minor, because the Applicant has pledged to maintain construction equipment and follow practices related to fugitive dust throughout the construction process.<sup>84</sup> This echoes the findings of the Traffic Assessment. Northern Bobwhite states that to reduce wind erosion

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<sup>80</sup> Harvey Economics Report at 17 and 65.

<sup>81</sup> Harvey Economics Report at 65–66.

<sup>82</sup> *Id.*

<sup>83</sup> *Id.*

<sup>84</sup> *Id.*

of recently disturbed areas, appropriate revegetation measures, application of water, or covering of spoil piles are steps that will be taken. In addition, any open-bodied truck transporting dirt will be covered when the vehicle is in motion. Northern Bobwhite asserts the size of the project site, distance to nearby structures and roadways, combined with vegetated buffers and fencerows will aid in managing off-site dust impacts as well. Northern Bobwhite indicates water will be applied to internal road systems to deal with dust from internal roads will be compacted gravel during dry conditions with heavy internal road traffic.<sup>85</sup>

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

1. The Applicant has committed to rectify any damage to public roads resulting from Project construction. Harvey Economics recommends that “rectify” mean fix or fully compensate road authorities as necessary to mitigate any damage that may occur to the existing road network.

2. The Applicant will comply with all laws and regulations regarding the use of roadways.

3. The Applicant will consult with the KTC regarding truck and other construction traffic and obtain necessary permits from the KTC.

4. The Applicant will consult with MCRD regarding truck and other construction traffic and obtain necessary permits from the MCRD.

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<sup>85</sup> Application Part II, Site Assessment Report, Appendix E, Traffic Assessment at 205.

5. The Applicant will comply with any road use agreement executed with the MCRD. Such an agreement might consider special considerations for overweight loads, routes utilized by heavy trucks, road weight limits, and bridge weight limits.

6. The Applicant will properly maintain construction equipment and follow best management practices related to fugitive dust throughout the construction process. This should keep dust impacts to a minimal level.

The Siting Board agrees with the mitigation measures recommended in the Harvey Economics Report, which were generally accepted by Northern Bobwhite, and will require Northern Bobwhite 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. Northern Bobwhite 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. Northern Bobwhite 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. Northern Bobwhite 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. Northern Bobwhite 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. Northern Bobwhite 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 Northern Bobwhite's Noise Study, the nearest noise receptors are limited low density single family residences. The closest residence is 300 feet from an inverter. Northern Bobwhite has committed to place inverters no closer than 300 feet to any residences in the project area.<sup>86</sup> In addition, there is a Neighborhood as defined by KRS 278.704(4) that contains ten homes.<sup>87</sup> Northern Bobwhite 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 625 feet from the project boundary.<sup>88</sup>

Northern Bobwhite has committed, by setting "[a]pplicable minimum setbacks" to placing the central inverters and energy storage devices a minimum of 300-feet from any residential noise receptor.<sup>89</sup> At this distance the anticipated sound level of the inverters

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<sup>86</sup> Motion for Deviation from Setback Requirements at 3 and Exhibit 1 at 18.

<sup>87</sup> *Id.*

<sup>88</sup> *Id.*

<sup>89</sup> Application Part II, Site Assessment Report, Appendix D, Noise and Traffic Study at 183.

would be approximately 47.78 dBA. The Substation is expected to produce a sound level of 77 dBA and at the property line of the nearest noise receptor this would equate to 53-55 dBA.<sup>90</sup> Northern Bobwhite has estimated that the project is estimated to produce an average noise level of 51.5 dBA.<sup>91</sup> Northern Bobwhite potentially will use tracking motors on the solar panels that will move the panels and would operate no more than one minute out of every 15-minute period. The sound typically produced by panel tracking motors is approximately 78 dB at the source. At a distance just beyond 200 feet from the source, the sound from the tracking motor would be similar to indoor residence noise levels or about 42 dBA.<sup>92</sup>

Northern Bobwhite's Noise Study indicates that the existing local sound environment around the project area comes from existing traffic on roadways.<sup>93</sup> In addition rural farming and agricultural activities, cattle, and other wildlife in the area contribute to existing sounds.<sup>94</sup> Near the proposed facility, there is a municipal airport to the north which is a current noise source, and an industrial park approximately one mile east of the site which has significant heavy truck traffic moving materials and product.<sup>95</sup>

Northern Bobwhite indicates that construction of the facility is expected to last 12 months. The noisiest phase of construction is anticipated to be the foundations phase

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<sup>90</sup> *Id.* at 184.

<sup>91</sup> *Id.* at 186.

<sup>92</sup> *Id.* at 182–183.

<sup>93</sup> *Id.*

<sup>94</sup> *Id.* at 177.

