1. Refer to the application generally. Provide copies of all written or electronic correspondence pertaining the project received from neighboring property owners and other members of the general public and any corresponding responses.

Response: See Exhibit K for all email communication with neighboring property owners, which is being filed with a petition for confidentiality.

Witness: Carson Harkrader

2. Refer to the application, Volume 1, Section 2. Description of Proposed Site.

a. Provide a description of the land acquisition process in which Glover Creek obtained the 400 acres of land for the proposed solar facility site.

b. State whether the solar panels consist of monocrystalline or polycrystalline solar cells and why Glover Creek decided on that type of material.

c. With respect to the evergreen shrubs that will planted, state how high those shrubs are expected to grow.

Response:

a. Carolina Solar Energy located a transmission line in our GIS mapping system that was owned and operated by the East Kentucky Power Cooperative ("EKPC"), which is a member of the PJM interconnection region. After determining the size of the transmission line from PJM, and running internal analysis on our estimates of the capacity of the transmission line for a new solar project, Carolina Solar Energy began to locate large flat tracts of land that were beneath or adjacent to the existing transmission line. We then reached out to talk to the landowners about a solar lease. Carolina Solar Energy then set up an in-person meeting at one of the landowner's homes and met personally with all of the interested landowners. We answered questions and further explained the process of developing and constructing a solar farm on their property, as well as letting them know the history of our company. After various further in-person and phone conversations over a period of time between Carolina Solar Energy and the landowners, we successfully signed leases with of 3 adjoining landowners in order to establish site control on enough usable acreage to match the maximum size solar project that we calculated would be able to connect to the utility transmission line.
b. The solar panels installed in this project will likely be polycrystalline since these panel types are more common than monocrystalline, however, the technology is functionally identical and the sourcing decision has not yet been made. Monocrystalline is sometimes more expensive due to the slightly increased efficiency of using a single silicon wafer rather than a composite.
c. The evergreen shrubs used in the vegetative buffer will grow to a height of at least 6 feet after 3 years, and will then continue to grow.

Witness: Carson Harkrader

3. Refer to the application, Volume 1, Section 6. Public Notice Report.

a. Provide copies of all displays and handout materials that were used as part of the public outreach efforts of Glover Creek.

b. Identify any concerns that were received by Glover Creek resulting from the public outreach efforts and state how Glover Creek addressed those concerns.

Response:

a. The following reports which were part of our Siting Board application were made available at both the Neighborhood Dinner and Public Meeting: 1. Layout (Volume 2 Exhibit E, page 315) 2. Property Value Report (Volume 2 Exhibit A). Additionally, the following documents, attached as Exhibit A, were used in our public outreach efforts: 1. CSE company summary, 2. Enertis energy storage information, 3. NC State University Report on Health and Safety Impacts of Solar Photovoltaics, 4. Glover Creek Solar Fact Sheet, 5. Layout including detail pages. While all materials were available, most attendees focused on the site plan. [redacted] Carolina Solar Energy heard concerns from one adjoining neighbor at our Neighborhood Dinner. Their comments were the only concerns that Carolina Solar Energy has received regarding the project. [redacted]

Witness: Carson Harkrader

4. Refer to the application, Volume 1, Section 9, Effect on Kentucky Electricity Generation System.

a. Explain why the Feasibility Study and the System Impact Study references the proposed solar facility's total capacity as 35 MW.

b. State the purpose of the Facilities Study and whether Glover Creek anticipates any issues will be identified as part of that particular study.

Response:

a. The Project is comprised of 2 unique interconnection queue submittals to PJM; the first being queue number AE2-071 for 35MWac, and the second being AF1-203 for 20MWac. AF1-203 increases the project size from AE2-071, combining both queue positions to create a 55MWac project. The two queue positions will be combined together prior to the release of the final the Facilities Study.

b. The transmission operator for the Project, PJM, describes the Facilities Study as follows: "A Facilities Study encompasses the engineering design work necessary to begin construction of required expansion plan upgrades identified by PJM to accommodate an interconnection request. This study also provides a good-faith cost estimate for attachment facilities, local upgrades and network upgrades, as well as an estimate of the time required to complete detailed design and construction of the facilities and upgrades." There are no issues anticipated from the Facilities Study. https://learn.pjm.com/three-priorities/planning-for-the-future/connecting-grid.aspx

Witness: Carson Harkrader

5. Refer to the application, Volume 1, Attachment G – Economic Impact Report, regarding the section discussing Regenerative Energy. Provide additional details on this method, discussing, among other things, how long Silicon Ranch Corporation (Silicon Ranch) has utilized this concept, how many other Silicon Ranch solar facilities implement Regenerative Energy land management techniques, the results from these other solar facilities that utilize Regenerative Energy, what specific Regenerative Energy farming practices will be implemented at the proposed Glover Creek solar facility, and whether any local farmers and ranchers have been recruited to implement these practices.

Response: This should not have been referenced for this project, please see Exhibit G for a corrected page.

