

August 7, 2023



Solar Generation Siting Final Report – Sebree Solar II

KY State Board on Electric Generation
and Transmission Siting
Case #2022-00131

Customer:
Kentucky Public Service
Commission

Prepared for:
KY State Board on Electric Generation
and Transmission Siting

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August 7, 2023



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Solar Generation siting Final Report – Sebree Solar II

Synopsis

This document is the Final Report prepared by Wells Engineering for the Sebree Solar II Electric Solar Generating facility in Henderson County, KY.

WEpsc Order: WE230426115

Public Service Commission PO:
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Contents

1	General Statement	8
1.1	Scope.....	8
1.2	Reference Document.....	8
2	Solar Electric Power – ‘Know-how’	10
2.1	Solar Power Plant.....	11
2.2	Role of Solar Modules.....	12
2.3	Role of Inverters.....	12
2.4	Role of Batteries.....	13
2.5	Role of Transformers and Other associated switchyard equipment.....	14
2.6	Role of Steel & Concrete Structures, Roadways & Fencing.....	16
2.7	General Effects of Solar Power Plants	17
2.7.1	Noise from the Equipment	17
2.7.2	Increased Road Traffic, Noise and Fugitive dust.....	17
2.7.3	Environmental and Wildlife	17
2.7.4	Farming land	18
3	Sebree Solar II – Application Review & Findings	19
3.1	Initial Review.....	19
3.2	Site Visit.....	19
3.3	Final Review	30
3.3.1	Review of Application documents	30
3.3.2	278.708(3)(a)(1) Surrounding Land Uses.....	30
3.3.3	278.708(3)(a)(2) Legal Boundaries.....	31
3.3.4	278.708(3)(a)(3) Proposed Access Control.....	31
3.3.5	278.708(3)(a)(4) Location of Facility Buildings & Transmission Lines	31
3.3.6	278.708(3)(a)(5) Location and Use of Accessways, Internal Road & Railways.....	31
3.3.7	278.708(3)(a)(6) Existing or Proposed Utilities to Service the Facility	32

3.3.8	278.708(3)(a)(7) Compliance with Applicable setback requirements.....	32
3.3.9	278.708(3)(a)(8); (b); (d) & (e) Evaluation of Noise levels, Scenic surroundings, Environmental impact & Fugitive Dust	32
3.3.10	278.708(3)(c) Property Values	33
3.3.11	278.710(1)(c) Economic Impact Analysis.....	33
4	Recommendations & Mitigations Measures	34
4.1	Cumulative effect of the Total Solar generation on the Grid	34

Attachment – A

Executive Summary Sebree Solar II Adequacy Final Report

Attachment – B

Impact on Property Values

Attachment – C

Economic Impact Analysis

REVISIONS

Revision	Date Issued	Issue Type	By	Description
0	8-03-23	Final Report	CA	Issue for Review & Record

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1 General Statement

The present document is the Final report prepared for the Solar Generation siting project of Sebree Solar II LLC who is applying for a certificate of construction for an approximately 150 MW Merchant Electric Solar Generation Facility in Henderson County, KY.

1.1 Scope

As part of the personal service contract for the ‘Generation Siting Board 2023’, between The Commonwealth of Kentucky Energy Environment Cabinet/Public Service commission and Wells Engineering, in the matter of the order issued for case number 2022-00131, Wells Engineering was appointed to review the Application documents and the Site assessment report submitted by the applicant as per the Kentucky Revised Statutes 278.706 & .708 and submit a Final report on the Solar Generation Siting for the application for a construction certificate by Sebree Solar II LLC in Henderson County KY. This project is an expansion of an existing project by Sebree Solar LLC in Webster County KY (case number 2021-00072).

Wells Engineering performed the review of the Application documents and the Site Assessment report submitted by the applicant by assigning it to the Senior Engineers and Designers at Wells Engineering and by hiring experts as per different requirements of the siting project as seen by Wells Engineering.

Wells Engineering contracted the following expertise based on the requirements of the project,

- i) Clover lake Consulting Services for Environmental assessment.
- ii) Watters Unclaimed Property Consulting LLC for Economic impact.
- iii) Clark Toleman, MAI-SRA for the review on impact on property values.

1.2 Reference Document

The following documents are referenced for the creation of this document.

- i) Read_1st_4-18-23 (Read 1st)
- ii) Sebree_II-Final_App_Ex_10-Att_A (Exhibit 10)
- iii) Sebree_II-Final_Ex_12-Att_A-Ex_2-Legal_Des (Exhibit 12-2)
- iv) Sebree_II-Final_Ex_12-Att_A-Ex_3-Pre_Site_Layout (Exhibit 12-3)
- v) Sebree_II-Final_Ex_12-Att_A-Ex_4-Noise_Impact (Exhibit 12-4)
- vi) Sebree_II-Final_Ex_12-Att_A-Ex-5_Vegetation (Exhibit 12-5)
- vii) Sebree_II-Final_Ex_12-Att_A-Ex_6-Traffic (Exhibit 12-6)
- viii) Sebree_II-Final_Ex_12-Att_A-Ex8-Decom (Exhibit 12-8)

Solar Generation Siting Final Report

Sebree Solar II, LLC

KY State Board on Electric Generation and Transmission Siting

Case #2022-00131



- ix) Sebree_II-Final_Ex_12-Att_A_Ex1-P_A (Exhibit 12-1-A)
- x) Sebree_II-Final_Ex_12-Att_A_Ex1-P_B (Exhibit 12-1-B)
- xi) Sebree_II-Final_Ex_12-Att_A_Ex1-P_C (Exhibit 12-1-C)
- xii) Sebree_II-Final_Ex_6-Att_A (Exhibit 6-A)
- xiii) Sebree_II-Final_Ex_6-Att_B (Exhibit 6-B)
- xiv) Sebree_II-Final_Ex_6-Att_C (Exhibit 6-C)
- xv) Sebree_II-Final_Ex_6-Att_D (Exhibit 6-D)
- xvi) Sebree_II-Final_Ex_12-Att_A_Ex_7_ESA_Part1_Final (Exhibit 12-7-1)
- xvii) Sebree_II-Final_Att_A_Ex_7_ESA_Part2_Final (Exhibit 12-7-2)
- xviii) Sebree_Solar_II_-_Application_Final (Application)
- xix) Sebree_Solar_II_-_Final_App_Ex_6 (Exhibit 6)
- xx) Sebree_Solar_II_-_Final_App_Ex_1_-_Att_A (Exhibit 1)
- xxi) Sebree_Solar_II_-_Final_App_Ex_11 (Exhibit 11)
- xxii) Sebree_Solar_II_-_Final_App_Ex_12 (Exhibit 12)
- xxiii) Sebree_Solar_II_-_Final_App_Ex_13_-_Att_A (Exhibit 13)
- xxiv) Sebree_Solar_II_-_Final_App_Ex_2_-_Att_A (Exhibit 2)
- xxv) Sebree_Solar_II_-_Final_App_Ex_3_-_Att_A-C (Exhibit 3)
- xxvi) Sebree_Solar_II_-_Final_App_Ex_4_-_Att_A (Exhibit 4)
- xxvii) Sebree_Solar_II_-_Final_App_Ex_7-Att_A (Exhibit 7)
- xxviii) Sebree_Solar_II_-_Final_App_Ex_8_-_Att_A-C (Exhibit 8)
- xxix) Sebree_Solar_II_-_Final_App_Ex_9_-_Att_A (Exhibit 9)
- xxx) Sebree_Solar_II_-_Motion_For_Deviation_Final_4-18-23 (Motion for Deviation)
- xxxi) Sebree_Solar_II_-_Final_App_Ex_5 (Exhibit 5)
- xxxii) Sebree_Solar_II_Final_App_Ex_12-Att_A_SAR_Text (Exhibit 12-Att A)
- xxxiii) Read 1st (Cover Letter)
- xxxiv) Responses_To_Siting_Board_Staff_First_DR_With_Atachments-_Final_-_230614_-_Optimized (Responses to Staff's First Data Request)
- xxxv) Sebree_Solar_II_-_Motion_for_Confidential_Treatment_-_230613 (Motion for Confidential Treatment)
- xxxvi) Read_1st_Responses_to_SB_Staff_DR-2 (Read 1st SB Staff's DR-2)
- xxxvii) Sebree_Solar_II_-_Response_to_SB_Staff_2nd_DR-A (Response to SB Staff's DR-2)

2 Solar Electric Power – ‘Know-how’

Earth receives energy from the sun in the form of heat and light. It is possible for the light energy received to be converted into electricity using a device called a solar cell or photovoltaic cell (PV Cell for short). A solar cell receives ‘Photons’ from sunlight which then produces Electric ‘Volts’ thus giving these devices the name ‘Photovoltaic’.

A simple solar cell is relatively small and can only produce a couple watts of electricity, which is not sufficient for large-scale utilization. To increase the power production, several cells are combined to form a ‘Solar Module’, which can produce a usable amount of electricity. A ‘Solar System’ is when several solar modules are arranged systematically for large-scale power production.

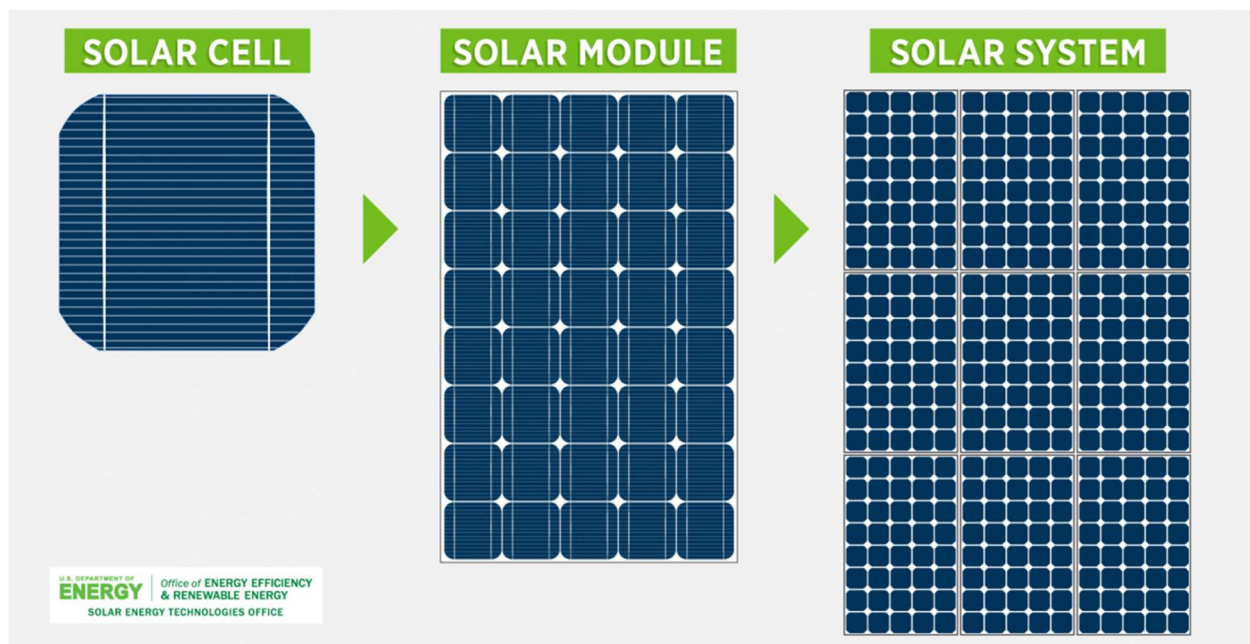


Figure (1)
Solar System¹

For electricity generated by Solar systems to be utilized, it first must be connected to the regional electric grid. Once the solar system is connected to the electric grid it can then be distributed to consumers. This is achieved by constructing a solar power plant with the use of a solar panels, in which the quantity and arrangement of solar modules is determined from the electrical system

¹ Picture from the official website of ‘Office of Energy Efficiency & Renewable Energy’

design of the plant and is then connected to the regional electric grid for distribution to the consumer.

2.1 Solar Power Plant

A Solar Power plant is an electric power plant constructed for generating electric power using solar modules. A Solar Power Plant consists of a solar system and the other associated electrical and plant equipment for transmitting the energy generated.



Figure (2)
A Solar Power Plant²

Some of the commonly seen equipment in a solar power plant are,

- i) Solar Modules
- ii) Inverters,
- iii) Batteries
- iv) Power transformer,
- v) High voltage Circuit breakers, Fuses and Other protection equipment
- vi) Utility Metering equipment
- vii) Electrical Conductors &
- viii) Steel & Concrete structures,

² Image found from [industrial-on-grid-scheme.png \(1600×1546\) \(avenston.com\)](https://www.avenston.com)

Solar Generation Siting Final Report

Sebree Solar II, LLC

KY State Board on Electric Generation and Transmission Siting

Case #2022-00131



A Solar Power plant, constructed by a private entity, after making Power Purchase Agreements (PPA) with the local Electric Power grid to supply electric power, is known as a 'Merchant Electric Solar Power Plant'.