<sup>95</sup> *Id.* at 178.

due to pile driver use.<sup>96</sup> Foundations/Poles would be the loudest activity during this time, which generates a maximum noise level between 96 dBA and 101 dBA at 50 feet from the source.<sup>97</sup> Northern Bobwhite 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.<sup>98</sup>

Northern Bobwhite states that it did not find any relevant county or state noise ordinance or standard that was applicable.<sup>99</sup> Northern Bobwhite proposes to have construction activities daily during the hours of 7 a.m. to 10 p.m.<sup>100</sup>

Northern Bobwhite's Noise Assessment analysis concludes that the ambient daytime sound level for the area surrounding this project is anticipated to be between 50 and 60 dBA.<sup>101</sup> According to Northern Bobwhite, 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.<sup>102</sup>

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<sup>96</sup> Application Part II, Site Assessment Report, Appendix D, Noise Assessment at 179.

<sup>97</sup> *Id.*

<sup>98</sup> *Id.* at 5.

<sup>99</sup> *Id.* at 10.

<sup>100</sup> *Id.* at 6.

<sup>101</sup> *Id.* at 4

<sup>102</sup> *Id.* at 5.

The Harvey Economics Report 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 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. Lastly, the report also points out that neither the Commonwealth nor Marion County have a noise ordinance. The report utilizes the noise recommendations generated by the EPA and World Health Organization (WHO) to gauge acceptable levels of sound. The WHO determined that daytime noise emissions greater than 55 dBA over a 16-hour period can cause serious annoyance, and noise emissions greater than 50 dBA over a 16-hour period can cause moderate annoyance. The WHO recommends limits of 45 dBA over an 8-hour period during the night.

The Harvey Economics Report concludes that the baseline noise levels in the area are serene which would be disrupted by the construction noises resulting in an annoyance for residents for at least the period when construction is active nearby. The report finds that the pile driving process will be particularly annoying for people living or working in the vicinity. There could be several months of noticeable noise impacts during construction, with a peak of up to 19 weeks of potentially annoying levels of noise during construction. During construction, almost all the noise from the project site will be intermittent and will not be permanently impactful to nearby residents.

The Harvey Economics Report recommends the following mitigation measures to address any potential noise impacts.

1. Northern Bobwhite shall notify residents and businesses within 2,400 feet of the project boundary about the construction plan, the noise potential, and the mitigation plans at least one month prior to the start of construction.

2. Northern Bobwhite 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. If the noise levels are unduly high or annoying, the Applicant should mitigate those effects as needed.

3. Pile driving activities shall cease by 6 p.m. each day. Since the area is largely rural, a constant pounding during evening hours has the potential to upset the natural tranquility of the area and severely annoy residents.

In response to Siting Board Staff's Post-Hearing Requests for Information, Item 3, Northern Bobwhite also proposed to limit the pile driving activities to 9 a.m. to 5 p.m. when operating within 1,000 feet of an occupied non-participating home.

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. 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. Northern Bobwhite shall notify residents and businesses within 2,400 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. Northern Bobwhite 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. Construction and pile driving activities are limited to 8 a.m. to 6 p.m., but within 1,000 feet of a non-participating home pile driving shall begin no earlier than 9 a.m. and shall cease by 5 p.m. each day.

4. If the pile driving activity occurs within 1,500 feet of a noise sensitive receptor, Northern Bobwhite 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).<sup>103</sup>

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

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<sup>103</sup> 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* (filed May 25, 2021) Ashwood Solar's Response to Siting Board Staff's Post-Hearing Request for Information, Item 2.

6. Northern Bobwhite shall place panels, inverters and substation equipment no closer to noise receptors (homes) than indicated in Northern Bobwhite's noise and traffic study, but additional mitigate measures are required for anticipated noises levels of certain facilities. Specifically, based on the noise information provided by the Applicant the Siting Board has three mitigation measures beyond that recommended in the noise and traffic study: (1) the Central Inverters no closer to a noise receptor than 450 feet, (2) the String Inverter no closer to a noise receptor than 150 feet, and (3) Solar Panels no closer to a noise receptor than 150 feet.

#### Mitigation Measures Proposed by Northern Bobwhite

Northern Bobwhite'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 the non-participating residential homes that are located relatively close to property lines. Northern Bobwhite proposes the following setbacks for solar equipment: 100 feet from adjacent roadways, 50 feet from the boundary of any non-participating properties. Applicant proposes the following additional setback for central inverters, and energy storage systems: at least 300 feet from any residence. Project construction activities will only occur between the hours of 7 a.m. and 10 p.m.

2. Northern Bobwhite will maintain natural vegetative screening; however, where the Project could be visible from a roadway or neighboring residence, the Project will add a vegetative buffer to mitigate viewshed impacts. Bobwhite will install vegetative buffering where natural screening is not present if solar panels or inverters are sited within

500 feet of a residence within direct line of site, or if solar panels or inverters are located within 300 feet of a public roadway within direct line of site.

3. The Project site is near a small municipal airport, to the north. Bobwhite will follow Federal Aviation Administration (FAA) guidelines for determining glare issues for ingress and egress from the airport. Based on other solar developments near larger airports, Bobwhite does not anticipate any mitigation with respect to glare.