Witness: Carson Harkrader

6. Refer to the application, Volume 2, Site Assessment Report (SAR) Section 1, Description of Proposed Site, Item 5. The description references Turkey Creek. Explain whether the reference should be Glover Creek.

Response: This should refer to Glover Creek, please see Exhibit H for a corrected page.

Witness: Carson Harkrader

7. Refer to the application generally. Provide a breakdown of the total cost of the project, including contingencies.

Response: [redacted]

Witness: Carson Harkrader

8. Refer to the SAR Section 2, Compatibility with Scenic Surroundings. The language of the last two paragraphs on the page are identical to the same page in the application of Turkey Creek Solar LLC (Turkey Creek) in Case No. 2020-00040[3]. Confirm the accuracy of the last two paragraphs in the instant application, or provide the correct information for Glover Creek.

Response: The second-to-last paragraph was not accurate for Glover Creek, please see Exhibit N for a corrected page.

Witness: Carson Harkrader

9. Refer to the SAR Section 4, Anticipated Noise Levels at Property Boundary. This page is identical to the same page in the application of Turkey Creek in Case No. 2020-00040.[4] Confirm the accuracy of this Section.

Response: Please see Exhibit I for a corrected version of this page.

Witness: Carson Harkrader

10. Refer to the SAR Section 4, Anticipated Noise Levels at Property Boundary. Garrard County noise ordinances are discussed. Explain whether Metcalfe County has noise control ordinances.

Response: Metcalfe County has no noise control ordinances in place at this time. Please see Exhibit I for a corrected version of this page.

Witness: Carson Harkrader

11. Refer to the SAR Section 6, Mitigation Measures. The first page of this Section is identical to the same page in the application of Turkey Creek in Case No. 2020- 00040.

a. Provide the specific mitigation measures that Glover Creek will undertake for this project.

b. Explain whether Glover Creek has engaged Copperhead Environmental Consulting or some other consulting firm as part of this project.

Response:

a. Please see Exhibit J for a corrected version of this page.

b. Copperhead Environmental Consulting is the environmental consulting firm that Carolina Solar Energy contracted to complete the Wetlands Evaluation, the ESA Phase 1, NEPA review, and Jurisdictional Determination from the US Army Corps of Engineers for the Project. Copperhead Environmental Consulting subcontracted the preparation of the ESA Phase 1 to Linebach Funkhouser, Inc.

Witness: Carson Harkrader

12. Refer to the SAR, Attachment A – Property Value Impact Report.

a. Describe Kirkland Appraisals, LLC's experience with performing commercial appraisals evaluating the impact of utility scale solar facilities' impact on property values.

b. On page 1, the report states that the solar farm is proposed to be constructed on approximately 322 acres out a parent tract assemblage of approximately 968 acres. Explain what is meant by this land description and why it differs from the 400 acres as referenced in other parts of the application.

c. Refer page 5 regarding the research of solar farms in Kentucky. Explain why the solar facilities developed jointly by Louisville Gas and Electric Company and Kentucky Utilities Company in Shelby and Mercer counties, Kentucky, were not part of the research.

Response:

a. Please see pages 1-3 of the Property Value Report for a description of Kirkland Appraisals, LLC's experience in evaluating the impact of utility scale solar facilities on property values.
b. Please refer to item number 1 in the letter from Rich Kirkland dated May 19, 2020 attached as Exhibit B.
c. Please refer to item number 2 in the letter from Rich Kirkland dated May 19, 2020 attached as Exhibit B.

Witness: Richard C. Kirkland, Jr., MAI

13. Refer to the SAR, Attachment C – Noise and Traffic Assessment, page 1, Section 1.1, regarding the end of life condition. Provide the expected useful life of the propose solar facility and state how Glover Creek or Silicon Ranch will approach the decommissioning of the solar facility in an environmentally impactful manner and maintain the land so that it can be returned to farming or other development.

Response: The expected useful life of the solar facility is approximately forty (40) years. Solar PV panels are generally warrantied by their manufacturers for twenty-five (25) years and will continue to generate power for at least forty (40) years. Regarding the decommissioning of the facility, please see Exhibit L for a decommissioning cost estimate and a short description of decommissioning procedures which are common practices for solar facilities. The leases signed with the Glover Creek Project landowners require the Project owner to remove all of the solar equipment at the end of the lease term. As outlined in Exhibit L, there is an economic incentive to remove the equipment since the material value of the aluminum, copper and steel is higher than the cost of removal. There is also the possibility that the Project will extend the leases with the landowners and retrofit the Project with modern technology to extend the life of the facility and its operation.

Witness: Carson Harkrader

14. Refer to the SAR, Attachment D – Phase I Environmental Site Assessment Report Section 11.0 page 17 dated February 2020. Section 11 lists five water supply wells, the potential for asbestos containing materials (ACM) on the site, and recommendations pertaining to both findings. Explain whether Glover Creek intends to implement the report recommendations and, if so, the anticipated completion dates of the well closures and ACM survey.