2.2 Role of Solar Modules

As stated earlier a Solar Module which is 'Photovoltaic', uses 'Photons' that are absorbed from sunlight to then produce electric power. This electric power is unidirectional in nature and requires additional equipment such as Inverters and Transformers for Electric Power Utilization.

Besides the additional equipment, the Solar modules are manufactured with the ability to track the sun to increase their efficiency.



Picture (3)
Solar Modules Installed on Farmland³

2.3 Role of Inverters

The power produced by a solar system, because of its basic principle of operation, is unidirectional and is in the form of Direct Current or in short, DC. This form of DC Power is not

³ Refer to PV magazine [Molong Solar Farm no longer in development, successfully energised – pv magazine Australia \(pv-magazine-australia.com\)](https://www.pv-magazine-australia.com)

Solar Generation Siting Final Report

Sebree Solar II, LLC

KY State Board on Electric Generation and Transmission Siting

Case #2022-00131



suitable for utilization. The DC power should be converted to Alternating current, AC for utilization.

A 'Solar inverter' or a 'PV inverter' is a power electronic device which converts the DC Power generated by the Solar system, into AC Power. This AC Power is then transmitted to the electrical grid for power distribution.



Picture (4)
Industrial Solar Inverter⁴

2.4 Role of Batteries

As a Solar system can produce electric power only when the sunlight is available. It is because of this drawback a Solar power plant cannot produce electricity during night. In order to overcome this drawback Solar power plants are installed with batteries so that some portion of electricity produced by the solar modules during the day is stored in the batteries and retrieved during night.

The Solar Modules and the Batteries function on DC. A proper combination of Solar Modules and

⁴ Refer to PV magazine [SMA reaches 10 GW of installed Sunny Central inverters in North America – pv magazine USA \(pv-magazine-usa.com\)](https://www.pv-magazine.com)

Batteries can produce electricity all day long.



Picture (5)
GE Industrial Battery⁵

2.5 Role of Transformers and Other associated switchyard equipment

A Transformer is an electrical power equipment which is used either to step-up or to step-down the voltage of an electrical power source without changing the frequency of the voltage. A Transformer is an AC power equipment.

In a Solar Power plant, the power produced by the solar modules is converted into the useful form of AC by Inverters. The AC Power produced by inverters are at a relatively lower voltage compared to the voltage available at the electric power grid. A Transformer, which can step-up the voltage to match it with the grid, is used to overcome the difference in voltages and to establish an interconnection for the supply of power.

In a large Solar Power plant, every Inverter is installed with a Transformer locally to the inverter, to step-up the voltage to a medium level, other than the voltage available at the grid. This is done

⁵ Refer to PV magazine [GE to supply 100 MW/300 MWh battery for South Australia solar farm – pv magazine International \(pv-magazine.com\)](https://www.pv-magazine.com)

Solar Generation Siting Final Report

Sebree Solar II, LLC

KY State Board on Electric Generation and Transmission Siting

Case #2022-00131



to form a network of Transformers to collect the power coming from each Inverter.

This Electric network of transformers will have one high-capacity Main Transformer, which does the final step-up for the connection with the grid.

Besides the Transformers, Solar Power plants are installed with some other electrical equipment like,

- i) Electric Switchgear
- ii) Electric Bus system
- iii) Electric Protection system &
- iv) Electric Energy measurement system



Picture (6) Substation Transformer⁶

⁶ Image found from the following website [Transformer substation THE TRENT - The Trent \(thetrentonline.com\)](http://thetrentonline.com)

2.6 Role of Steel & Concrete Structures, Roadways & Fencing

Steel & Concrete structures are necessary structures for the installation of solar modules and all other necessary electrical equipment. Roadways provide access to the modules for site personnel for work to be completed for maintenance and general site operation. Fencing is installed at solar facilities to determine the boundary of the facility, safety, as well as controlling who has access to the facility.



Picture (7)
Steel & Concrete Structures of a 2MW Solar farm⁷

⁷ Image found from the following website
<https://www.energy.gov/eere/solar/solar-integration-inverters-and-grid-services-basics>

2.7 General Effects of Solar Power Plants

2.7.1 Noise from the Equipment

In a Solar power plant, the Solar Inverters and the Power Transformers are the main sources of noise. The cooling fans mounted on the Inverters and the Transformers are responsible for the majority of the noise. However, the noise produced by this equipment are effective only in the vicinity of the equipment and decay with the distance. When this equipment is located appropriately in the plant the effect of noise can be minimized.

2.7.2 Increased Road Traffic, Noise and Fugitive dust

The Solar Powerplant is a plant with stationary equipment producing energy based on the photovoltaic effect. There will not be any transportation of raw material or the plant wastage for the Solar power plant. Hence, Solar power plants do not increase the Traffic, Noise and Fugitive dust during the operation. However, during construction there will be considerable traffic of construction vehicles transporting the equipment of the plant. Necessary mitigation measures must be taken to avoid traffic congestion, Noise and Fugitive dust during the construction of the Solar Power plant

2.7.3 Environmental and Wildlife

Solar energy systems/power plants do not produce air pollution or greenhouse gases. In fact, solar energy consumption can have a positive indirect effect on the environment and reduces the use of other energy sources that have larger effects on the environment. However, some toxic materials and chemicals are used to make the photovoltaic (PV) cells of the Solar modules.

There has been a relatively low number of studies that have been done on how solar facilities affect wildlife. However, the following methods can be adopted to minimize the impact of Solar power plants on wildlife⁸,

- i) Avoid areas of high native biodiversity and high-quality natural communities
- ii) Allow for wildlife connectivity, now and in the face of climate change
- iii) Preferentially use disturbed or degraded lands
- iv) Protect water quality and avoid erosion
- v) Restore native vegetation and grasslands

⁸ Making Solar Wildlife-Friendly

Creating solutions to maximize conservation benefit from solar production

<https://www.nature.org/en-us/about-us/where-we-work/united-states/north-carolina/stories-in-north-carolina/making-solar-wildlife-friendly/>

- vi) Provide wildlife habitat

2.7.4 Farming land

One of the biggest concerns with solar farms built on farmland is the effects they will have on the land once all the panels and associated equipment are removed from the site, as well the effect on local wildlife species and the ability for the land to be used with domesticated animals.

The land occupying a solar farm can be reverted to agricultural uses once the project has reached the end of its operational life. The life of a solar installation is roughly 20-25 years and can provide a recovery period, increasing the value of that land for agriculture in the future. Giving soil rest can also maintain soil quality and contribute to the biodiversity of agricultural land.⁹

Silicon-based photovoltaic cells (PV) are the type of PV cells commonly used. Most solar panels are manufactured with a glass front that protects the PV cell as well as either a aluminum or steel frame. Research shows that traces metals leaching from solar modules is unlikely to present a significant risk due to the sealed nature of the PV cells. Some manufacturers use cadmium telluride (CdTe). Cadmium compounds are toxic, but studies show that these compounds cannot be emitted from CdTe modules during normal operation or even during fires. Industrial incineration temperatures, which are higher than grassfires, are required to release the compounds from the modules.¹⁰

During the Plant operation, Solar farms can be used to graze domestic animals such as sheep, which are commonly used to control vegetation at the facility as they do not climb on or damage the PV modules. It is not necessary to raise the PV modules in height to accommodate grazing as vegetation is accessible beneath the modules at the standard mounting heights. When sheep are used for grazing to control vegetation growth it can benefit local shepherds, the solar operators, and the land due to a reduction in mowing, herbicide, and other management needs. Cattle grazing is generally not compatible with PV facilities due to the risk of damage to the modules. Wild animals can graze under PV modules; however, security fences can be installed to increase the security of the facility as well as keeping out larger animals if they are deemed to be a damage risk to the modules. Fencing can be built to accommodate smaller animals such as foxes. The areas below the PV modules can be built to provide a habitat and forage to pollinators, birds, and other small species.¹¹

⁹ Farmer's Guide to Going Solar <https://www.energy.gov/eere/solar/farmers-guide-going-solar>

¹⁰ Farmer's Guide to Going Solar <https://www.energy.gov/eere/solar/farmers-guide-going-solar>

¹¹ Farmer's Guide to Going Solar <https://www.energy.gov/eere/solar/farmers-guide-going-solar>

3 Sebree Solar II – Application Review & Findings

The present document, as mentioned in the previous sections, is the final report created after reviewing the application documents submitted by the applicant, Sebree Solar II, LLC.

In this section, a detailed discussion is made on the Initial review, Site visit and the Final review from Wells Engineering.

3.1 Initial Review

Wells Engineering and its Consultants working on the Siting Project review the applicant document for their adequacy, as part of the requirements of the state order for the applicant's Case No. 2022-00131. After the initial review of the application documents, a list of statements was submitted from First and Second Requests for Information.

3.2 Site Visit

As part of the requirements of the state order, for the applicant's Case No. 2022-00131, Wells Engineering, made a visit to site as organized by the Siting board, on June 27th, 2023.

The locations visited are indicated on the picture below Reference Picture (8).



Picture (8) Sebree Solar II Site Visit Locations

Pictures from the site visit are shown in the following pages.



Picture (9) Location #1 (Culvert under KY-283)



Picture (10) Location #1 (Looking at Substation location)



Picture (11) Location #1 (Looking South)



Picture (12) Location #1 (Looking North)



Picture (13) Location #1 (House with potential view of Project Substation)



Picture (14) Location #2 (Looking west from the Cherry Hill Baptist Church parking lot)



Picture (15) Location #2 (Looking East)



Picture (16) Location #2 (Looking South)



Picture (17) Location #2 (Looking North, nonparticipating landowners)



Picture (18) Location #3 (Looking into Spencer Cemetery)

3.3 Final Review

In this section a detailed discussion is made on the major aspects of the application documents submitted for their compliance as per the statutes KRS 278.706, 708 & 710

3.3.1 Review of Application documents

Accordant with KRS 278.706 the applicant, Sebree Solar II LLC, submitted the application documents and a Site Assessment Report addressing the compliances on different requirements of KRS 278.708.

As per KRS 278.708(3) the Site Assessment Report shall include the following

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

As per KRS 278.710(1)(c) the 'Economic Impact of the facility' is studied for granting a Construction Certificate.

3.3.2 278.708(3)(a)(1) Surrounding Land Uses

Wells Engineering reviewed the Site Layout and maps submitted by the applicant and visited the site on June 27th, 2023. The findings after the site visit are discussed below.

Findings on the Site Layouts & maps

- 1) Underground communication lines should be identified at the time of construction.
- 2) Spencer Cemetery should be easily accessible.

3.3.3 278.708(3)(a)(2) Legal Boundaries

The documentation on the legal description of the land was found to be adequate as part of the application. However, any discrepancy identified at any stage of the project shall be brought to the attention of the Public Service Commission and resolved for legal compliance.

3.3.4 278.708(3)(a)(3) Proposed Access Control

As per the KRS requirements KRS 278.708 (3)(a)(3), the applicant has proposed the access control methods that are adopted for the site.

Finding on Proposed Access Control:

- 1) At the time of construction and operation of the plant, besides providing fencing (as proposed by the applicant), all necessary signage, caution boards and safety requirements as per OSHA shall be installed.

3.3.5 278.708(3)(a)(4) Location of Facility Buildings & Transmission Lines

After reviewing the Site Layout and other plans submitted by the applicant and after visiting the site, the following findings were made.

Findings on Location of Facility Buildings and Transmission lines.

- 1) Existing Electric services:
Any new power line should be clear of the existing electric service line, power pole and guy wire.
- 2) The Substation will need oil containment for the Transformer to prevent any leakage of oil into nearby bodies of water.

3.3.6 278.708(3)(a)(5) Location and Use of Accessways, Internal Road & Railways

As part of the site visit, major access points are visited, and the following findings were made.

Findings on Location and Use of Accessways, Internal Road & Road

- 1) The internal roads are proposed to be all-weather gravel.
- 2) A railroad is in close proximity to the project area. During the site visit the applicant's representatives stated that railroads won't be used for material delivery.
- 3) Avoid using Oversize trailers for material transport and limit the overall weight as per the bridges and culverts of the Road. Install new culverts if necessary.

3.3.7 278.708(3)(a)(6) Existing or Proposed Utilities to Service the Facility

After reviewing the plot plans submitted by the applicant, it was found that the drawings do not indicate the utilities to the Operation & Maintenance building of the plant, as the drawings are prepared as preliminary. The applicant has not indicated if water, internet, or phone connection will be provided to the site. As applicable, there should be necessary drawings created indicating all underground, overhead utilities required to site at the time of construction.

3.3.8 278.708(3)(a)(7) Compliance with Applicable setback requirements

The KRS required setback is 2000 feet. This setback is practical for turbine-based plants but not practical for a solar power plant. After reviewing the application documents, Layouts & Maps, it was found that the following setback distances are followed,

25' from the project areas perimeter property lines
100' from any residential structure.

3.3.9 278.708(3)(a)(8); (b); (d) & (e) Evaluation of Noise levels, Scenic surroundings, Environmental impact & Fugitive Dust

Wells Engineering has appointed Thomas Chaney for the Environmental Assessment of site for Noise, Scenic surroundings, historic and archeological, Environmental & Fugitive dust. The summary of review is as below,

“At its conclusion, this adequacy report shows that the application submitted by the applicant, Sebree Solar II is fully in compliance with the intent of the Kentucky Revised Statutes.”