4. At the request of Northern Bobwhite Terracon completed Phase I Environmental Site Assessments for the parcels that comprise the facility. This assessment provides a baseline for returning property to its current condition after decommissioning. Northern Bobwhite will rely on the baseline established in Phase I Environmental Site Assessment during the decommissioning process.

5. Northern Bobwhite engaged Terracon to complete a wetland survey and delineation of the Project site. Identified wetlands and jurisdictional waters will be avoided during construction and operation to the extent practicable. Note the total acreage assessed may not equal the total acreage of the Project. The assessment covered areas outside the preliminary site layout. If necessary, it is anticipated that the Project would utilize applicable USACE Nationwide Permits. Any required USACE permits or DOW permits will be obtained prior to commencement of construction.

6. Northern Bobwhite provided a threatened and endangered species report. The presence of potential habitat for the Indiana and Northern long-eared bats requires that any tree clearing would need to be performed seasonally or additional investigations and consultation with regulatory agencies may be necessary. Northern Bobwhite will take

this into consideration when determining any tree clearing and coordinate as necessary with the regulatory agencies.

The Siting Board has reviewed the mitigation measures that have either been proposed by Northern Bobwhite, have been accepted by Northern Bobwhite in response to discovery requests or recommended in the Harvey Economics Report and have modified certain of them, 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 Northern Bobwhite'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 Northern Bobwhite's economic impact report, the proposed solar facility will generate positive though temporary 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. Northern Bobwhite states that it has secured an Inducement Resolution for Industrial Revenue Bond (IRB) from the Marion County Fiscal Court which includes a payments in lieu of taxes (PILOT) agreement to the local school system of \$400,000 over the life of the project. In addition, Northern Bobwhite will pay approximately \$6.0 million in taxes over the life of the proposed solar facility.<sup>104</sup> The estimated capital cost of the facility is approximately \$125 million.<sup>105</sup>

During the construction phase, Northern Bobwhite estimates that approximately 307 total full-time equivalent jobs will be created, with 200 of those jobs directly linked to on-site construction activity.<sup>106</sup> Northern Bobwhite anticipates employment of 25 to 50 Marion County residents during construction. The 200 construction jobs translate to a projected injection of approximately \$10.1 million in new wages into the local economy, which will support local businesses. The total value of construction phase earnings is estimated to be \$13.7 million.<sup>107</sup> During the operations phase, the proposed solar facility will create approximately two full time equivalent jobs in Marion County.

The Harvey Economics Report determined that the construction and operation of the Northern Bobwhite solar facility will provide some, limited economic benefits to the region and to the state.<sup>108</sup> The report states that overall, the Northern Bobwhite project

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<sup>104</sup> Application Part I, Exhibit N at 498.

<sup>105</sup> *Id.* at 495.

<sup>106</sup> Harvey Economics Report at 71.

<sup>107</sup> *Id.*

<sup>108</sup> Harvey Economics Report at 17.

will result in measurable, but temporary, positive economic effects to the region during the construction phase. Harvey Economics found that construction activity will generate regional employment and income opportunities; those effects will be temporary, but local hires will increase employment and incomes to an area which needs it.<sup>109</sup> During the operational phase, the report finds that operational benefits will be confined mostly to annual property taxes paid to multiple Marion County taxing authorities. Lastly, the report notes that operational employment will be minimal, and purchases of materials or supplies will be very small on an annual basis.<sup>110</sup>

Having reviewed the record, the Siting Board finds that the Northern Bobwhite 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

Northern Bobwhite 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.<sup>111</sup> The Project is connecting to EKPC Marion County 161-kV substation. A transmission capacity study was performed to determine suitability of the location. Once it was determined that the location had available transmission capacity and generally favorable site characteristics, land parcels near the Marion County

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<sup>109</sup> *Id.*

<sup>110</sup> *Id.*

<sup>111</sup> Application Part I at 14.

substation were screened for their suitability for hosting solar infrastructure. Voluntary land agreements were negotiated with willing landowners in the project area.<sup>112</sup>

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 Northern Bobwhite solar facility will be located does not contain any other generating facilities, the Siting Board notes the selected site will encompass an existing transmission facilities and Northern Bobwhite 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

Northern Bobwhite states that the proposed solar facility will be located entirely in Marion County, and that there are no local setback requirements established for the location of the Project. Northern Bobwhite certifies that the Project will be in compliance with all local ordinances and regulation concerning noise control and with any applicable local planning and zoning ordinances.<sup>113</sup>

The Siting Board finds that Northern Bobwhite's certification that the proposed solar 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

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<sup>112</sup> *Id.*

<sup>113</sup> Application Part I at 8.