Response: The operation and status of water supply wells outside of the lease area will remain the property owners' decision. Water supply wells within the lease area will remain untouched and in operation unless they endanger health and safety of employees or the facility, in which case appropriate action will be taken to safely mitigate risks posed by the well.

Witness: Carson Harkrader

15. Refer to the questions propounded by Harvey Economics, which are attached as an Appendix to this information request, and provide responses to those questions.

Response: See Glover Creek's Responses to Harvey Economics.

Witness: Carson Harkrader

Exhibits Included:

A, B, G, H, I, J

K(confidential), L, M, N

Exhibit A1

Exhibit A2

Filed separately

Exhibit B

Exhibit B

Kirkland Appraisals

Richard C. Kirkland, Jr., MAI
9408 Northfield Court
Raleigh, North Carolina 27603
Phone (919) 414-8142
rkirkland2@gmail.com
www.kirklandappraisals.com

May 19, 2020

Carson Harkrader
Carolina Solar Energy
400 West Main Street, Suite 503
Durham, NC 27701

RE: Glover Creek Solar Impact Study, Metcalfe County, KY

Ms. Harkrader

The purpose of this letter is to address question from the Kentucky Siting Board related to the market impact analysis that I completed on this project on March 4, 2020.

For simplicity, I have the following responses to the questions forwarded to me and this letter should be attached to the original impact analysis.

1 - The first issue to address is the acreage involved in the project. The impact analysis identifies 322.44 acres to be impacted. The updated siteplan identifies approximately 400 acres. I reviewed that map and find no basis for changing the opinion of the original impact analysis. The distance between panels to adjoining homes remain unchanged. The comparable solar farms identified in the original report include numerous projects in a similar size showing no impact which supports this conclusion.

2 - I was asked why I did not include Louisville Gas and Electric Company and Kentucky Utilities Company in Shelby and Mercer counties in the Kentucky research. The short answer is that I looked at projects identified by Solar Energy Industries Association (SEIA) major projects, which does not identify those two projects. The only projects indicated by that map not included are related to the roof mounted L'oreal solar plant in Florence, Kentucky.

But I have since pulled data on both of the solar farms asked about. The E. W. Brown 10 MW solar farm was built in 2014 and adjoins three coal-fired units. Given that research studies that I have previously read regarding fossil fuel power plants including "The Effect of Power Plants on Local Housing Values and Rents" by Lucas W. Davis and published May 2010, it would not be appropriate to use any data from this solar farm due to the influence of the coal fired power plant that could have an impact on up to a one-mile radius. I note that the closest home to a solar panel at this site is 565 feet and the average distance is 1,026 feet. The homes are primarily clustered at the Herrington Lake frontage. Again, no usable data can be derived from this solar farm due to the adjoining coal fired plant.

The Cooperative solar farm in Shelby County is a 0.5 MW facility on 35 acres built in 2020 that is proposed to eventually be 4 MW. This project is too new and there have been no home sales adjoining this facility. The research on Kentucky was completed in November 2019 with an update in March 2020 and no data was pulled on this facility as it was still in construction. Until there are sales of property next to this project, I cannot pull any usable data from this solar farm.

3 - I was asked about impacts during construction. This is not a typical question I get as any development of a site will have a certain amount of construction, whether it is for a

commercial agricultural use such as large scale poultry operations or a new residential subdivision. I defer to the traffic study on traffic impacts. Construction will be temporary and consistent with other development uses of the land and in fact dust from the construction will likely be less than most other construction projects given the minimal grading. I would not anticipate any impacts on property value due to construction on the site. I note that in the matched pairs that I have included there have been a number of home sales that happened after a solar farm was approved but before the solar farm was built showing no impact on property value. Therefore the anticipated construction had no impact as shown by that data.

4- I was asked about the 37 solar farms and the 81 matched pair sets and how I chose those. This is the total of all the usable home and land sales adjoining the 650 solar farms that I have looked at over the last 9 years. Most of the solar farms that I have looked at are only a few years old and have not been in place long enough for home or land sales to occur next to them for me to analyze. There is nothing unusual about this given the relatively rural locations of most of the solar farms where home and land sales occur much less frequently and the number of adjoining homes is relatively small.