Reference Attachment-A for complete report from Cloverlake Consulting.

3.3.10 278.708(3)(c) Property Values

Wells Engineering has appointed Clark Toleman for the assessment of the Application document for the impact on Property Values. The conclusion is described below.

Conclusion: "Considering my analysis of the CohenReznick Impact Study I have concluded that the report is credible and representative of the market conditions that would exist should the Sebree Solar II Project be constructed based on the market evidence and interpretation of the data contained in the Impact Study. The report includes a review of published studies on property value impacts associated with solar projects, paired sales analysis in eleven comparable solar projects, and interviews with real estate professionals and real property assessors."

Reference the Attachment-B for complete report from, E. Clark Toleman MAI, SRA.

3.3.11 278.710(1)(c) Economic Impact Analysis

Economic Impact Analysis was performed by Mark Watters, as contracted by Wells Engineering, for the Site Assessment.

Summary: "This is a significant project for the Applicant and the State. The economic impact analyses by Applicant Sebree Solar II, LLC is absent of much detail. However, the available information would indicate a very profitable venture for the Applicant and a significant increase in economic value for the state."

Reference the Attachment-C for complete report from Mark M. Watters.

4 Recommendations & Mitigations Measures

After reviewing the application documents and performing the site visit, Wells Engineering provides the following Recommendations & Mitigation measures.

1. When designing the solar modules and other associated equipment of the plant maintain sufficient clearance according to the NESC from the existing power lines.
2. Confirm capacity and construct new bridges or culverts wherever necessary for heavy equipment transportation.
3. Adhere to the setback distance at all locations as per guidelines from the local planning zone authority. If no ordinances are in place, apply for a deviation to the KRS 276.706(2)(e).
4. Setbacks for solar equipment from roads and property lines, with increased setbacks for certain equipment. Security fencing, and vegetative buffer shall not be subject to setback restrictions.
5. Leaving existing vegetation between solar equipment and neighboring residences in place, to the extent practicable, to help screen the Project and reduce the visual impact.
6. Notices to neighbors regarding potential construction and operation noises, as well as limits on working hours during the construction period, as described in the Application.

4.1 Cumulative effect of the Total Solar generation on the Grid

Solar developments are rapidly increasing and while the impact to the surrounding environment might be minimal, the combined or cumulative effects of multiple developments may have a greater impact. Environmental concerns due to cumulative impacts, such as Glint, Glare and emission are expected to grow.

The proposed project would create air emissions due to vehicle and dust emissions associated with development activities. Similar effects would be experienced during decommissioning, which would be carried out according to the project's restoration plan.

Generating electricity using solar rather than fossil fuels reduce greenhouse gas emissions and helps address climate change. While solar energy is preferable to fossil fuel generators from an emissions perspective, power output from solar energy sources depends on variable natural resources, which makes these plants more difficult to control and presents challenges for grid operators.

As the electricity from solar energy can be produced only during daytime, the Solar Power projects have the inherent risk of unavailability during nighttime. The utilities and the transmission planning authorities shall identify the risks associated with this and plan the intake of the energy from Solar plants effectively.

Solar Generation Siting Final Report

Sebree Solar II, LLC

KY State Board on Electric Generation and Transmission Siting

Case #2022-00131



To accurately balance electricity supply and demand on the power grid, grid operators must understand how much solar energy is being generated at any given time, how much solar energy generation is expected, and how to respond to changing generation. This can be challenging for grid operators due to the intermittent nature of solar energy and the wide variety in the size and locations of solar energy across the power grid. As the proportion of solar energy capacity on the grid increases, these issues are becoming increasingly important to understand renewables connect to the grid, how these connections impact grid operations, and implications of a high penetration of renewables for the grid in the future.



ATTACHMENT A

Kentucky State Board on Electric Generation and Transmission Siting Sebree Solar II, LLC – Case No. 2022-00131

Kentucky State Board on Electric Generation and Transmission Siting Sebree Solar II, LLC – Case No. 2022-00131

Developed for Wells Engineering and the Kentucky Public Service Commission- State Board on Electric Generation and Transmission Siting

By Cloverlake Consulting, W. Thomas Chaney, President

July 31, 2023



Table of Contents

Report Section	Page
• Introduction.....	1
• Siting Project Description.....	2
• Compatibility With Scenic Surroundings.....	4
• Property Value Impacts.....	6
• Anticipated Noise Levels at Property Boundary.....	7
• Effect on Road, Railways and Fugitive Dust.....	8
• Hiring a Consultant.....	9
• Mitigation Measures.....	10
• Additional Mitigation Measures.....	12
• Summary of the Adequacy of the Applicant’s Site Assessment Report.....	13
• References.....	14
• Pictures of Proposed Site Entrances.....	15
• Exhibit 1A.....	16
• Exhibits 1B.....	17
• Gallery of Photographs from the Site Visit.....	18
• Resume of W. Thomas Chaney.....	30

On Behalf of Wells Engineering, Florence, Kentucky For Sebree Solar II, LLC Project-Kentucky State Siting Board on Electric Generation and Transmission Case No: 2022-00131.

Page 1

1.0 Introduction

The Kentucky Public Service Commission, State Siting Board requires that applicants for a certificate for Solar Facilities file an application which details the current state of the affected properties to be used for the facilities. It also requires an assessment of the impact on the properties regarding the natural and human environment. This report assesses the adequacy of the assessment of the natural environment including noise, traffic, dust, historic, archeologic resources, and natural resources including endangered plant and animal species groundwater and surface water.

At its conclusion this adequacy report shows that the application submitted by the applicant, Sebree Solar II is fully in compliance with the intent of the Kentucky Revised Statutes.

A. Siting Project Description

As proposed by Sebree Solar II, LLC (Applicant), the Sebree Solar II Project (Project) will be capable of generating 150-megawatt alternating current (MW AC). Generated power will pass through the project area of the Sebree Solar Project, previously submitted under separate cover to the Kentucky State Siting Board (KYSB) under case number 2021-00072. The power generated by the Project will provide clean, renewable electricity, and will interconnect through an approximately 4.85-mile transmission line, included as part of the Sebree Solar Project, with the transmission system owned by the Big Rivers Electric Corporation at the 161-kilovolt (kV) Reid Substation. Reid Substation is located east of Pennyrite Parkway (Interstate 69) in Webster County, Kentucky. The Sebree II Project is in Henderson County, Kentucky, approximately six (6) miles south of the City of Henderson, directly west of the Town of Robards, west of U.S. Highway 41 (“US-41”), north of State Road 56 (“HWY-56”), and east of US-41A. The total acreage of the parcels included in the Sebree II Project boundary is approximately 1,460 acres (Project Area). More specifically, the final Project design footprint of the Project Facilities (i.e., fenced-in array areas with solar panels and access roads) will be constructed within a 1,000-acre site contained within the larger Project Area. Collection line easements connecting the Project with the collector substation are to be sited on an additional, separate eleven (11) parcels that total approximately 970 acres.

The Project Area has historically been used for agricultural and forestry purposes and the Project parcels are predominately bordered by agricultural farmland and scattered rural homesteads.

Photovoltaic (PV) solar panels will be mounted on racking, which will fix the solar panels to the ground. Additional infrastructure for the Project will include central electric inverters and transformers,

underground electrical collection systems (distribution equipment), solar meteorological stations, and SCADA hardware. A control house for protective relay panels and site controllers will also be constructed. Permanent private gravel and/or earthen access roads with gated ingress/egress points and security fencing will be constructed to access and maintain the facilities. An approximately seven (7) foot security fence with one (1) foot of barbed wire will be constructed around the Project's facilities in compliance with the National Electrical Safety Code (NESC). Barbed wire will be excluded from portions of the security fence in or along any boundary adjoining residential properties as described in Article XXX, Section 30.02.D of the Henderson County Zoning Ordinance. Access control strategy will also include appropriate signage to warn potential trespassers. The Project will ensure that all site entrances and boundaries have adequate signage, particularly in locations visible to the public, residents, and business owners. Where there are potential visual impacts created by the Project, such as areas near adjacent, nonparticipating residences, a naturalized vegetative screening plan will be implemented to minimize these impacts, where practicable. This will also reduce the effects of any noise generated by equipment (primarily inverters) associated with the Project. The proposed Project will follow the Henderson County Zoning Ordinance's setback requirements as a Level 3 Solar Energy Facility (Level 3 SES), which includes maintaining 25-foot setbacks from perimeter property lines of the Project Area and at least 100-foot setbacks from any residential structures. Henderson County solar setbacks are not required for interior property lines if the project spans multiple contiguous properties.

B. Compliance Summary:

1. A detailed description of the surrounding land uses is identified in the Property Value Impact Report dated March 14, 2023, conducted by Cohn Reznick (Exhibit 1 of the Site Assessment Report). As described in this report, surrounding land uses are predominately comprised of farmland and few residential rural homesteads. The Property Value Impact Report concludes on Page 135 that "...no consistent negative impact has occurred to adjacent property values that could be attributed to proximity to the adjacent solar farm, with regard to unit sale prices or other influential market indicators."
2. Exhibit 2 of the Site Assessment Report contains the legal descriptions of the Project's participating parcels.
3. A preliminary layout of the proposed Project is included in Exhibit 3 of the Site Assessment Report and Attachments 1A and 1B of this Report, which details the proposed access locations to the site. A seven (7) foot-tall security fence will be constructed around the Project's Facilities and will include gated access to the site. Appropriate signage, including "High Voltage Keep Out" or equivalent warning signs, will also be placed at all gates, entrances, and approximately every 100 to 200 feet along the perimeter of the Project's facilities.

4. The preliminary layout of the Project (Exhibit 3 of the Site Assessment Report) details the location of proposed facility arrays and other related infrastructure. Note that the collector substation where the underground collection lines feed into (shown on page C1.06, C2.08, and C2.12 in Exhibit 3 of the Site Assessment Report) and the approximately 4.85-mile transmission line that connects the collector substation to the point of interconnection (POI) at the Reid EHV Substation were previously submitted and permitted under Sebree Solar Project (case number 2021-00072). The Sebree II Project does not impact the previously permitted transmission line and POI and as such, the transmission line and the POI are not shown in Exhibit 3.

5 Exhibit 3 also provides the preliminary layout of the proposed Project access ways and internal access roads. Use of accessways and internal roads are discussed in the Traffic and 6 Dust Study (Exhibit 6).

6. The existing 161-kV Reid EHV Substation, owned by the Big Rivers Electric Corporation, serves as the POI for both the Sebree Solar Project and the Sebree II Project. This substation is located east of Pennyriple Parkway (Interstate 69) in Webster County, southeast of the collector substation where the Project underground collection lines feed into (see page C2.08 and C2.12 in Exhibit 3). As stated under #4, the collector substation (Sebree Solar scope), transmission line, and POI were included and approved as part of the previously submitted Sebree Solar Project (case number 2021-00072). It is not anticipated that additional external utility services or support will be required during typical plant operation.

7. Applicable setback requirements are discussed in the Verified Application for Sebree Solar II, LLC (Application, Volume 1, Tab 4) and Section 2.0 of the Site Assessment Report. The Project will comply with the setback requirements set forth in the Henderson County Zoning Ordinance.

8. A Noise Impact Assessment, conducted by DNV Energy Systems (DNV) and dated April 13, 2023, is included in Exhibit 4 and details the noise levels expected to be produced by the construction and operation of the Project. This report indicates that maximum sound pressure levels at nearby receptors are expected to be less than 86.6 A-weighted decibels (dBA) during Project construction and 32.3 dBA to 51.1 dBA during Project operations. Noise levels during construction are anticipated to be similar in magnitude with other sources that may be active in rural agricultural environments, such as farm machinery. Modeled levels during operation are similar to a quiet rural environment. Noise levels calculated include the impact of an additional Sebree II transformer at the shared collector substation, alongside the previously permitted Sebree Solar transformers.

9. Exhibit 6 of the Site Assessment Report is a Traffic and Dust Study conducted by PRIME AE and dated April 13, 2023. This study concluded that the local roadway system has adequate excess capacity to continue to perform at a very high level of service despite predicted temporary increases in traffic during the construction phase of the Project. Furthermore, the report indicated that there will be no significant increase in traffic during the operation phase of the Project, and that while land disturbing activities may temporarily contribute to airborne materials, impacts can be reduced through best

management practices such as revegetation, application of water, and covering of spoil piles. Lastly, the Project is not expected to have any impact on nearby railways.

10. A Phase I ESA was completed in October 2022 for the remainder of the Project Area which identified one (1) Recognized Environmental Condition (REC) in connection with oil and gas infrastructure. In March 2023, a Phase I was conducted for additional land added to the Project and identified one (1) additional REC. The RECs identified in both the October 2022 and March 2023 reports are connected to the oil and gas infrastructure onsite. Oil and gas infrastructure will be avoided as part of development activities. A 30-foot setback has been applied to oil and gas infrastructure identified in the Project Area. No further investigation is warranted at this time. See Exhibit 7 for the complete Phase I ESA reports from October 2022 and March 2023. The Phase I ESA report will be updated prior to the commencement of construction activities.