Northern Bobwhite 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.<sup>114</sup> The interconnection 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 Northern Bobwhite solar facility to the PJM network at a location specified by Northern Bobwhite. PJM issued the Feasibility Study Reports on the Northern Bobwhite project in February 2019.<sup>115</sup> The Feasibility Study shows that Northern Bobwhite will be responsible for total upgrade costs of approximately \$2,500,000, upgrades consisting of attachment facilities, a direct connection network upgrade, and a non-direct connection network upgrade.<sup>116</sup>

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 Northern Bobwhite solar facility in August 2019, and it identified Tennessee Valley Authority (TVA) and Louisville Gas and Electric Company/Kentucky Utilities Company (LGE/KU) as potential Affected Systems. The System Impact Study Report further indicated that Northern Bobwhite will be responsible for total upgrade costs of approximately \$2,500,000, upgrades consisting of attachment

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<sup>114</sup> Application Part I at 16.

<sup>115</sup> *Id.*

<sup>116</sup> Application Part I, Exhibit G, Feasibility Study Report at 64.

facilities, a direct connection network upgrade, and a non-direct connection network upgrade.<sup>117</sup>

Northern Bobwhite states that PJM issued the Facilities Study in July 2020. Prior to this final step, LG&E/KU and TVA had affected systems studies done in May 2020 and in April 2020 respectively to determine whether there will be any upgrades required to LG&E/KU facilities. Both TVA and LGE/KU confirmed that Northern Bobwhite would have no adverse effects on their systems and therefore no upgrades are required to accommodate the interconnection of the Project.<sup>118</sup>

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 Northern Bobwhite 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 Northern Bobwhite'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 Northern Bobwhite has satisfied the requirements of KRS 278.710(f).

#### Compliance with Setback Requirements

Northern Bobwhite'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

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<sup>117</sup> Application Part I, Exhibit H, Impact Study Report at 82.

<sup>118</sup> Application Part I, Exhibit L, LGE/KU Affected System Study at 467 and Application Part I, Exhibit M, TVA Affected System Study at 489.

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. Northern Bobwhite states that there is one residential neighborhood near the Project. Northern Bobwhite filed a motion, pursuant to KRS 278.704(4), seeking a deviation from the 2,000 feet setback requirement.<sup>119</sup> Within the single nearby residential neighborhood there are ten homes along Horan Lane and twelve homes along Green Valley Drive (Horan-Green Valley Neighborhood).<sup>120</sup> A parcel with planned Project generation facilities is adjacent to the Horan-Green Valley Neighborhood; however, those generation facilities are currently planned to be located approximately 625 feet from the neighborhood.<sup>121</sup> While not within the Horan-Green Valley Neighborhood, there is a residence at the far eastern end of Horan Lane that is also adjacent to a Project parcel. This residence is located approximately 300 feet from generation facilities, including an inverter, and this residence is the closest residence to an inverter throughout the Project.<sup>122</sup>

Northern Bobwhite is seeking a deviation from the 2,000-foot setback requirement in KRS 278.704(2) to allow it to place generating equipment 625 feet from the Horan-

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<sup>119</sup> Motion for Deviation from Setback Requirements at 3.

<sup>120</sup> *Id.*

<sup>121</sup> *Id.*

<sup>122</sup> *Id.*

Green Valley Neighborhood.<sup>123</sup> Additionally, Northern Bobwhite seeks approval to place Project inverters within 300 feet of residences within the Project area.<sup>124</sup>

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.

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, Northern Bobwhite developed a CEA for submission to the Cabinet.<sup>125</sup> KRS 224.10-280(3)(a) requires that the CEA for the proposed solar facility evaluate the types and quantities of air pollutants that will be emitted by the Project and a description of the methods that will be used to control those emissions. The CEA shows that the Northern Bobwhite solar facility will produce zero emissions while in operation and that limited air emissions will occur during construction through the

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<sup>123</sup> *Id.*

<sup>124</sup> *Id.*

<sup>125</sup> Motion for Deviation from Setback Requirements at 10.

operation of vehicles and equipment and will consist of emissions of particulate matter, carbon monoxide, nitrogen oxides, sulfur dioxide, and volatile organic compounds generated through the combustion of gasoline and diesel fuels.<sup>126</sup> Once construction is complete, the only emissions from the Project will be associated with the internal combustion engines of maintenance equipment used to repair the solar panels, worker transportation vehicles, and grounds keeping equipment such as mowers and trimmers. Accordingly and per the CEA no air emissions permit is required for the proposed facility.<sup>127</sup>

With respect to water evaluation, Northern Bobwhite will conduct Project construction activities under the coverage of the Kentucky Pollutant Discharge Elimination System permit for stormwater Discharges Associated with Construction Activities.<sup>128</sup> Northern Bobwhite states that it will implement a stormwater pollution prevention plan which will identify best management practices that will be followed to minimize impacts associated with construction.<sup>129</sup> During operation Northern Bobwhite will store small quantities of petroleum fuels, lubricants, and fluids as well as grounds keeping chemicals for use in maintenance and upkeep.<sup>130</sup> These chemicals will be stored inside a building or, if bulk storage is used, in appropriate tanks with secondary containment. Northern Bobwhite will implement best management practices to minimize the impacts of any spills

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<sup>126</sup> Motion for Deviation from Setback Requirements at 11.