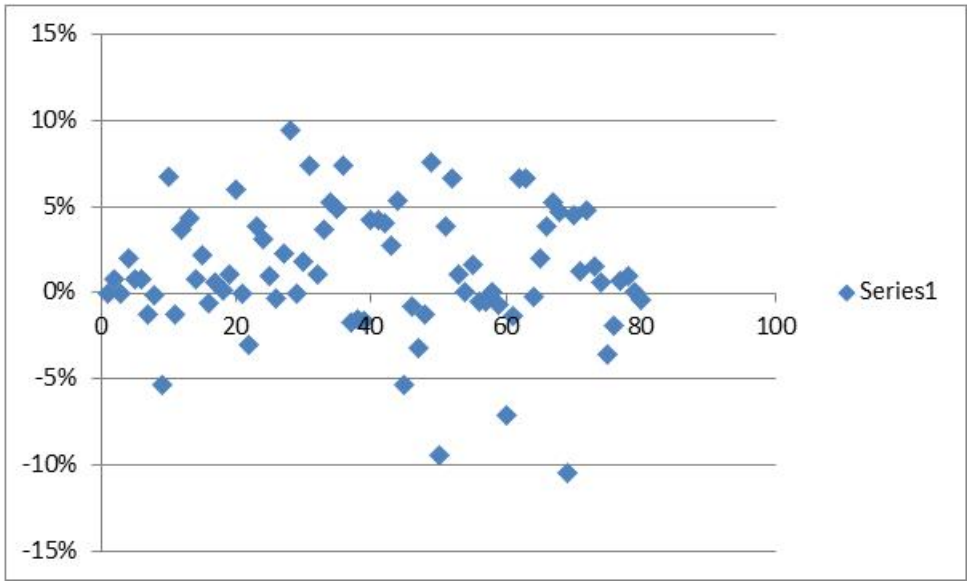
Essentially, I go back through the solar farms that I have looked at roughly once a year to see if there are any new sales. If there is a sale I have to be sure it is not an inhouse sale or to a related family member. A great many of the rural sales that I find are from one family member to another, which makes analysis impossible given that these are not "arm's length" transactions. There are also numerous examples of sales that are "arm's length" but are still not usable due to other factors such as the adjoining coal fired plant noted in Question 2. I have looked at homes that require a driveway crossing a railroad spur, homes in close proximity to large industrial uses, as well as homes adjoining large state parks, or homes that are over 100 years old with multiple renovations. Such sales are not usable as they have multiple factors impacting the value that are tangled together. You can't isolate the impact of the coal fired plant, the industrial building, or the railroad unless you are comparing that sale to a similar property with similar impacts. Matched pair analysis requires that you isolate properties that only have one differential to test for, which is why the type of sales noted above are not appropriate for analysis.

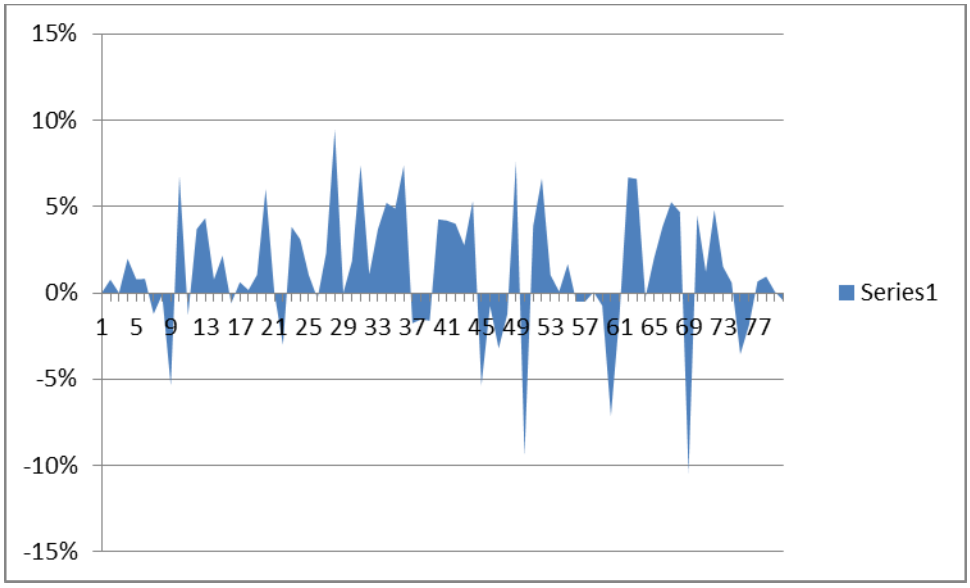
So once I go through all of the sales and eliminate the family transactions and those sales with multiple differentials, I am left with 81 matched pairs to analyze. The only other sales that I have eliminated from the analysis are home sales under $100,000, which there haven't been many such examples, but at that price range it is difficult to identify any impacts through matched pair analysis. As can be seen from a later question, I have not cherry picked the data to include just the sales that support one direction in value, but I have included all of them to see where the data takes me.