11. Applicant contracted ECT to prepare a Decommissioning Plan for Project. The plan was prepared to document Applicant's intent to decommission the Project and to meet the requirements of subsection 30.02.G of the Henderson County Zoning Ordinance. The Henderson County Zoning Ordinance requires that a decommissioning plan be submitted that includes: (1) the defined conditions upon which the decommissioning will be initiated; (2) removal of all non-utility-owned equipment, conduit structures, fencing, roads, and foundations to a depth of three (3) feet; (3) restoration of the property to a substantially similar physical condition that existed immediately prior to construction; (4) the time frame for completion of decommissioning activities; (5) the party currently responsible for decommissioning, and; (6) Plans for updating the decommissioning plan. See Exhibit 8 of the Site Assessment Report for the complete proposed decommissioning procedures, timelines, and estimated costs.

2.0. Compatibility With Scenic Surroundings

The data contained in the Site Assessment Report for the Sebree Solar II project regarding Scenic Surroundings is in compliance with the intent of KRS 278.708.

REQUIREMENT: per KRS 278.708 (3)(b); An evaluation of the compatibility of the facility with scenic surroundings.

COMPLIANCE: Compatibility with the surrounding land uses is discussed in the Property Value Impact Study (Exhibit 1 of the Site Assessment Report), which determined on Page 135 that "...no consistent negative impact has occurred to adjacent property values that could be attributed to proximity to the adjacent solar farm, with regard to unit sale prices or other influential market indicators." The Project is located within flat and occasionally elevated farmlands, with Project equipment base elevations ranging from approximately 400 feet to 480 feet above mean sea level, as described in Section 4.0 of Exhibit 4. Additionally, solar panel heights will not exceed 25 feet from the highest natural grade below each solar

panel, as required by the Henderson County Ordinance. Components of the proposed Project, including inverters, solar panels, and additional ancillary solar equipment will be set back at least 25 feet from perimeter property lines and at least 100 feet from any residential structure or other occupied building, as required by Section 30.02.C. of the Henderson County Zoning Ordinance. A proposed vegetative buffer, approximately 20,127 feet in total length, will be planted in areas adjacent to non-participating residential properties around the Project boundary where one does not already exist. Vegetative screening will be planted in accordance with regulations detailed in Section 30.02.D of the Henderson County Zoning Ordinance and will include a naturalized mix of trees and shrubs suitable for the specific site conditions. As required in the Henderson County Zoning Ordinance, vegetative screening combined with seven (7) foot tall fencing will provide “reasonable screening to reduce the view of the SES from residential dwelling units on adjacent lots (including those lots located across a public right of way).” The proposed vegetative screening will provide an attractive buffer to help draw the viewer’s attention, effectively mitigating any potentially negative visual impacts from the Project. Additionally, Applicant will leave existing vegetation between solar equipment and neighboring residences in place, to the extent practicable, to help screen the Project and reduce visual impact. The preliminary site plan (Exhibit 3) shows the locations planned for the vegetative buffer and Exhibit 5 depicts a visual representation, using visual simulations conducted by Saratoga Associates, of the potential vegetative screening throughout the Project Area at one (1) and five (5) year’s growth. Species to be utilized for the vegetative buffer will include non-invasive trees and shrubs suitable to the site conditions. A mixture of evergreen and deciduous species may be utilized to provide visual interest across all seasons. Utilizing a variety of species is also beneficial to minimize the risk of pests and disease. Preference will be given to commercially available cultivar species that are native to the state of Kentucky and may include a mixture of the following species detailed in Table 1.

Table 1. Potential Evergreen and Deciduous Species Utilized by the Proposed Project

<u>Type</u>	<u>Species</u>	<u>Scientific Name</u>
Coniferous Trees and Shrubs	White Pine	<i>Pinus strobus</i>
	Virginia Pine	<i>Pinus virginiana</i>
	Red Cedar	<i>Juniperus virginiana</i>
	Common Juniper*	<i>Juniperus communis</i>
Broadleaf Small Trees and Shrubs	Serviceberry	<i>Amelanchier</i> spp.
	Dogwood	<i>Cornus</i> spp
	Winterberry	<i>Ilex</i> spp.

<u>Type</u>	<u>Species</u>	<u>Scientific Name</u>
	Chokecherry	Prunus virginiana
	Ninebark	Physocarpus opulifolius
	Wumac	Rhus spp. Viburnum Viburnum spp.

*an upright growing habitat cultivar

3.0 Property Value Impacts

The data and conclusions contained in the Site Assessment Report for the Sebree Solar II project regarding Property Value Impacts is in compliance with the intent of KRS 278.708.

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

COMPLIANCE:

A detailed description of the surrounding land uses is identified in the Property Value Impact Study dated March 14, 2023, conducted by Cohn Reznick, and is attached as Exhibit 1 to the Site Assessment Report. The Property Value Impact Study examines property values adjacent to solar uses for eleven existing solar facilities in Minnesota, Indiana, Georgia, Florida, North Carolina, Virginia, and Michigan. It then provides site specific analysis focused on the Sebree Solar II Project and determines whether it will result in any significant measurable and consistent impact on adjacent property values in Henderson County, Kentucky. In summary, the Property Value Impact Study determined that the proposed Project is considered a “locally compatible use” and it is not anticipated to negatively impact property values in and around it. The Property Value Impact Study also reviewed published studies that analyzed the impact of solar farms on adjacent property values. On page 134, the report states that “These studies found little to no measurable and consistent difference between the Test Areas Sales and the Control Areas Sales attributed to the solar farms.” Furthermore, on page 134 and 135, the report states “The conclusions support that there is no negative impact for improved residential homes adjacent to solar, nor agricultural acreage.” And that “no consistent negative impact has occurred to

adjacent property values that could be attributed to proximity to the adjacent solar farm, with regard to unit sale prices or other influential market indicators”.

4.0 Anticipated Noise Levels at Property Boundary

The data and conclusions contained in the Site Assessment Report for the Sebree Solar II project regarding Anticipated Noise Levels at Property Boundary is in compliance with the intent of KRS 278.708.

REQUIREMENT: Per KRS 278.708 (3)(d); Evaluation of anticipated peak and average noise levels associated with the facility’s construction and operation at the property boundary.

COMPLIANCE: A Noise Impact Assessment was conducted by DNV for the Project and is included as Exhibit 4. The Noise Impact Assessment evaluated potential noise impacts resulting from both the construction and operation of the Project. During Project development, construction is anticipated to occur intermittently over the course of eighteen months at different locations throughout the Project site. Noise-producing construction activities include pile driving for solar array panel racking as well as demolition and site preparation activities involving grading. Both the first phase (Sebree Solar Project) and the second phase (Project) are considered in the assessment of operational sound based on the assumption that both phases will be in operation concurrently after the second phase is constructed. The Project layout consists of a total of 51 inverters for this second phase and 84 inverters associated with the first phase Sebree Solar Project. The Project connects to the same substation as the Sebree Solar Project. Three step-up transformers are located within the substation, one of which is associated with the Project. Noise levels calculated include the impact of all three transformers at the shared collector substation and the combined 135 inverters on receptors within 1-mile of the Project. A summary of the Noise Impact Assessment results is located in Sections 5.0 and 6.0 of the Noise Impact Assessment (Exhibit 4). The Noise Impact Assessment determined that maximum sound pressure levels at nearby receptors are expected to be less than 86.6 dBA during Project construction and range from 32.3 dBA to 51.1 dBA during Project operations. These results were adjusted with an A-weighting filter, which was “applied to closely approximate the human ear’s response to sound” as dBA, which is commonly used when assessing environmental and industrial sounds. A detailed discussion of noise impacts during construction, included in Section 5.0 of Exhibit 4, indicates that “the closest non-participating receptor was located at a distance of 131 feet from the Project construction activities. As a result, sound pressure levels at nearby receptors are expected to be less than 86.6 dBA in the A-weighting scale...at all non-participating residences. Additionally, the report states “It is important to note that this analysis assumes the construction equipment associated with each phase is operating simultaneously at the specified distance. This assumption is conservative as the equipment will likely be more spread out around the site and not likely to be operating at the same time. Other noise

attenuation effects such as atmospheric absorption, ground effect, reflection and shielding by topographical features or objects were not considered in the analysis.” The Noise Impact Assessment further states that “Typical farming equipment such as a tractor can emit sound levels at approximately 80 dBA at 50 feet. The calculated construction sound pressure levels are expected to be similar or lower than typical farming equipment at all receptors. Considering farming activity occurs during the day when construction is scheduled, sound emitted by construction equipment should be familiar to what the community currently experiences in the existing sound environment. Due to the conservative nature of the assessment, it is expected that sound levels may be less than the referenced tractor sound level at 50 feet for most of the day during of a given day of construction.” A detailed discussion of noise impacts during operation, included in Section 6.0 of Exhibit 4, indicates that “the highest modelled results throughout the Project Area for A-weighted sound pressure levels ...are 51.1 dBA at receptor 310 (participant). The A-weighted (dBA) sound level can be considered similar to noise levels in a quiet rural environment.” Further, the report states that, “additional attenuation from foliage was not considered in this assessment, implying that lower sound levels are expected in areas where there is foliage present in the line of sight between any noise generators and a sound receptor. Similarly, because the model assumes every receptor is downwind of every sound source at all times, lower sound levels are expected at times when a receptor is upwind of any sound source.” The Project anticipates that all construction and maintenance activities will generally occur from 6:00 AM to 6:00 PM. There may be some occasions during commissioning when activities will occur later into the evening, but this would be a rare exception. The duration of the construction period is anticipated to last for eighteen (18) months.

5.0 Effect on Road, Railways, and Fugitive Dust

The data and conclusions contained in the Site Assessment Report for the Sebree Solar II project regarding the Effect on Road, Railway and Fugitive Dust is in compliance with the intent of KRS 278.708.

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

COMPLIANCE:

A Traffic and Dust Study was conducted by PRIME AE for the Project and is included as Exhibit 6. This study assesses the Project’s potential impacts to road and rail traffic, as well as anticipated levels of fugitive dust created from construction and operational traffic. The Traffic and Dust Study determined that “even though the traffic in the Project vicinity is predicted to increase during the construction phase of the Project, there is so much excess capacity that this roadway system will continue to perform

at a very high level of service. This includes morning and evening peaks as construction workers enter and exit the Project site and periodic delivery of construction materials and equipment.” A detailed discussion of the effect of Project construction and operation on roadway traffic is included in Section 2.0 of Exhibit 6. Furthermore, Sebree Solar II, LLC will develop a traffic management plan, implement traffic guidance, and install appropriate signage to ensure driver safety during construction. During Project operations “there will be no significant increase in traffic and there will be very little, if any, impact to the existing road system.” Section 3.0 of Exhibit 6 describes anticipated Fugitive Dust Impacts associated with the proposed Project. During Project construction, “land disturbing activities associated with the proposed Project may temporarily contribute to airborne materials. To reduce wind erosion of disturbed areas, appropriate revegetation measures, application of water, or covering of spoil piles may occur. In addition, any openbodied truck transporting dirt will be covered when the vehicle is in motion. The size of the Project site, distance to nearby structures and roadways, combined with vegetative buffers along property boundaries and fencerows will aid in managing off sites dust impacts. Internal roads will be compacted gravel, which may result in an increase of airborne dust particles during dry conditions and when internal road traffic is heavy. During construction activities, water may be applied to the internal road system to reduce dust generation.”

Due to the nature of this Project including the construction, types of equipment to be installed, and planned operation, it is anticipated the impacts to the existing sound level environment will be minimal.

No rail lines are present within the Project Area. One (1) CSX Transportation (CSX) rail line is located within the previously submitted Sebree Solar Project Area, approximately one (1)-mile east of the Sebree Solar II Project Area; however, the proposed Project will not be using railways for any construction or operation activities. Section 4.0 of Exhibit 6 describes the anticipated impacts on existing railways within the Project Area. In summary, “Railway impacts to construction traffic are anticipated to be very minimal with only sporadic delays when the railway is active. Likewise, there will be no railway impact during the operational phase of this solar site. There is no anticipated damages to existing railroad infrastructure.”

The data and conclusions contained in the Site Assessment Report for the Sebree Solar Project for Traffic, Railways, Noise and Fugitive Dust meets the intent of KRS 278.216.

5.1 Hiring of a Consultant

The board shall have the authority to hire a consultant to review the site assessment report and provide recommendations concerning the adequacy of the report and proposed mitigation measures. The board may direct the consultant to prepare a separate site assessment report. Any expenses or fees incurred by the board's hiring of a consultant shall be borne by the applicant.

The board has hired Wells Engineering and Cloverlake Consulting Services to review the adequacy of the Site Assessment Report.