<sup>127</sup> *Id.*

<sup>128</sup> *Id.*

<sup>129</sup> *Id.* at 12.

<sup>130</sup> *Id.*

on groundwater or surface water.<sup>131</sup> The CEA concludes that “given the minimal chemical use and implemented best management practices, it is unlikely that this Project will negatively impact any water resources in the area during the construction or ongoing operations phases.”<sup>132</sup>

With respect to waste evaluation, the CEA notes that construction activities will generate solid waste consisting of construction debris and general trash, such as wood, cardboard, and plastic packaging. No special wastes as defined in KRS 224.50–760 are anticipated to be generated during construction or operations and maintenance.<sup>133</sup> No existing structures would be demolished. Northern Bobwhite states that wastes developed during construction and operation will be recycled where practicable or otherwise disposed of in accordance with applicable regulations.<sup>134</sup>

With respect to managing water withdrawal and usage, the Northern Bobwhite solar facility will primarily utilize groundwater from existing onsite wells to provide water or water will be hauled as needed for construction activities.<sup>135</sup> Construction-related water use would support site preparation (including dust control, if applicable) and grading activities. Similar to other solar facilities, the Northern Bobwhite solar project is not water intensive during the operational phase.<sup>136</sup>

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<sup>131</sup> *Id.*

<sup>132</sup> *Id.*

<sup>133</sup> *Id.*

<sup>134</sup> *Id.*

<sup>135</sup> *Id.* at 13.

<sup>136</sup> *Id.*

Northern Bobwhite 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, Northern Bobwhite 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. Northern Bobwhite 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. Northern Bobwhite 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. Northern Bobwhite avers that it has met the goals of KRS 278.212 because Northern Bobwhite will comply with all applicable conditions relating to electrical interconnection with utilities by following the PJM interconnection process. Additionally, Northern Bobwhite 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. Northern Bobwhite 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 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. Northern Bobwhite states that it is not a utility under the jurisdiction of the Kentucky PSC. However, Northern Bobwhite 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. Northern Bobwhite 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 Northern Bobwhite, Northern Bobwhite 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. Northern Bobwhite states that it has met the goals set forth in these provisions as evidenced by the application in its entirety. Northern Bobwhite 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 Northern Bobwhite 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, contingent on Northern Bobwhite maintaining its proposal to place generating equipment no closer than 625 feet from the Horan-Green Valley Neighborhood. 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

Northern Bobwhite 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 Northern Bobwhite, nor any entity with ownership interest in the Project.<sup>137</sup>

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

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<sup>137</sup> Application Part I at 19.

## Decommissioning

According to Northern Bobwhite, the proposed solar facility would have an expected useful life of 35 years.<sup>138</sup> Northern Bobwhite has not yet provided a formal decommissioning plan, but during the formal evidentiary hearing held on May 4, 2021, Mr. Scott Wentzell, Project Development Manager for EDF Renewables, responsible for overall project development including decommissioning, provided testimony that Northern Bobwhite is committed to developing a formal decommissioning plan for the project. Additionally, in the responses to Siting Board Staff's Post-Hearing Data Requests Northern Bobwhite advised that it anticipates that a formal decommissioning plan can be drafted within six to eight weeks after final engineering and design for the facility is complete, and that a formal decommissioning plan will be submitted to the Siting Board no later than one month prior to the start of construction. Northern Bobwhite itself as well as its successors and assigns will decommission the entire site if the Project ceases producing electricity for a period of more than twelve months.<sup>139</sup> Northern Bobwhite has provided a general description of the decommissioning activities to occur at the end of Northern Bobwhite's Project life. The Applicant has also indicated that land restoration commitments have been made with landowners as part of the lease agreements.<sup>140</sup>

The Harvey Economics Report recommends the following mitigation measures to ensure the commitments to decommissioning are met.

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<sup>138</sup> Application Part II, Site Assessment Report, Appendix D, Noise Assessment at 177.

<sup>139</sup> Supplement to Mitigation Measures at 2.

<sup>140</sup> Harvey Economics Report at 75.

1. As applicable to individual lease agreements, the Applicant, 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.

2. The Applicant should develop an explicit decommissioning plan. This plan should commit the Applicant to removing all facility components from the Site and from Marion County at the cessation of operations.

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 and finalized. This final decommissioning plan shall be filed with the Siting Board or its successors. The final decommissioning plan shall be filed with Siting Board within one month prior to starting construction. 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 Northern Bobwhite at any depth. This requirement holds regardless of the depths at which Northern Bobwhite 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.