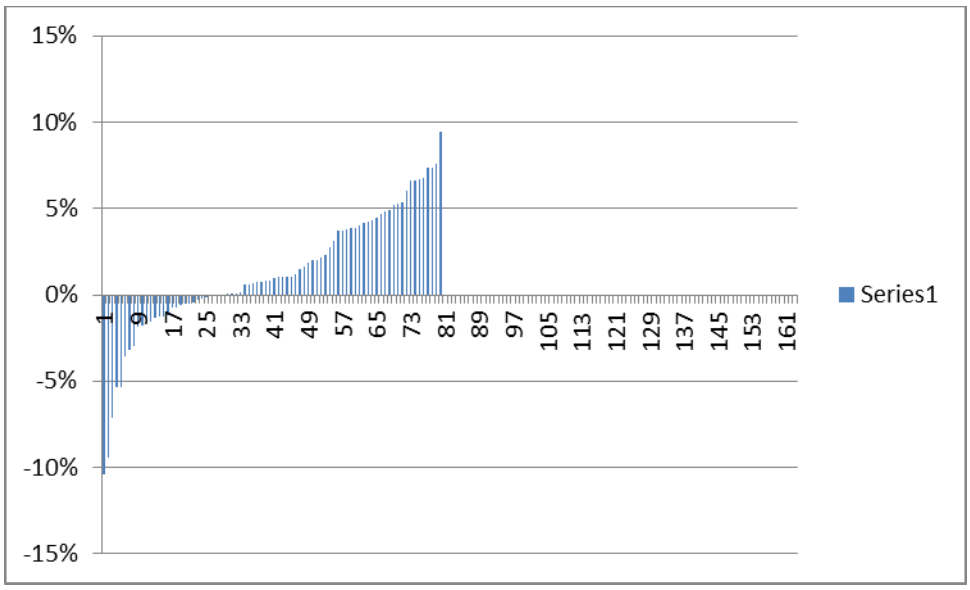
5- I chose the larger solar farms based on approximately 20 MWs and up as outlined on Page 94.

6- I was asked about the spread of measured impacts. The spread shows a -10% to a +9% impact on adjoining properties with an aggregate rate of +1%. This is how data in large groups looks. To put this in context I have provided a couple of charts/graphs to illustrate what the spread is showing. The first is a scatter point that shows the weight of the points clustered right at 0%. There are 5 points showing -5% or greater impacts and 15 showing impacts of +5% or greater. This leaves 62 points between -5% and +5%. I have an area chart following that to show the weight of the area is in the 0 to +5% of the chart. Following that I have reordered all of the adjustments into lowest to highest and that chart shows again the weight of the data in the 0 to +5% impact area with only a small amount in the 0 to -5% range.

So given that there are 3 times as many examples of enhancements over 5% to property value over the number of times a negative impact over 5% were identified and that the preponderance of the data falls between -5% and +5%, with most of that being between 0% and +5%, the conclusion of no impact is well established. The range with some higher and some lower is just a function of gathering large samples and not cherry picking the data but showing everything including the outliers.







If you have any further questions please call me any time.

Sincerely,

Richard C. Kirkland, Jr., MAI
Kirkland Appraisals, LLC

Exhibit G

Exhibit G

Section 4(2)(j)

An analysis of the proposed facility's economic impact on the affected region and the state

---

The proposed facility will generate lasting and significant positive economic and fiscal impacts on the entire affected region and the state, both immediate impacts during the construction phase and impacts that present over time during the operational phase. The impacts include the creation of hundreds of construction jobs, meaningful expansion of the local tax base, and the benefits of having, for decades to come, a long-term employer and corporate citizen in the region that has a strong commitment to investing in the communities it serves. The investment in this facility brings a multiplier effect that magnifies each of these impacts. Moreover, the siting of the facility in a rural county that sits on the edge of an economically distressed region ranked among the poorest 10% of counties in the nation further amplifies the facility's positive impacts.

Economic Impact: Capital Investment

The Project will make a multi-million dollar capital investment in rural central Kentucky that will have direct, indirect, and induced impacts on a broad range of economic activities in the region and across the state and thus will have a widespread ripple effect on the economy at large. This injection of capital will lead to increased demand for products and services in the region, greater levels of income, and additional spending that directly benefit many local and regional businesses. This multiplier effect will cycle repeatedly and radiate out from the area where the money was spent, positively affecting broader regions as it spreads throughout the geographical area.

Economic Impact: Construction Phase

Construction of the facility is anticipated to create approximately 450 jobs -- 300 direct and 150 indirect and induced[1], the vast majority of which will be filled by local craft and contract workers. In addition to these skilled labor positions, there will be at least 30 highly paid construction management positions, including a project manager, assistant project manager, eight project engineers, two safety managers, and various support engineers, construction superintendents, and construction managers. These 450 jobs translate to a projected injection of approximately $15M[2] in new wages into the local economy, which will support local businesses, and a labor income multiplier impact of an additional $7.5M.[3] The **total construction phase economic impact of the facility (exclusive of the capital investment and tax revenues) is projected to be at least $22.5M**.

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[1] Based on studies of direct, indirect, and induced job creation associated with similar projects using the IMPLAN platform and databases

[2] A conservative estimate based on Bureau of Labor Statistics, Average annual income solar photovoltaic installer: $42,680, which does not account for higher income positions https://www.bls.gov/ooh/construction-and-extraction/solar-photovoltaic-installers.htm and United States Census Bureau, Quick Facts, Metcalfe County, Kentucky median income: $35,809https://www.census.gov/quickfacts/fact/table/metcalfecountykentucky/POP060210

[3] Based on an income multiplier of 1.5. New Mexico State University, Income Multipliers in Economic Impact Analysis, https://aces.nmsu.edu/pubs/_z/Z108/welcome.html A multiplier of 1.5 is a conservative assumption for a depressed region like central Kentucky

Exhibit H

Exhibit H

1. A detailed description of the surrounding land uses is identified in the Impact Study conducted by Kirkland Appraisals, LLC, and attached as Attachment A. A summary of the surrounding land use is contained in the chart below

	Acreage	**Parcels**
Residential	5.78%	37.5%
Agricultural	25.01%	16.67%
Agri/Res	69.21%	45.83%

2. Attachment B contains the boundary survey, as well as the legal description of the proposed site.

3. The proposed facility layout is located in Attachment E. The layout shows the proposed access to the site.

4. The Summer Shade – Patton Rd Jct 69kv transmission line would serve the facility and carry power generated by the Project. At this time, it is not anticipated that the Project will need to receive external utility services during typical plant operation.