6.0 Mitigation Measures

REQUIREMENT: Per KRS 278.708(4); The site assessment report shall also suggest any mitigating measures to be implemented by the applicant to minimize or avoid adverse effects identified in the site assessment report; and per KRS 278.708(6); The applicant shall be given the opportunity to present evidence to the board regarding any mitigation measures. As a condition of approval for an application to obtain a construction certificate, the board may require the implementation of any mitigation measures that the board deems appropriate. COMPLIANCE: Applicant is anticipating implementing the following mitigation measures to minimize or avoid adverse effects identified within the Site Assessment Report:

1. Visual buffers will be used to mitigate viewshed impacts to sensitive receptors, primarily residences, adjacent to the Project. Anticipated planting areas, a preliminary site layout and preliminary visual representation of the proposed vegetative screening are included in Exhibit 3. Exhibit 5 depicts a visual representation, using visual simulations conducted by Saratoga Associates, of the potential vegetative screening throughout the Project Area at one (1) and five (5) year's growth. Vegetative screenings will be planted primarily in areas where residential parcels adjacent to the Project do not have existing vegetation. Additionally, Applicant will leave existing vegetation between solar equipment and neighboring residences in place, to the extent practicable, to help screen the Project and reduce visual impact.
2. Within the Project Area, one (1) to two (2) acres of native pollinator-friendly species will be cultivated.
3. Components of the proposed Project, including inverters, solar panels, and additional ancillary solar equipment, will be set back at least 25 feet from perimeter property lines and at least 100 feet from any residential structure as required by Section 30.02.C. of the Henderson County Zoning Ordinance.
4. Applicant has committed to the use of low-sulfur diesel trucks and equipment to the extent practicable during construction in addition to downlighting in locations where lighting is required.
5. During Project operations, where lighting installation is required, the Applicant has committed to using downcast lighting.
6. Applicant will notify residents and businesses in the vicinity of the proposed Project about the start of construction, potential construction noises, and mitigation plans at least a month prior to commencing Project construction. These notifications will include contact information for receiving complaints.

7. Prior to and during construction, Erosion and Sediment Control (E&S) devices and Best Management Practices (BMPs), such as silt fences/silt socks, sediment basins, sediment traps, and/or buffer zones, will be deployed around sensitive resources.

8. Post-construction, disturbed areas will be seeded with a native and/or non-invasive perennial grass and herbaceous seed mix. E&S devices will be inspected and maintained until vegetation in disturbed areas has been returned to pre-construction conditions or the Project site is stable.

9. Environmental permitting pertaining to state and federally regulated wetlands and watercourses, as well as stormwater discharges, will be addressed as applicable based on proposed impacts. The following permits and other applications will be obtained from the appropriate regulatory agencies, as applicable, as the proposed Project prepares for construction:

a) Wetland delineations have been conducted for all proposed Project parcels. Applicant will be submitting an Approved Jurisdictional Determination to the U.S. Army Corps of Engineers (USACE) in mid-2023. If the Project is expected to impact jurisdictional features, including regulated wetland and watercourses, a Clean Water Act (CWA) Section 404 permit will be required from the USACE. Additionally, depending on anticipated impacts, a CWA Section 401 Water Quality Certification (WQC) may also be required from the Kentucky Energy and Environment Cabinet (EEC) – Division of Water (DOW). Applicant has worked to minimize impacts to regulated wetlands and watercourses to the extent possible; however, unavoidable impacts are expected and will be permitted as discussed above.

b) A General Permit for Stormwater Discharges Associated with Construction Activities will be obtained from the Kentucky Department of Environmental Protection (DEP), which is required for projects that disturb one or more acres of land.

c) Prior to construction, Applicant will develop a Ground Water Protection Plan compliant with the Kentucky EEC's guidance to identify activities on-site that have the potential to pollute groundwater and BMPs that will be employed during Project development to protect groundwater resources.

d) Where possible, tree clearing activities will be limited seasonally to avoid potential impacts to Indiana and Northern long-eared bat habitat. Additionally, Applicant has been coordinating with the applicable state and federal agencies.

10. The Project will meet all requirements under the Henderson County Zoning Ordinance regarding Decommissioning, including posting of a Surety Bond or other form of Security, submittal of a decommissioning plan, and restoration of the property to substantially similar physical condition that existed immediately prior to construction. The Project Decommissioning Plan is included as Exhibit 8.

11. Access control strategy will also include appropriate signage to warn potential trespassers. The Project will ensure that all site entrances and boundaries have adequate signage, particularly in locations visible to the public, residents, and business owners. Access control will be provided per the North American Electric Reliability Corporation (NERC), National Fire Protection Association (NFPA), and Occupational Safety and Health Administration (OSHA) guidelines.

12. A Traffic Management Plan will be developed to minimize impacts of any traffic increases and keep traffic safe. The Project will use appropriate signage as needed to aid construction traffic. All necessary permits will be obtained prior to bringing in heavy loads. The traffic management plan will also include protocols to ensure the local fire departments have immediate access to the roadway when needed.

The applicant has done an adequate job of addressing some of the concerns brought up by the analysis of the adequacy of this Site Assessment Report. Among these are Environmental Permitting, Wetland Delineations, Stormwater, Groundwater, Zoning and Endangered Species. Although this set of mitigation strategies does not include a specific dust control plan for the site, nor does it address the treatment and protection of archeologic and historic resources including Cemeteries.

6.1 Below are the Additional Mitigation Measures Recommended by the Consultant (Cloverlake Consultants)

Fugitive Dust and PM10

- The applicant should submit in writing the specific plan to control fugitive dust and PM 10 during the construction process ten days prior to commencing construction.

Protection of Archeologic and Historic Resources including Cemeteries

- The applicant should develop a plan regarding the protection of historic and archeologic resources and cemeteries no less than 30 days prior to the beginning of construction activities. This is not required by this regulatory process but would be under other requirements including those administered by the Kentucky State Historic Preservation Office.

7.0 Summary of the Adequacy of the Applicants Site Assessment Report

Based on a review of The Sebree Solar II Project Site Assessment Report, as well as the Applicant’s responses to the first set of Inquiries from the Staff, by W. Thomas Chaney of Cloverlake Consulting, all the sections of the report are in compliance with the intent of KRS 278.708. The consultant, however, urges the applicant to consider the recommendations in section 6.1 above.

REFERENCES

All the information for this Adequacy Assessment was extracted from the Applicant’s Site Assessment Report, Sebree Solar II Project and a field analysis performed on May 20 and 21, 2023.,

Pictures of Proposed Site Entrances






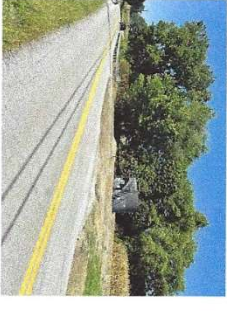
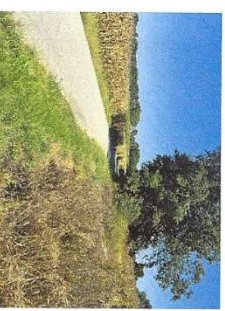





<p>SITE ENTRANCE # 101 Eastbound W N Royster Road</p> 	<p>SITE ENTRANCE #102 Northbound W N Royster Road</p> 	<p>SITE ENTRANCE # 103 Northbound W N Royster Road</p> 
<p>SITE ENTRANCES # 101 and 102 Northbound W N Royster Road</p> 	<p>SITE ENTRANCE # 103 Northbound W N Royster Road</p> 	<p>SITE ENTRANCE # 105 Westbound KY 416</p> 
<p>SITE ENTRANCES # 101 and 102 Northbound W N Royster Road</p> 	<p>SITE ENTRANCE # 103 Westbound W N Royster Road</p> 	<p>SITE ENTRANCE # 105 Northbound KY 416</p> 
<p>SITE ENTRANCES # 101 and 102 Southbound W N Royster Road</p> 	<p>SITE ENTRANCE # 103 Westbound W N Royster Road</p> 	<p>SITE ENTRANCE # 105 Eastbound KY 416</p> 

EXHIBIT 2

DISCRESSION OR REVISION	

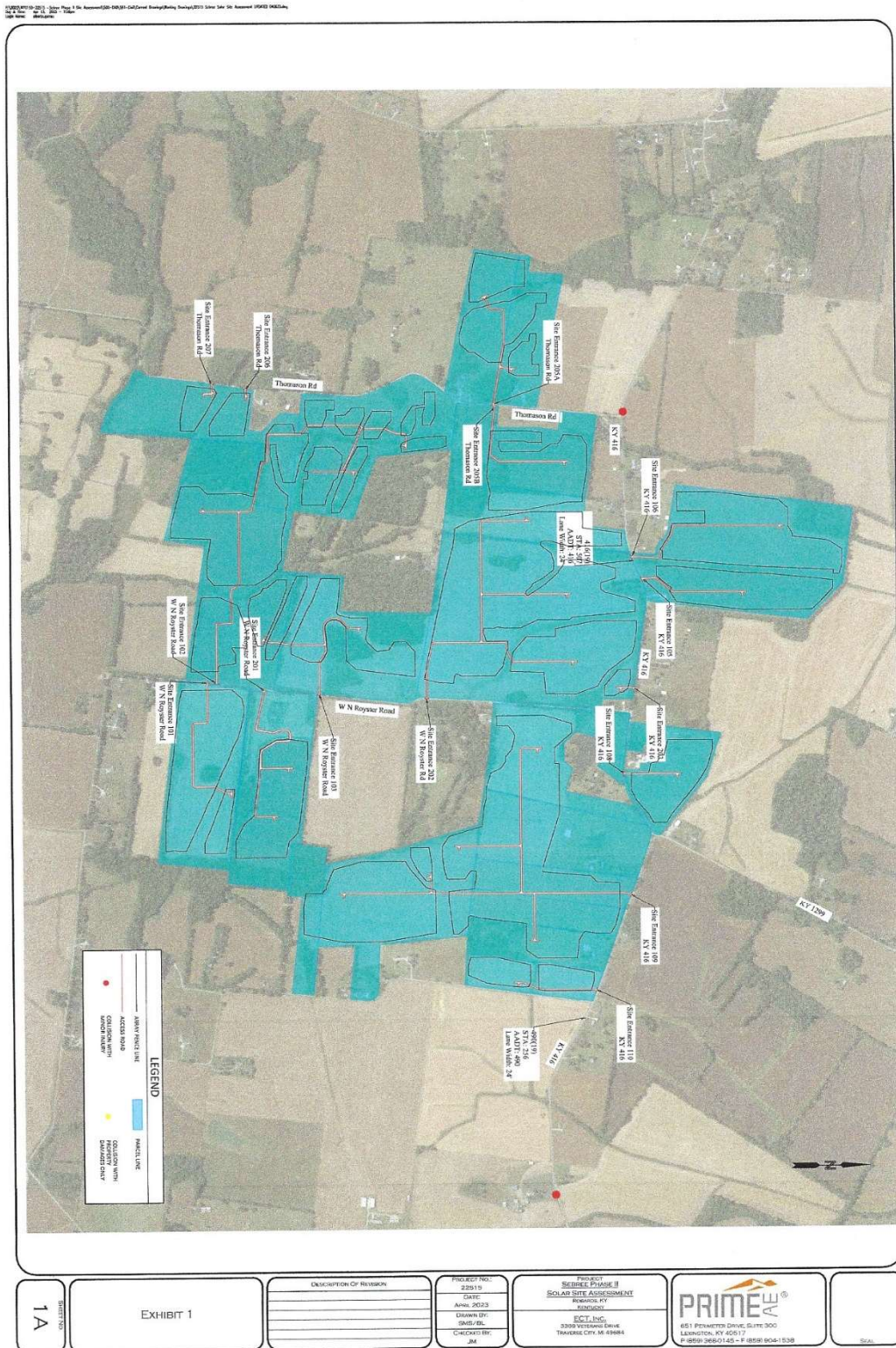
PROJECT NO:	202115
DATE:	APRIL 2023
DRAWN BY:	SAIRY, RL
CHECKED BY:	JM