Northern Bobwhite shall also be required to file a bond equal to the amount necessary to effectuate the explicit decommissioning plan naming Marion 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 Marion County will have the authority to draw upon the bond to effectuate the decommissioning plan. The bond shall be in place at the commencement of operation. The bond amount shall be reviewed every five years at Northern Bobwhite'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 Marion 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 Northern Bobwhite 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 Northern Bobwhite has presented sufficient evidence to support the issuance of a deviation from the setback requirements of KRS 278.704(2) and a Certificate to Construct 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:

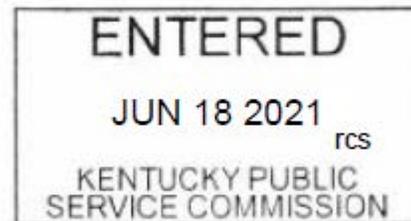
1. Northern Bobwhite's application for a Certificate to Construct an approximately 96 MWac merchant solar electric generating facility in Marion County, Kentucky, is conditionally granted subject to full compliance with the mitigation measures and condition prescribed in Appendix A.

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

3. Northern Bobwhite 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



ATTEST:

  
\_\_\_\_\_ for  
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- 00208 DATED JUN 18 2020

#### MITIGATION MEASURES AND CONDITIONS IMPOSED

The following mitigation measures and conditions are hereby imposed on Northern Bobwhite Solar LLC (Northern Bobwhite or Applicant) to ensure that the facilities proposed in this proceeding are constructed as ordered.

1. A final site layout plan shall be submitted to the Siting Board upon completion of the final site design. Deviations from the preliminary site layout plan which formed the basis for Harvey Economics's review should be clearly indicated on the revised graphic. Those changes could include, but are not limited to, location of solar panels, inverters, transformers, substation, operations and maintenance building or other Project facilities and infrastructure.

2. Any change in Project boundaries from the information which formed this evaluation should be submitted to the Siting Board for review.

3. The Board will determine if any deviation in the boundaries or site development plan is likely to create a materially different pattern or magnitude of impacts. If not, no further action is required, but if yes, the Applicant will support the Siting Board's effort to revise its assessment of impacts and mitigation requirements.

4. A final, Project specific, construction schedule, including revised estimates of on-site workers and commuter vehicle traffic, shall be submitted to the Siting Board. Deviations from the preliminary construction schedule, which formed the basis for Harvey Economics's review, should be clearly indicated.

5. The Board will determine if any deviation to the construction schedule or workforce estimates is likely to create a materially different pattern or magnitude of impacts. If not, no further action is required, but if yes, the Applicant will support the Siting Board's effort to revise its assessment of impacts and mitigation requirements.

6. The Applicant or its contractor will control access to the site during construction and operation. All construction entrances will be gated and locked when not in use.

7. The Applicant's access control strategy shall also include appropriate signage to warn potential trespassers. The Applicant must ensure that all site entrances and boundaries have adequate signage, particularly in locations visible to the public, local residents, and business owners.

8. According to National Electric Code regulations, the security fence must be installed prior to any electrical installation work. The substation will have its own separate security fence and locked access installed.

9. Northern Bobwhite will not remove any existing vegetation unless the existing vegetation needs to be removed for placement of solar panels.

10. 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 nearby homes and roadways.

11. Northern Bobwhite shall follow through on its commitment to providing vegetative buffers for 15 houses with sight lines within 500 feet of the solar panels, and for 1.85 miles of roadways within 300 feet of the solar panels. 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 Northern Bobwhite that such a buffer is not necessary, Northern Bobwhite will need to obtain that property owner's written consent and submit such consent in writing to the Siting Board.

12. Northern Bobwhite shall continue to work with homeowners to address glare impacts for any residents that experience glare for more than 60 minutes in a year.

13. The Applicant will consider cultivating at least two acres of native pollinator-friendly species within the solar facility site in the southwestern and northeastern parcels of the Project, leaving the site with a total of four acres of native pollinator-friendly species.

14. Northern Bobwhite will not remove any existing vegetation unless the existing vegetation needs to be removed, except to the extent it must remove such vegetation for the construction and operation of Project components.

15. Northern Bobwhite shall follow through on its commitment to providing vegetative buffers for 15 houses with sight lines within 500 feet of the solar panels, and for 1.85 miles of roadways within 300 feet of the solar panels. 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 Northern Bobwhite that such a buffer is not necessary, Northern Bobwhite will need to obtain that property owner's written consent and submit such consent in writing to the Siting Board.

16. The Applicant has committed to rectify any damage to public roads resulting from Project construction. Harvey Economics recommends that "rectify" mean fix or fully compensate road authorities as necessary to mitigate any damage that may occur to the existing road network.

17. The Applicant will comply with all laws and regulations regarding the use of roadways.

18. The Applicant will consult with the Kentucky Transportation Cabinet (KTC) regarding truck and other construction traffic and obtain necessary permits from the KTC.

19. The Applicant will consult with Marion County Road Department (MCRD) regarding truck and other construction traffic and obtain necessary permits from the MCRD.

20. The Applicant will comply with any road use agreement executed with the MCRD. Such an agreement might consider special considerations for overweight loads, routes utilized by heavy trucks, road weight limits and bridge weight limits.

21. The Applicant will properly maintain construction equipment and follow best management practices related to fugitive dust throughout the construction process. This should keep dust impacts to a minimal level.