5. Attachment C is the report showing noise levels expected to be produced by the facility. It indicates, on page 5-6, that "[P]eriodic noise associated with solar panel tracking system and the relatively constant noise of inverters, transformers, and battery storage units will occur during operation. This increase in noise is also negligible due to the distance of noise generating solar equipment from the nearest noise receptor and the implementation of two rows of evergreen shrubbery. The noise produced by the inverters is 67.0 dBA, which is slightly above that of a typical person-to-person conversation (i.e., 60.0), and will not be a contributor of noise to the nearest receptor (i.e., single-family home) locate 2,000+ feet away with a planted buffer between the source and receptor. Site visits and maintenance activities, such as mowing, will take place during daylight hours and will not significantly contribute to noise. The noise associated with these activities is very similar to those currently generated onsite by farming activities and offsite by commercial and farm uses."

Exhibit I

5. Effect on Road, Railways, and Fugitive Dust

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: See Attachment C for a report on the Project's impact on road and rail traffic, and anticipated levels of fugitive dust created by the traffic and degradation of roads caused by traffic created by the Project.

"Traffic in the project vicinity is predicted to increase temporarily during the construction phase of the project. This includes daily morning and evening peaks for construction laborers entering and exiting the project site and periodic delivery of construction materials and equipment. Appropriate signage and traffic directing will occur as necessary to increase driver safety and reduce risk of collisions for approaching traffic. There are not anticipated damages to the existing roadway infrastructure. For facility operation and maintenance, there is no significant increase in traffic (i.e., the expected traffic to be contributed to the area will be less than a typical single-family home)."

"Land disturbing activities associated with the proposed project may temporarily contribute to airborne materials. To reduce wind erosion of recently disturbed areas, appropriate revegetation measures, application of water, or covering of spoil piles may occur. In addition, any open-bodied truck transporting dirt will be covered when the vehicle is in motion. The size of the project site, distance to nearby structures and roadways, combined with vegetated buffers along the property boundaries and fencerows will aid in managing off-site dust impacts. Internal roads will be compacted gravel, which may result in an increase in airborne dust particles during dry conditioned and internal road traffic is heavy. During construction activities water may be applied to internal road system to reduce dust generation. Water used for dust control is authorized under the Kentucky Pollutant Discharge Elimination System (KPDES) as a non-stormwater discharge activity, which will be required for the proposed project."

The Project will not be using railways for any construction or operation activities.

Exhibit J

6. 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: Specific of mitigation measures are listed below.

1. Planting of native evergreen species as a visual buffer to mitigate viewshed impacts. Plantings to primarily be in areas directly adjacent to the Project without existing vegetation; see Attachment E for anticipated planting areas and the specifics of the plantings. Members of the development team have been meeting with neighbors to discuss specific viewshed concerns.
2. Cultivation of at least 2 acres of native pollinator-friendly species onsite; see Attachment E for anticipated pollinator area.
3. Glover Creek Solar had an Environmental Site Assessment (ESA) Phase 1 completed for the site. See Attachment D for the results of this study.

The regulation and permitting of utility scale solar impacts to wetlands, waters of the US, and stormwater will be addressed separately to this Siting Board application, and are as follows. Glover Creek Solar, LLC has engaged Copperhead Environmental Consulting, Inc., a 20-person environmental engineering company based in Garrard County, KY, to perform an on-site wetlands delineation (which is in progress) and an Approved Jurisdictional Determination (AJD) application. Other permit applications will follow to the appropriate regulatory body as described below, as the project prepares for construction.

1. Stormwater Discharges Associate with Construction Activity

Regulatory Agency: Kentucky Energy & Environment Cabinet – Department for Environmental Protection – Division of Water (DOW)

The Project will obtain a Kentucky Department of Environmental Protection Stormwater Construction General Permit (Permit) from the Kentucky DOW for construction projects that disturb one or more acres of land in compliance with the National Pollutant Discharge Elimination System (NPDES) of the Clean Water Act (CWA). The Kentucky Pollution Discharge Elimination System (KPDES) permit (KPDES No: KYR100000) is a General Permit for Stormwater Discharges Associated with Construction Activity.