PROJECT:	SEBREE PHASE II SOLAR SITE ASSESSMENT
LOCATION:	KY
CLIENT:	ECT, INC.
3395 VETERANS DRIVE	
TRAYLOR, KY 40384	

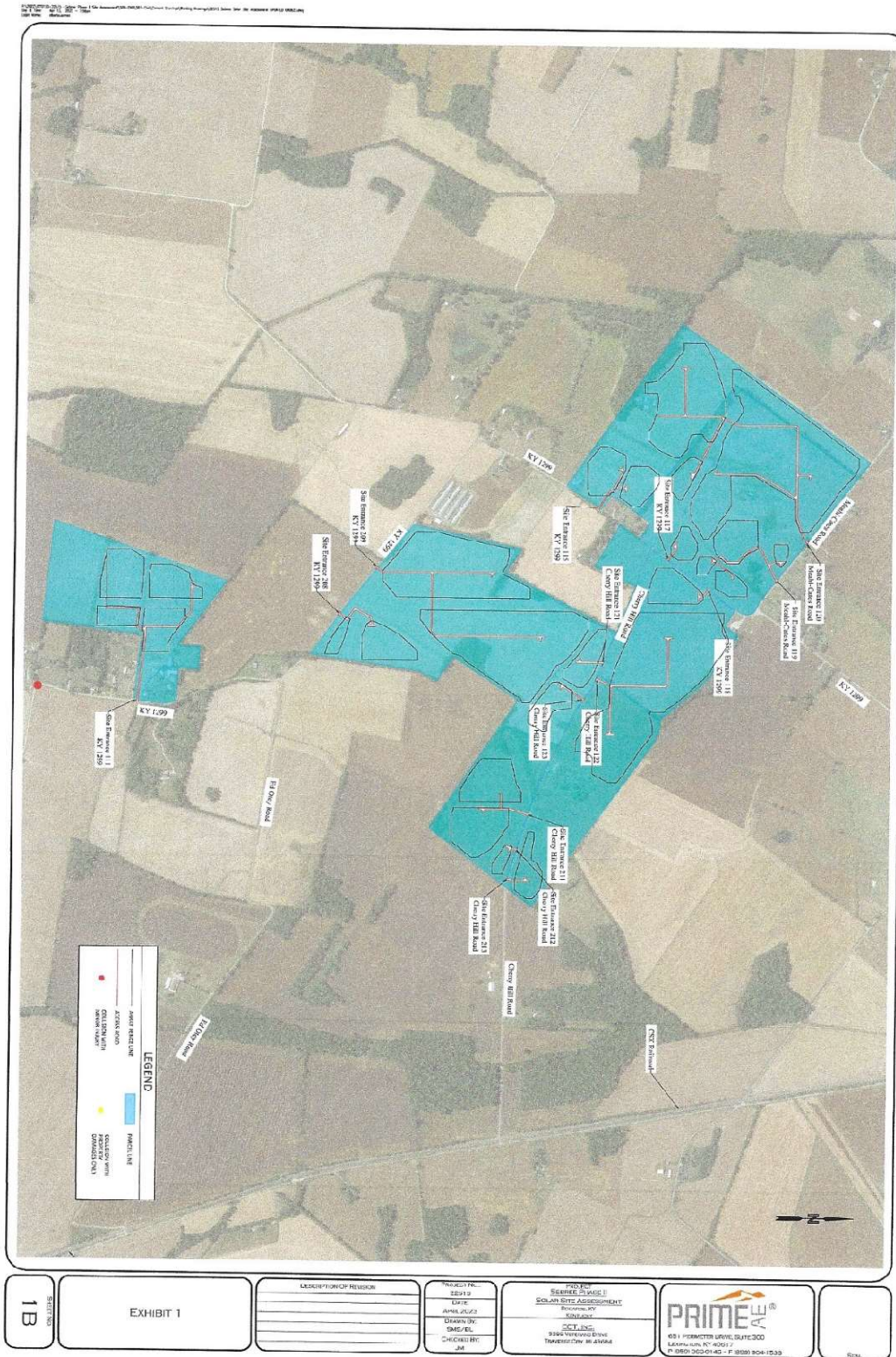
PRIMEAE

651 PRIMEAER DRIVE, SUITE 300
LEITCHFIELD, KY 40217
P (605) 248-0145 • F (605) 204-1538

2A



1A	EXHIBIT 1	DESCRIPTION OF REVISION	PROJECT NO. 22015	PROJECT SEBREE PHASE II SOLAR SITE ASSIGNMENT REVISION: 07 REVISION: ECT, INC. 2300 VETERANS DRIVE THUNDER CITY, MO 63084	 451 PINEHURST DRIVE, SUITE 300 LEXINGTON, KY 40517 P 606-266-0143 • F 606-954-1538
			DATE April, 2023		
			CHECKED BY: JK		Scale



Gallery of Photographs Taken During The Site Visit on May 20 and 21, 2023























Resume W. Thomas Chaney



W. THOMAS (TOM) CHANEY

PRESIDENT CLOVERLAKE CONSULTING

YEARS OF EXPERIENCE

50

EDUCATION

- MBA, Finance and Management Point Park University, 2011
- M.A., Environmental Planning, Eastern Kentucky University, 1973
- B.A., Physical Geography and Geology, Eastern Kentucky University, 1972

AREAS OF EXPERTISE

- Strategic training and mentoring of employees
- Management and direction of multidiscipline natural resource management consulting teams
- Environmental Assessment of Energy Facilities
- Harvard Leadership Development Training
- Advanced Project Management Training

CERTIFICATIONS

- Certified Mediator, 2004
- Certified Kepner-Tregoe Rational Process Program Leader, 2003
- Harvard Leadership Development
- Advanced Project Management

HONORS

- Cinergy "Above and Beyond Award" for Diversity, CG&E/Cinergy, Duke Energy
- Diversity Champion and "Wolf" Award recipient for top individual performance, CG&E/Cinergy, Duke Energy

EXPERIENCE SUMMARY

Mr. Chaney is the President of Cloverlake Consulting Services and directs the work of expert natural resource management teams of engineers and scientists. He has a distinguished background in utility management, organizational development and consultant service to utility companies for environmental and planning work. He has done career management service for large utilities including Cinergy, Cincinnati Gas & Electric and Duke, and has consulting experience with Power Engineers, BHE Environmental, GAI Consultants, Booz-Allen Hamilton, Woolpert Consultants, and Dames and Moore.

Mr. Chaney's current practice involves Siting and Environmental Planning for major utility facilities in several states in the Midwest. He has developed testimony and testified in front of state siting agencies.

He also specializes in strategically training and mentoring employees and has grown a prominent Cincinnati multi-discipline environmental engineering and consulting practice. He also provided strategic training and mentoring services for CG&E, Cinergy, and Duke Energy for 25 years and currently provides these services to Master Provisions, a Northern Kentucky food charity... Mr. Chaney developed and presented the Business Case for Diversity to Cinergy executives in 1995, and was responsible for environmental training and education, and high-performance team training and coaching.

He is a certified mediator and holds a license as a Program Leader for Kepner-Tregoe rational process.

Kentucky Public Service Commission-Siting Board Ohio Power Siting Board SITING AND CERTIFICATION

Another specialty is the management of the Ohio Power Siting Board siting/certification process. He is also proficient at managing the Kentucky PSC Siting Board Process. He was involved in the original development of the rules for these processes with the PUCO and the OPSB and served as the implementing Principal contact for CG&E, Cinergy, and Duke from 1984 to 2006. He has been involved in consulting practices since then that specialize in these siting processes including GAI Consultants, BHE consultants, Power Engineers and ERM.

The following projects are a few examples of this work:

- Kentucky Public Service Commission Siting Board

In his position as President of Cloverlake Consulting Services, he has completed the analysis of the adequacy of two solar projects in Kentucky; Madison Solar and Horseshoe Bend Solar. He is currently actively involved in two additional solar projects; McCracken County Solar and Meade County Solar.

- AEP Siting and Permitting Projects, Ohio, Kentucky, Indiana, Virginia and West Virginia

In his position with Power Engineers, he supervised over twenty siting and permitting projects in the above states.

- NIPSCO Permitting In Indiana

Kentucky State Board on Electric Generation and Transmission Siting Sebree Solar II, LLC – Case No. 2022-00131

Mr. Chaney, likewise, was involved in several Transmission Line permitting projects in Indiana for NIPSCO.

- GAI Consultants, Constance-Zimmer Natural Gas Transmission Line, Ohio
Project Manager responsible for the siting, routing and certification of this transmission line. The project required numerous environmental permits and a Certificate of Environmental Compatibility and Public need from the Ohio Power Siting Board (OPSB).

- Dominion East Ohio Gas, Akron-Canton Gas Transmission Line, Ohio
Project manager responsible for siting, certification (OPSB) and permitting.

- Management Consulting, Large Aviation and Environmental Projects
As a management consultant for a private management consulting firm, Mr. Chaney was responsible for numerous large aviation and environmental projects, including the Chicago, O'Hare International Airport Delta Concourse project, the Miami International Airport Runway Environmental Impact Statement (EIS) Concourse project, the Miami International Airport Runway Environmental Impact Statement (EIS) project, and the Greater Pittsburgh International Airport Midfield Terminal Studies project that required noise and land use compatibility studies.

- Regional Planning manager
As a planning manager for the Northern Kentucky Area Development District, Mr. Chaney covered all aspects of regional planning for eight counties in northern Kentucky. He supervised professional and clerical staff dealing with issues on the environment, housing, land use and recreation in compliance with the Older Americans Act (Title III) and the Social Security Act (Titles XIX and XX).

- Senior Environmental Planning Consultant
Mr. Chaney's experience as a Senior Environmental Planner with a private consulting firm required management of numerous land use planning and environmental assessment projects. His duties included accountability to the client.

- Duke Energy, Edwardsport IGCC Start-Up natural Gas Line, Indiana

Project Manager for the routing and permitting of a gas transmission line used to start-up the Edwardsport Indiana IGCC. This project is a clean coal endeavor that utilizes Illinois Basin high sulfur coal.

- Dominion East Ohio Gas Company, Solid Waste natural Gas Siting Study and Application, Ohio
Project Manager for the OPSB application for this complex project, which was rerouted due to the construction of a large municipal landfill.

- GAI Consultants, Rockies Express Line, Ohio
Project Manager for cultural resources projects associated with this gas transmission line.

- CG&E, Gas Storage Site, Kentucky

Kentucky State Board on Electric Generation and Transmission Siting Sebree Solar II, LLC – Case No. 2022-00131

Project Manager responsible for the environmental permitting of this large gas storage site, formerly a depleted gas and oil production field.

- CG&E/Cinergy/Duke Energy Natural Gas Licensing Projects, Multiple States
Reviewed and led the licensing and environmental permitting for all natural gas transmission line projects.

- CG&E Cinergy, Numerous Power Plant, Transmission Line and Gas Line Siting and permitting Projects
In his capacity as Licensing Division Director, Mr. Chaney was involved in more than 100 Transmission Line, Gas Line and Power Plant projects during his tenure with CG&E/Cinergy/Duke.



ATTACHMENT B

Review Appraisal

Of:

CohnReznick

Adjacent Property Value Impact Report

Sebree Solar II Proposed Project, Case No. 2022-00131

Henderson County, Kentucky

Dated March 14, 2023

Date of Review

July 25, 2023

Prepared for:

Mr. Scott H. Campbell, Senior Project Manager

Wells Engineering, PSC

6900 Houston Road, Suite 38

Florence, Kentucky

Prepared by:

E. Clark Toleman, MAI, SRA

333 West Vine Street, Suite 300

Lexington, Kentucky 40507

E. Clark Toleman, MAI, SRPA



Real Estate Appraisal Services

VINE CENTER 333 W. VINE ST., SUITE 300 • LEXINGTON, KENTUCKY 40507
TEL. (859) 253-0314 • FAX (859) 253-0653

July 25, 2023

Mr. Scott H. Campbell
Senior Project Manager
Wells Engineering, PSC
6900 Houston Road, Suite 38
Florence, Kentucky 41042

**Re: *Review Appraisal Report
CohnReznick-Impact Study dated March 14, 2023
Proposed Sebree Solar II Project, Henderson County Kentucky***

Dear Mr. Campbell

Following your request, I have carried out an investigation and review of the CohnReznick Adjacent Property Value Impact Study that estimates the impact in terms of property value to the surrounding properties to the proposed Sebree Solar II Project. The CohenReznick report is part of the application PSC Case No. 2022-00131 for the 1,460 acre 150 MW solar project to The Kentucky State Board on Electric Generation and Transmission Siting. I have reviewed the CohenReznick report as well as the data within in application, and made a physical inspection of the subject parcels that make up the project and surrounding area. There are 42 parcels in the project, properties that have been identified as adjoining the project tracts.

Considering my analysis of the CohenReznick Impact Study I have concluded that the report is credible and representative of the market conditions that would exist should the Sebree II Solar Project be constructed based on the market evidence and interpretation of the data contained in the Impact Study. The report includes a review of published studies on property value impacts associated with solar projects, paired sales analysis in eleven comparable solar projects, and interviews with real estate professionals and real property assessors.

The following is a summary of my technical review of the CohenReznick report and comments on the specific data and analysis contained in the report prepared in compliance with Standard 3 of the Uniform Standards of Professional Practice.

Respectfully submitted,

E. Clark Toleman, MAI, SRA

Project Name: Sebree Solar II Project-PSC No. 2022-00131
Property Location: Henderson County, Kentucky
Date of Impact Study: March 14, 2023
Property Type: Agricultural and Rural Homesites
Land Area: 1,460 Combined acres, 150 MW
Report Option: Narrative Report
Intended Use of Review: Kentucky State Electric Generation and Transmission
Siting Board

Purpose of this Review

The purpose of this review is to determine if the appraisal report is essentially in compliance with: KRS 278.708 and The Uniform Standards of Professional Appraisal Practice (USPAP) as promulgated by the Appraisal Standards Board of The Appraisal Foundation.

Scope of the Review

This review was limited to an analysis of the appraisal report in order to form an opinion as to:

- The completeness of the report;
- The adequacy and relevance of the data presented;
- The reasonableness of any adjustments made by the appraiser to the data;
- The appropriateness of appraisal methods and techniques used; and
- The adequacy and reasonableness of the analysis, opinions and conclusions contained in the appraisal report.