22. Northern Bobwhite 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.

23. Northern Bobwhite 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.

24. Northern Bobwhite 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.

25. Northern Bobwhite 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.

26. Northern Bobwhite 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.

27. Northern Bobwhite shall notify residents and businesses within 2,400 feet of the project boundary about the construction plan, the noise potential, and the mitigation plans at least one month prior to the start of construction.

28. Northern Bobwhite 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. If the noise levels are unduly high or annoying, the Applicant should mitigate those effects as needed.

29. Pile driving activities shall cease by 6 p.m. each day. Since the area is largely rural, a constant pounding during evening hours has the potential to upset the natural tranquility of the area and severely annoy residents.

30. Northern Bobwhite shall notify residents and businesses within 2,400 feet of the project boundary about the construction plan, the noise potential, and the mitigation plans at least one month prior to construction start.

31. Northern Bobwhite 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.

32. Construction and pile driving activities are limited to 8 a.m. to 6 p.m., but within 1,000 feet of a non-participating home pile driving shall begin no earlier than 9 a.m. and shall cease by 5 p.m. each day.

33. If the pile driving activity occurs within 1,500 feet of a noise sensitive receptor, Northern Bobwhite 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).<sup>141</sup>

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

35. Northern Bobwhite shall place panels, inverters and substation equipment no closer to noise receptors (homes) than indicated in Northern Bobwhite's noise and traffic study, but additional mitigate measures are required for anticipated noises levels

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<sup>141</sup> 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* (filed May 25, 2021) Ashwood Solar's Response to Siting Board Staff's Post-Hearing Request for Information, Item 2.

of certain facilities. Specifically, based on the noise information provided by the Applicant the Siting Board has three 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, and (3) Solar Panels no closer to a noise receptor than 150 feet.

36. Setbacks for solar equipment from roads and property lines, with increased setbacks for certain equipment, and additional setbacks from the non-participating residential homes that are located relatively close to property lines. Northern Bobwhite proposes the following setbacks for solar equipment: 100 feet from adjacent roadways, 50 feet from the boundary of any non-participating properties. Applicant proposes the following additional setback for central inverters, and energy storage systems: at least 300 feet from any residence. Project construction activities will only occur between the hours of 7 a.m. and 10 p.m.

37. Northern Bobwhite will maintain natural vegetative screening; however, where the Project could be visible from a roadway or neighboring residence, the Project will add a vegetative buffer to mitigate viewshed impacts. Bobwhite will install vegetative buffering where natural screening is not present if solar panels or inverters are sited within 500 feet of a residence within direct line of site, or if solar panels or inverters are located within 300 feet of a public roadway within direct line of site.

38. The Project site is near a small municipal airport, to the north. Bobwhite will follow Federal Aviation Administration (FAA) guidelines for determining glare issues for ingress and egress from the airport. Based on other solar developments near larger airports, Bobwhite does not anticipate any mitigation with respect to glare.

39. At the request of Northern Bobwhite, Terracon completed Phase I Environmental Site Assessments for the parcels that comprise the facility. This assessment provides a baseline for returning property to its current condition after decommissioning. Northern Bobwhite will rely on the baseline established in Phase I Environmental Site Assessment during the decommissioning process.

40. Northern Bobwhite engaged Terracon to complete a wetland survey and delineation of the Project site. Identified wetlands and jurisdictional waters will be avoided during construction and operation to the extent practicable. Note the total acreage assessed may not equal the total acreage of the Project. The assessment covered areas outside the preliminary site layout. If necessary, it is anticipated that the Project would utilize applicable USACE Nationwide Permits. Any required USACE permits or DOW permits will be obtained prior to commencement of construction.

41. Northern Bobwhite provided a threatened and endangered species report. The presence of potential habitat for the Indiana and Northern long-eared bats requires that any tree clearing would need to be performed seasonally or additional investigations and consultation with regulatory agencies may be necessary. Northern Bobwhite will take this into consideration when determining any tree clearing and coordinate as necessary with the regulatory agencies.

42. As applicable to individual lease agreements, the Applicant, 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.

43. The Applicant should develop an explicit decommissioning plan. This plan should commit the Applicant to removing all facility components from the Site and from Marion County at the cessation of operations.

44. Northern Bobwhite shall develop and finalize an explicit or formal decommissioning plan to carry out land restoration. Land restoration requires removal of all facility components at any depth independent of the terms under any lease agreement, while also performing soil and vegetation restoration. This final decommissioning plan shall be filed with the Siting Board or its successors. The final decommissioning plan shall be filed with Siting Board within one month prior to starting construction. The decommissioning plan shall commit Northern Bobwhite to removing all facility components from the project site and Marion County at the cessation of operations.

45. Northern Bobwhite shall file a bond, equal to the amount necessary to effectuate the explicit or formal decommissioning plan naming Marion 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 Marion County will have the authority to draw upon the bond to effectuate the decommissioning plan. The bond shall be in place at the commencement of operation. The bond amount shall be reviewed every five years at Northern Bobwhite'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 Marion 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.