Exhibit L

Exhibit L

SOLAR FARM: Glover Creek Solar
SITE ADDRESS: Metcalfe County, KY
PREPARED FOR: Carolina Solar Energy
PROJECT NUMBER: 115025.15
DATE: 3-Dec-19

Ballentine Associates, P.A.
221 Providence Road
Chapel Hill, NC 27514
(919) 929-0481

PRELIMINARY OPINION OF PROBABLE COST FOR SOLAR FARM DECOMMISSIONING

Assumtions: System Size Conversion Factor: 11

55.0 MW AC
-- Tracker Racking 71.5 MW DC
-- Poly Modules 400 W 1.30 DC/AC Ratio
-- Dual Inverters
Summary:

ITEM	QUANTITY	UNIT	SALVAGE UNIT COST	TOTAL SALVAGE VALUE	REMOVAL UNIT COST	TOTAL COST TO REMOVE/RESTORE	NET GAIN/LOSS	COMMENTS
Wire (Copper)	436,351	LB	$2.66	$1,158,854.73	$0.20	$87,270.17	$1,071,584.56	See Note 1
Wire (Aluminum)	11,967	LB	$0.81	$9,711.23	$0.20	$2,393.47	$7,317.76	See Note 1
Racking System	8,317,100	LB	$0.13	$1,052,549.15	$0.08	$665,368.00	$387,181.15	See Note 2
Solar Modules (Crystalline)	178,750	EA	$4.00	$715,000.00	$2.00	$357,500.00	$357,500.00	See Note 3*
Inverters	20,615	LB of Metal	$0.91	$18,684.80	$2,250.00	$22,500.00	-$3,815.20	See Note 4
Transformers	25,000	kVA	$5.00	$125,000.00	$5,000.00	$50,000.00	$75,000.00	See Note 5
Concrete Pad	10	EA	$0.00	$0.00	$1,500.00	$15,000.00	-$15,000.00	See Note 6
6' Chain Link Fencing	258,000	LB	$0.04	$10,320.00	$3.50	$210,000.00	-$199,680.00	See Note 7
Substation	0	EA	$17,000.00	$0.00	$85,000.00	$0.00	$0.00	See Note 8
Battery Storage System	5	EA	$2,000.00	$10,000.00	$15,000.00	$75,000.00	-$65,000.00	See Note 9
Land Restoration	450	AC	$0.00	$0.00	$500.00	$225,000.00	-$224,500.00	See Note 10
Erosion Control	450	AC	$0.00	$0.00	$2,000.00	$900,000.00	-$900,000.00	See Note 11
TOTAL				**$3,100,119.91**		**$2,610,031.64**	**$490,588.27**	

Notes:

1. Wire Excavate to cable depth at one end of trench. Use tractor or other equipment to remove all wiring and conduits in common trench.

	Length	LBs/1000 FT	Total LBs
MV - 1/0 AWG (Copper)	29,260	363.013	10,622
MV - 1/3 (AL)	29,260	409	11,967
AC output (Copper)	73,590	99.181	7,299
DC output (Copper)	6,325,000	66.155	418,430
Total Copper			**436,351**
Total Aluminium			**11,967**
Cost to Remove:	$0.20	per pound	

2. Racking System Racking frame: Cut legs and cross beams to appropriate size and transport to staging area. Racking Posts: Remove via post-puller and transport to staging area. Haul all removed pieces of racking system to recycle center via flatbed.

Racks:	2530	
Posts (10' W6x9) per rack:	13	
Total Posts:	32,890	
Total post weight (LBS):	**2,960,100**	
Total Racking Weight (LBS):	**5,357,000**	
Total Structure Weight:	**8,317,100**	
Cost to Remove Racking System:	$0.10	per pound

Exhibit L

3. Solar Modules

Hand remove modules and place on pallets. Transport pallets to Module recycle center. Assumed salvage value for crystalline modules.

Cost to Remove Modules:	$2.00	Per module
Salvage Value :	$0.01	Per Watt

4. Inverters

Removal by crane onto flatbed with no dissasembly. Haul to recycle center.

		Total LBS	$/LB
Number of Inverters:	10	41,230	
Weight Per Inverter (LBS):	4123		
% Steel:	20%	8,246	$0.13
% Aluminum:	20%	8,246	$0.81
% Copper:	10%	4,123	$2.66
Total:		**20,615**	$0.91
Cost to Remove Inverters	$2,250	Each	

5. Transformers

Removal by crane onto flatbed with no dissasembly. Haul to recycle center. Oil removal performed by recycle center.

Total Transformers:	10	
Transformer:	2,500	kVA
Total kVA:	25,000	
Value:	$5/kVA	
Cost to Remove Transformer:	$5,000	

6. Concrete Pad

Assumed (1) 100 SF precast pad per transfomer and battery system. Remove precast concrete pad via excavator onto flatbed. Haul to recycle center. Assumed $45 fee per load at recycle center.

Cost to remove pad:	$1,500

7. Chain Link Fencing

Assumed 1 post per 10 LF. Assumed post weight of 3 lbs. Machine roll fence fabric, remove posts via post-puller. Transport removed fencing matierials to recycle center.