Reviewer: E. Clark Toleman MAI, SRA

Date of Review: July 25, 2023

Purpose of the Impact Study

The Impact Study is in three parts, a review of academic and peer authored property value impact studies, research and analysis of existing solar facilities, and interviews with real estate experts market participants and Assessors. The addenda is a site specific analysis of the properties adjacent to the proposed 150 MW Sebree II Solar Project. The purpose of this impact study under review is to estimate any related change in terms of market value to the adjoining properties due to the proposed solar project in Henderson County Kentucky as of March 14, 2023.

Market Value is defined as:

The most probable price which a property should bring in a competitive and open market under all conditions requisite to a fair sale, the buyer and seller, each acting prudently, knowledgeably and assuming the price is not affected by undue stimulus, Implicit in this definition is the consummation of a sale as of a specified date and the passing of title from seller to buyer under conditions whereby: (1) buyer and seller are typically motivated; (2) both parties are will informed or well advised, and each acting in what he considers his own best interest; (3) a reasonable time is allowed for exposure to open markets; (4) payment is made in terms of cash in U,S, dollars or in terms of financial arrangements comparable thereto; and (5) the price represents the normal consideration for the property sold unaffected by special or creative financing or sales concessions granted by anyone associated with the sale.

Market Value is therefore the actual real dollar value of the subject property would bring at an appraisal date under “normal” conditions with the seller and buyer acting reasonably. The contemporary concept emphasizes cash value. This is necessary in the investigation of “market” sales to equate any non-typical financing terms to conditions that are typical at an appraisal date.

Intend Use of Review Appraisal

This review appraisal is prepared for Wells Engineering on behalf of the Kentucky State Board on Electric Generation and Transmission Siting Board Case No. 2022-00131.

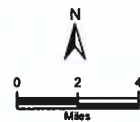
Date of Impact Study Review

This review Appraisal is made as of July 25, 2023 with all economic, statistical and market data correlated to this date. The last inspection of the subject property area was made on this date and all physical characteristics are described relative to this date unless otherwise stated within this report

Location Map



 Project Boundary (± 2,184.77 Ac.)



Historical Topographic Map
1957 Quad Evansville

Sabree II Solar Project
Henderson County, KY

Date: 9/19/2022

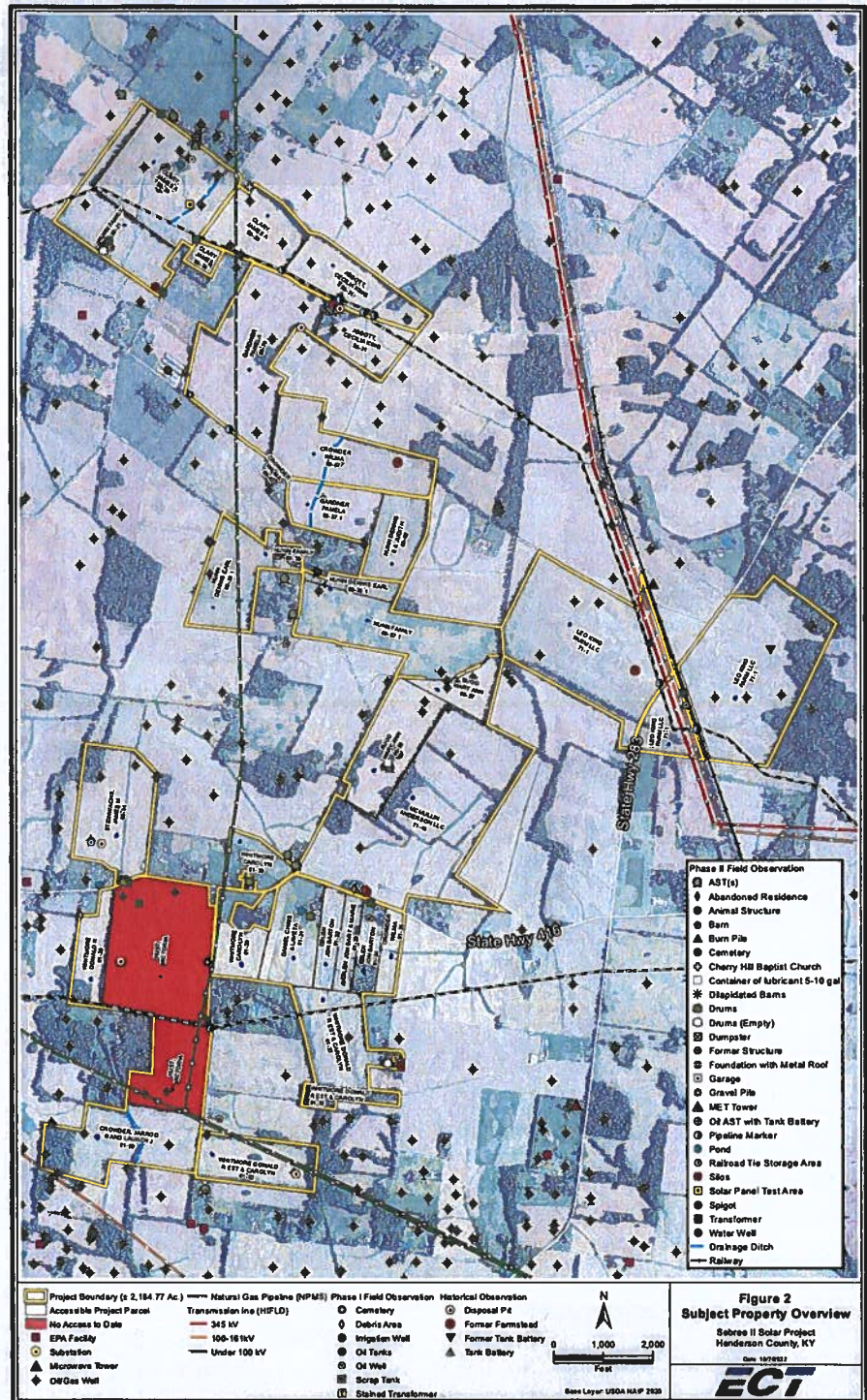
ECT

Base Layer: USGS Topographic Quad Evansville 1957

Proposed Project Area

The subject properties are situated in Henderson County approximately 6 miles south of Henderson Kentucky, and west of Robards with a total area of 1,460 acres in 42 parcels with an actual project foot print of 1,000 acres. The project parent parcels are west of US HW 41 and north of HW 56. The general area is rural in nature being developed as general farms and homesites with level sloping topography. The 2023 Henderson County population is estimated to be 44,056 with a slight decline of 1.0% projected by 2028. The project proposes that all setback distances will be in compliance with the Harrison County zoning ordinance.

Map of Project Properties



Map Of Adjoining Property



KY State Siting Board - Case No. 2022-00131
 Sebree Solar II Project
 Henderson County, Kentucky
 Date: 4/6/2023

Legend

- Residential Structure
- ▲ Point of Interconnection (Not Included in Sebree II Project)
- ★ Robards School
- Project Substation
- Residential Neighborhood per KRS 278.700
- Proposed Project Parcel
- Proposed Project Parcel - Collection Line Easement Only
- 2 Mile Project Radius Boundary
- Interstate
- Highway
- Major Road



Methodology to Indicate Effect on Adjoining Properties

The CohenReznick Impact Study utilizes the Paired Sales Analysis as the basis for an indication of change in value experienced to adjoining properties from solar farm projects in several states. This is a quantitative analysis of paired-sales to identify the effect of any one characteristic in a given market on market price. This analysis is used to estimate what adjustment is indicated for an individual characteristic such as a garage, swimming pool or any number of characteristics that need adjustment for the subject property. This is a standard analysis technique in appraisal practice and is most indicative when there is a large sample size.

The CohenReznick Impact Study applied the paired sales analysis to adjoining properties around eleven solar farms in eight states including Indiana, Georgia, Florida, North Carolina, Virginia, Michigan, Indiana and Minnesota. The survey employs Test area sales that are adjoining a solar farm and Control sales not adjoining solar farm. The survey is done in the surrounding states including 11 solar farms with 1,440 sales analyzed with the result indicating no change to positive impact effect on adjoining property value. The general conclusion would indicate a neutral overall effect on the market value of adjoining properties to solar farms generally and would therefore have a neutral impact on adjoining properties in the proposed Sebree Solar II project.

Conclusion of Solar Farm Impact

The evidence presented in this Impact study including the paired sales analysis is a strong indicator that proximity to the proposed Sebree Solar II Project will have a neutral impact on the adjoining property value when the set back and buffer screening is in place. The proposed solar farm is a passive entity without the recognized nuisance characteristics of noise, traffic, odor, or other typical stigma considered to create a detrimental effect. A review of published research material on this subject is included in this Impact Study which also indicates the neutral effect on the adjoining property to solar farms projects of similar size and neighborhood characteristics as the proposed Sebree II Solar project.

Review Appraiser's Limiting Conditions and Certification

- This review memorandum is based on data and information contained in the appraisal report under review as well as additional information from other sources that may be applicable and have been identified.
 - It is assumed that the data and information contained in the appraisal under review are factual and accurate.
 - The reviewer reserves the right to consider any additional information that may subsequently become available and may revise any opinions and conclusions if such data and information dictate the need for change.
 - Unless otherwise stated, all of the assumptions and limiting conditions contained in the appraisal report under review are also conditions of this report.
 - This appraisal review is specifically not an appraisal. Any opinions expressed by the reviewer are limited by the scope of the analysis identified in this review report.
 - If the yield capitalization methodology (discounted cash flow analysis) was completed by the appraiser using a market-accepted, preformatted lease-by-lease software program: To the extent possible, the inputs have been scanned for reasonableness, however, neither the reliability or accuracy of the inputs nor the expertise or competency of the person working with the software can be verified by the reviewer. Further, no property specific, corroborating diskette has been submitted with this assignment.
 - The review appraiser is not required to give testimony or appear in court, or at public hearings or at any special meeting or hearing with reference to the property appraised or the appraisal report, unless arrangements have been made prior to preparation of this report.
-
- All data provided in the appraisal reviewed is assumed to be accurate and complete and that there has been no omission of data that would affect the reviewer's conclusions.

I certify that, to the best of my knowledge and belief:

- the facts and data reported by the reviewer and used in the review process are true and correct.
- the analyses, opinion and conclusions in this review report are limited only by the assumptions and limiting conditions stated in this review report and are my personal, impartial and unbiased professional analysis, opinions and conclusions.
- I have no present or prospective interest in the property that is the subject of this report and no personal interest with respect to the parties involved.
- I have no bias with respect to the property that is the subject of this report or to the parties involved with this assignment.
- my engagement in this assignment was not contingent upon developing or reporting predetermined results.
- my compensation is not contingent on an action or event resulting from the analyses, opinions or conclusions in this review or from its use.
- my analyses, opinions and conclusions were developed and this review report was prepared in conformity with the Uniform standards of Professional Appraisal Practice

(USPAP) and all federal, state and banking regulations in force and applicable as of the date of this report.

- I have made a personal inspection of the work and subject property under review.
- no one provided significant appraisal, appraisal review or appraisal consulting assistance to the person signing this certification, and I have not provided any prior appraisal service on this property.
- As of the date of this report, E. Clark Toleman, MAI, SRA has completed the continuing education requirements of the Appraisal Institute.
- The use of this report is subject to the requirements of the Appraisal Institute relating to review by its duly authorized representatives.



E. Clark Toleman, MAI, SRA
Kentucky Certified General Appraiser

QUALIFICATIONS OF THE APPRAISER

E. Clark Toleman MAI, SRA

PROFESSIONAL MEMBERSHIPS:

MAI Member of the Appraisal Institute

SRPA MAI No. 7572

SRA General Certification – Kentucky Real Estate Appraisers Board No. 109

Real Estate Broker – State of Kentucky

Member of Lexington Board of Realtors

Member of Kentucky Association of Realtors

Member of National Association of Realtors

EDUCATION: West Australia Institute of Technology, Perth, Australia – Business Studies Major in Real Estate Valuation

Completed all course requirements for the Australian Institute of Valuers, the American Institute of Real Estate Appraisers and Society of Real Estate Appraisers. Appraisal seminars related to Conservation Easements, partial interests and Federal guidelines for Federal Land Acquisition.

Participate in continuing education through seminars and courses by the Appraisal Institute.

EXPERIENCE:

Full time career in all phases of Real Estate. Employed in Property Management, Office of Development, Leasing and Valuation. Real Estate Appraiser in Lexington, Kentucky since 1974. Owner and Manager of Investment Property. Self- employed and owner of E. Clark Toleman Real Estate Appraisal Services.

APPRAISAL CLIENTS:

Financial Institutions:

Bank of Lexington, First Security National Bank, Bank One, Citizens Fidelity Bank in Lexington, First National Bank of Louisville, Fifth Third Bank of Campbell County, PNC Bank, Franklin Bank, MCNB Bank, First Capital Bank, Community Trust Bank, First Southern National Bank. Recent non-bank lender clients include: Realty Investment

Company, Memphis, Tennessee; New York Life, Atlanta, Georgia, Cincinnati Insurance Co.