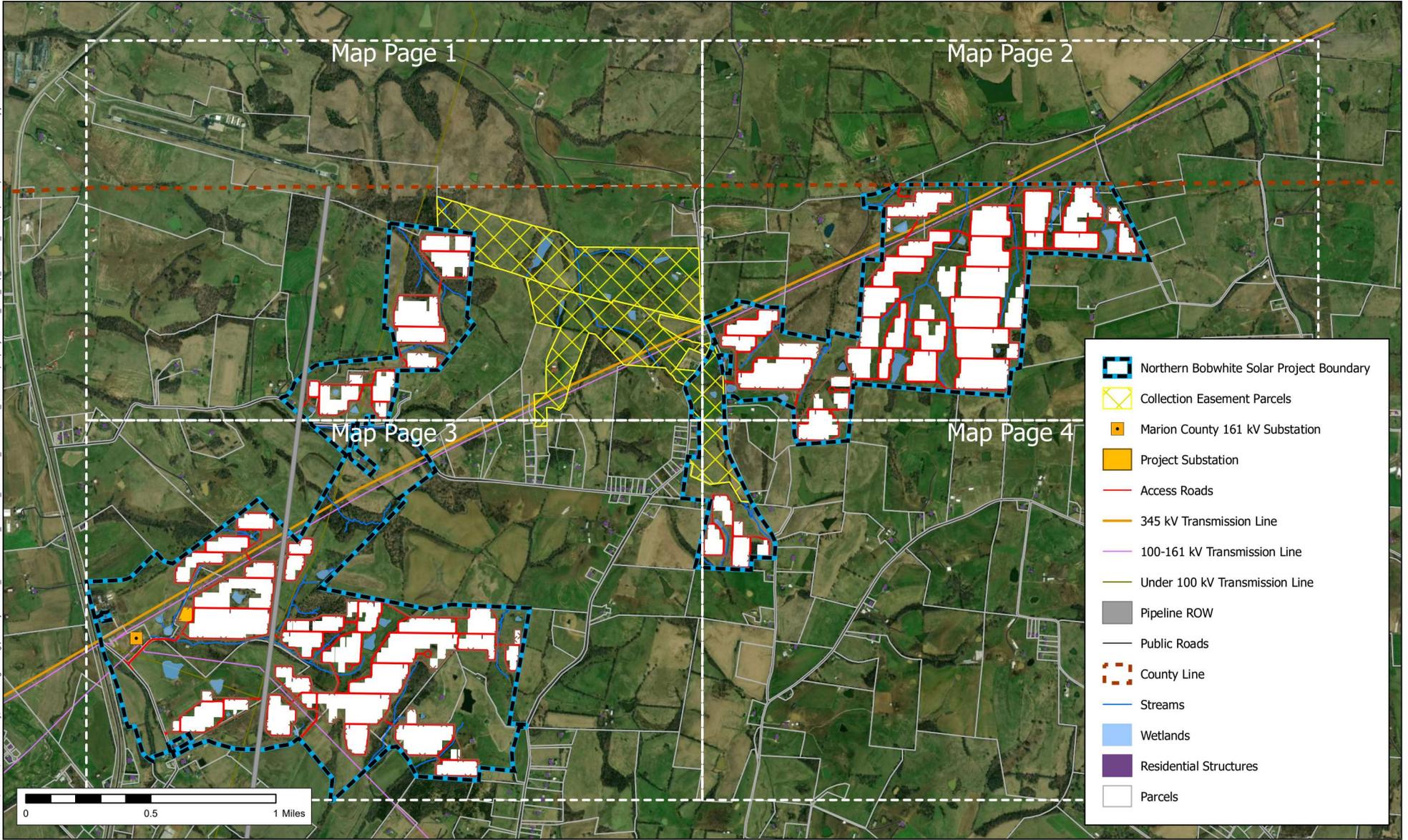
APPENDIX B

APPENDIX TO AN ORDER OF THE KENTUCKY STATE BOARD ON  
ELECTRIC GENERATION AND TRANSMISSION SITING IN CASE NO. 2020-  
00208 DATED JUN 18 2021

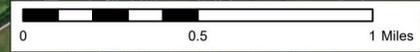
Northern Bobwhite Solar LLC – Site Plan Map

ONE PAGE TO FOLLOW

Source: Esri, Geonix, Marion County, Olsson Engineering | G:\Projects\USA\_North\Northern\_Bobwhite.aprx | GIS\Northern\_Bobwhite.aprx | Layout\_Site\_Plan\_Map\_Overview\_Tribold | Last Updated 12/21/2020 by jessica leonard



- Northern Bobwhite Solar Project Boundary
- Collection Easement Parcels
- Marion County 161 kV Substation
- Project Substation
- Access Roads
- 345 kV Transmission Line
- 100-161 kV Transmission Line
- Under 100 kV Transmission Line
- Pipeline ROW
- Public Roads
- County Line
- Streams
- Wetlands
- Residential Structures
- Parcels



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