GOVERNMENT INSTITUTIONS:

Lexington Fayette Urban County Government, Corps of Engineers, Department of Justice, General Services Administration, U.S. Postal Service, Census Bureau, Resolution Trust Corporation, FDIC, FSLIC, Commonwealth of Kentucky, Transportation Cabinet, Bluegrass Airport Board, LexTran Board, State of Kentucky Kentucky Office of the Courts, LFUCG Division of Water Quality, University of Kentucky, Kentucky State University, Kentucky Community and Technical College System, Eastern Kentucky University, Division of Real Property State of Kentucky, Louisville Regional Airport Board, Lexington KY Airport Board.

APPRAISED FOR:

Major horse farms, full range of commercial properties, multi-family residential, condemnation cases for both Plaintiff and Defendant, IRS, utility companies, four flood control lane projects, Urban Renewal, major industrial properties and highway right of way. Appraisals conducted on conservation easements for individuals the State of Kentucky for the PACE program and the Lexington Fayette Urban County Government for the Purchase of Development Rights, on Farm Properties, Marathon Oil Co. for R/W easements, CSX Railroad, Norfolk Southern Railway, Cincinnati Insurance, Safe Co Insurance, LexTran, and Southern States.

QUALIFIED AS EXPERT IN REAL ESTATE VALUES:

Federal Court of Kentucky- Eastern and Western Division. Testified in Local Tax Appeal Cases, Circuit Court of Clark, Pike, Montgomery, Bourbon, Woodford, Jessamine, Bell, Johnson, Jefferson, Anderson, Franklin, Boone, Campbell, Scott, Lawrence, Clay, Whitley, Pulaski, Kenton, and Martin County, Kentucky, and the United States Bankruptcy Court.



ATTACHMENT C

**Review of the Applicant's Economic Impact Analyses
Sebree Solar II, LLC Project
Henderson & Webster Counties, Kentucky**

Prepared for

**Wells Engineering PSC
6900 Houston Road, Suite 38
Florence, Kentucky 41042**

By

**Mark M. Watters
Watters Unclaimed Property Consulting LLC
2519 Ashton Court
Cincinnati, Ohio 45244**

**Before the Kentucky State Board on Electric Generation and
Transmission Siting**

Case No. 2021-00131 Summary Findings

This is a significant project for the Applicant and the State. The economic impact analyses by Applicant Sebree Solar II, LLC is absent of much detail. However, the available information would indicate a very profitable venture for the Applicant and a significant increase in economic value for the state.

Introduction and Background

Pursuant to *The Electronic Application of Sebree Solar II, LLC for a Certificate to Construct an Approximately 150 Megawatt Merchant Solar Electric Generating Facility and an Approximately 4.85 Megawatt Merchant Generating Facility in Henderson County, Kentucky Pursuant to KRS 278.700 and 807 KAR 5:110*, (“Sebree II, or the “Application”), Case No. 2021-00131, the Applicant is required to make certain statements and representations regarding the suitability and compliance with statutory requirements for said proposed Project and facility. This is a review of the Applicant’s representations of perceived economic impact to and for the community made pursuant to KRS 278.706(2)(j). This review encompasses the entirety of the Application including its Exhibits, with principle focus on the *Application’s Exhibit 10, Sebree Solar II, Inc. Project Economic Impact Analysis* (the “Report”), consisting of a report titled “Pegasus Institute, Sebree II Project Economic Impact Analysis” consisting of 18 pages, together with responses to the Kentucky Siting Board Staff’s *Requests for Information to Sebree Solar II, LLC*.

The proposed facility is to be located in Henderson County, Kentucky, on +/- 1,000 acres located near Robards, Kentucky. The Project is projected to include over 400,000 photovoltaic solar panels on racking, 51 inverters, and a substation transformer specific to the Project. The Project will connect into an existing EHV substation owned by Big Rivers Electric Corporation by a transition line which concurrently serves a similar project, Sebree Solar, Case No. 2021-00072. In addition to the Sebree Solar Project, there are two other solar projects in near proximity to Sebree II.

The Report bifurcates the economic impacts by Project Phases: Construction and Operational (electrical production). These are further divided into direct and indirect and induced benefits, and civic, economic and tax benefits for the community.

Findings and Conclusions

Overall it appears that the proposed Project will have a clear positive overall economic impact on the state and local economy and communities.

KRS 278.706 states that any person seeking to obtain a construction certificate to construct a merchant generating facility must file:

KRS 278.706

* * * *

(2) A completed application [including] the following:

(j) An analysis of the propose facility's economic impact on the affected region and the state.

Analysis Deficiencies

There are three potential deficiencies in the economic analysis:

Gross verses net impact. The Applicant, except for analysis of current average wages in Henderson County, Kentucky, has failed to provide base economic measures of current conditions and usage to compare to and net with the Applicant's projections of positive economic impact resulting from solar energy production and transmission at the chosen sites. The term "impact" as used herein means "to have an impact or effect on influence", which logically must necessarily have defined starting or reference points. Expected new payroll should be netted against current ("before") payroll; projected property tax increases should be netted against current taxes and similar comparisons made to show the true *net* economic impact of each factor. The failure to net against current values results in likely overstatement of the Project's economic impact. In several instances this Review attempts to rectify these deficiencies by providing such baseline information or reasonable estimates for general comparison.

Lack of details to analyses. With certain exceptions, economic impacts statements are provided in gross, without backup detail or computations. This Review involved application of general and public knowledge from similar applications, research and analyses from public sources, and computations in review of both the Applicant's assertions of economic impact and offers proposed adjustments to those assertions.

Separation of regional and state economic impact. The Application and follow-up responses to the Siting Board Staff's Requests for Information imperfectly differentiates or quantifies divisions between local, regional and state economic impacts or has combined one or two within the other.

The total project investment is estimated to be \$225M over the life of the Project.

Construction Phase Economic Impact

Direct and Indirect Wages. The Construction Phase is projected to create 200 full-time job equivalents, generating wages and salaries of \$10M, and indirect or secondary employment in the community of 58 full-time job equivalents comprising an additional \$1.5M over the 18 months of the Phase. While the Applicant lists the type of jobs anticipated and their projected full-time equivalent annual wages, makes no representation which, how many and value of full-time job equivalents and whether they will *de facto* benefit the immediate community, the region, or the state's citizenry. Employee benefits were not included in the analysis.

Purchase of materials and supplies. The applicant is unable to provide an estimate of local, Kentucky or out-of-state purchases of materials, supplies or tools. In similar projects, generally most of the materials and supplies used or consumed in the Construction Phase, either as direct incorporations into the facilities, consumables used in that incorporation, or tools, are purchased outside the immediate locality, and in great bulk outside Kentucky and imported to the state and site.

Construction Phase Overlap. The Applicant does not anticipate any construction overlap with the three other projects in the immediate vicinity. Thus, there should be little or no overlap of resources between these four projects.

State and local taxes – Income, LLET, and occupational taxes. No representation of the occupational and withholding taxes is provided. The Applicant represents that it will not be seeking either Industrial Revenue Bonds (IRB) or Payment in Lieu of Taxes (PILOT) agreements with the County.

State and local sales and use taxes. The applicant represents that state sales and use taxes are anticipated to be approximately \$1M.

State and local real estate and personal property taxes. Real estate values and thus, taxes, are not anticipated to negatively impact the vicinity to the project. No representation of increased value to the project properties themselves has been outlined or inferred. Payments of such taxes by the Applicant are estimated to be \$390,000 per year and \$15.5M over the life of the Project.

Operational Phase Economic Impact

During the Operational Phase, the facility will be generating electricity for sale.

Direct and Indirect Wages. A minimal operating staff will be employed, estimated to be 2 full-time job equivalents annually with a combined yearly payroll of \$119,000. However, the economic impact should be computed as the annual and total Project wages *net* of personal

income which would have been realized from farming the same acreage.

Purchase of materials and supplies. The purchase of material and supplies for maintaining the generation and transmission and the facility generally have not been segregated from other costs and economic impacts.

State and local taxes – Income, LLET, and occupational taxes. The Applicant’s LLET and corporate income taxes have not been detailed for the Operational phase.

State and local sales and use taxes. The Applicant has not stated a sales and use tax impact for purchases during the Operational Phase beyond those projected under the Construction Phase.

State and local real estate and personal property taxes. The Applicant represents that it will not be seeking either Industrial Revenue Bonds (IRB) or Payment in Lieu of Taxes (PILOT) agreements with the County. Payments of such taxes by the Applicant are estimated to be \$390,000 per year and \$15.5M over the life of the Project

Electrical output. Electrical output is anticipated to be commensurate with similar projects.

Decommissioning. The Applicant is committed to the decommissioning of the facility at the closure of the Project, including the removal of all possible machinery, equipment, and other ancillary property that might impede or prevent other productive use of the property following the Project. However, of concern is the likelihood that some of the personal property associated with the Project will not be able to be recycled during decommission, and might lead to disposal into Kentucky landfills. In particular, solar panels, of which 400,000 are proposed for this Project, are not currently economically recyclable. As these panels contain potentially harmful or poisonous materials, including heavy metals, and materials that could potentially leech into groundwater, consideration should be given to the potential negative economic impact decommissioning might case.

Recommendations

The applicant has projected an investment of \$225,000,000 for this project, much of which is front-loaded in the Construction Phase covering the first two years of the Project’s projected life.

The Project will have a significant positive impact on the economy contribution by the Applicant, but the impact on the local community, while positive, is unclear, with several measures for each Phase being unknown. It appears that the most significant potential impact on the local community would potentially be with employment, but only to the degree that jobs are filled locally, regionally or from within Kentucky, and then only during the Construction Phase. The state and local jurisdictions will realize significant tax benefits.



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Professional Experience

Watters Unclaimed Property Consulting LLC, Cincinnati, Ohio

Proprietor, 2018 - Present

Federal, state & local taxes, business registration, and property analyses

DuCharme, McMillen & Associates, Inc., Cincinnati, Ohio

Technical Director – 1997 - 2018

Client Resources – All federal, state and local taxes, unclaimed property, business registration and government compliance

Borden, Inc., Columbus, Ohio

Senior Tax Analyst

Federal, state and local taxes – compliance, analysis, valuation and audit

Property taxes – rendering, valuation, appraisal review, audit and protest

Education

Juris Doctorate (J.D.), Ohio Northern University, Claude W. Pettit College of Law, Oxford, Ohio

Bachelor of Arts in History, Miami University, Oxford, Ohio

Electric Generation and Transmission Siting Studies and Analyses – Economic Impact - Solar – Before the Kentucky Board on Electric Generation and Transmission Siting

In Re: Bluebird Solar LLC, Case No. 2021-00141, Application for Certificate to Construct an Approximately 90 Megawatt Merchant Electric Solar Generating Facility in Harrison County, Kentucky (September 2022)

In Re: Blue Moon Energy LLC, Case No. 2021-00414, Application for Certificate to Construct an Approximately 70 Megawatt Merchant Electric Solar Generating Facility and Nonregulated Electric Transmission Line in Harrison County, Kentucky (May 2022)

In Re: Sebree Solar, LLC, Case No 2021-00072, Application for Certificate to Construct an Approximately 60 Megawatt Merchant Solar Electric Generating Facility in Meade County, Kentucky (circa November 2021)

In Re: McCracken County Solar LLC, Case No 2020-00392, Application for Certificate to Construct an Approximately 60 Megawatt Merchant Solar Electric Generating Facility in Meade County, Kentucky (circa September 2020)

In Re: Meade County Solar LLC, Case No. 2020-00390, Application for Certificate to Construct an Approximately 40 Megawatt Merchant Solar Electric Generating Facility in Meade County, Kentucky (circa September 2020)

In re: Golden Solar, LLC, Case No. 2020-00243, Application for a Certificate of Construction for an Approximately 100 Megawatt Merchant Electric Solar Generating Facility in Caldwell County, Kentucky (circa September 29, 2022)

As a subcontractor to the primary contractor for such study, reviewed the Applicant project reports of direct, indirect and induced economic impacts on the state and community; state corporate income, personal income, and occupational taxes; real and person property taxes; sales and use taxes; and net output value of goods and services produced.

Tax Studies – Real & Personal Property, Sales and Use, and Local Taxation Including Available Incentives, Deductions and Exemptions

Planning, Design and Analysis of Electrical Power System Upgrades – Tennessee

Performed construction contract review for the purposes of making a proposal for electronic system upgrades, to determine application of major taxes – Income, property sales and use taxes, rates, exemptions, exceptions, and available incentives applicable to Michigan.

Tax Studies – Kentucky Occupational Taxes

Research to identify local occupational taxes for proposed job sites

Prior to initiation and execution of contractor work projects, researched local occupation taxes for applicability, rates, registration and returns.

Tax Studies – Sales and Use Taxation

Planning, Design and Analysis of Electrical Power System Upgrades - Michigan

Performed construction contract review for the purposes of making a proposal for electronic system upgrades, to determine application of sales and use – and state tax exemptions deductions and incentives available.

Taxes Corporate Registration to Do Business and Pay Taxes and Fees

Registration of a Business and For Taxation - Pennsylvania

Made applications with the Pennsylvania Secretary of State for state registration and with the state Department of Revenue for all state and local applicable taxes.

Registration and Management of State Personal and Gross Receipts Taxes

Registration for Taxation – New Mexico

Determine applicable taxes and means of registration for payment of New Mexico personal and gross receipts taxes.



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