Fencing:		Post weight =	18000 lbs
Total LF on Project:	60,000	Fence Weight =	240000 lbs
Total Weight:	**258,000**	lbs	
Cost to remove fencing:	$3.50	LF	

8. Substation & Substation Equipment

Remove equipment via crane onto flatbed. Haul to recycle center. Remove substation fencing via fence-roller and remove posts via post-puller. Haul to recycle center. Assumed salvage value.

Cost to Remove:	$85,000
Salvage Value:	20% of Cost to Remove

9. Battery Storage System

Assumed 40' containerized system. Load battery system onto flat-bed via crane. Haul to recycle center. Assumed salvage value.

Cost to Remove:	$15,000	EA
Salvage Value:	$2,000	EA

10. Land Restoration

Includes: removal of gravel access drives via skid-steer and haul off site; Re-seeding of disturbed areas via atv drill-seeder at 5lbs per acre, stablized with

Cost to restore:	$500	Acre

11. Erosion Control

Install perimeter erosion control measures (assumes sediment basins will not be required) before decommissioning begins and remove erosion control measures following decommissioning. Includes erosion control permitting.

Cost :	$2,000	Acre

Exhibit L

Scrap Metal Unit Pricing

NON-FERROUS

Trading summary | Current year summary | Price graph | Average prices | Useful links

Data valid for 2 December 2019

LME OFFICIAL PRICES, US$ PER TONNE

CONTRACT	ALUMINIUM ALLOY	ALUMINIUM	COPPER
Cash Buyer	1310.00	1789.00	5855.00

LME ALUMINIUM

Trading summary | Current year summary | Price graph | Average prices | Contract specs | Useful links

LME ALUMINIUM HISTORICAL PRICE GRAPH

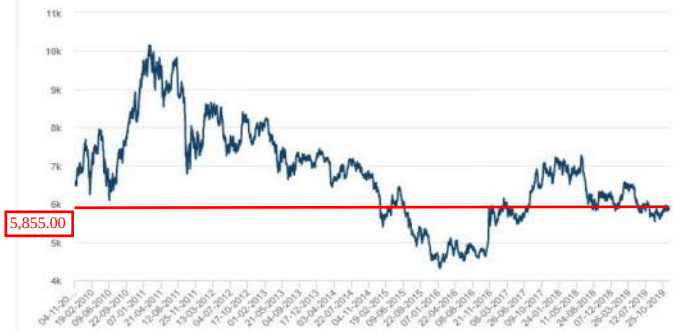
SHOW HISTORICAL DATA FOR

Date From 04-Nov-2009 Date To 02-Dec-2019

LME COPPER

Trading summary | Current year summary | Price graph | Average prices | Contract specs | Useful links

LME COPPER HISTORICAL PRICE GRAPH



SHOW HISTORICAL DATA FOR

Date From 04-Nov-2009 Date To 02-Dec-2019

LME STEEL SCRAP

Trading summary | Current year summary | Price graph | Average prices | Contract specs | Monthly overview

Data valid for 2 December 2019

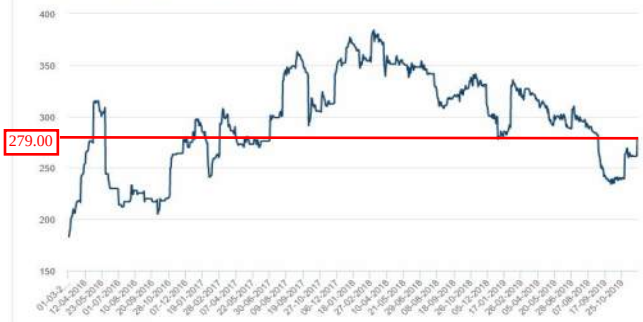
LME CLOSING PRICES, US$ PER TONNE

CONTRACT	PRICE
Month 1	279.00

LME STEEL SCRAP

Trading summary | Current year summary | Price graph | Average prices | Contract specs | Monthly overview

HISTORICAL PRICE GRAPH



Date From 04-Nov-2009 Date To 02-Dec-2019

1 Tonne = 2204.62 LBs

Price Conversion:

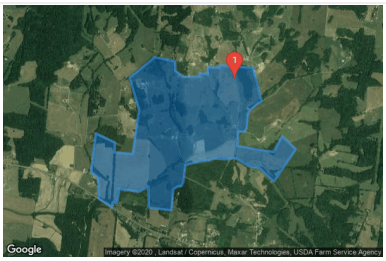
Metal	$/LB
Aluminium:	0.81
Copper:	2.66
Steel:	0.13

Exhibit M

ForgeSolar

Site Configuration: Glover Creek OP on N KY 640

Project site configuration details and results.



Created **Dec. 12, 2019 12:24 p.m.**
Updated **May 29, 2020 10:56 a.m.**
DNI **varies** and peaks at **1,000.0 W/m^2**
Analyze every **1** minute(s)
0.5 ocular transmission coefficient
0.002 m pupil diameter
0.017 m eye focal length
9.3 mrad sun subtended angle
Timezone **UTC0**
Site Configuration ID: 34236.6289

Summary of Results

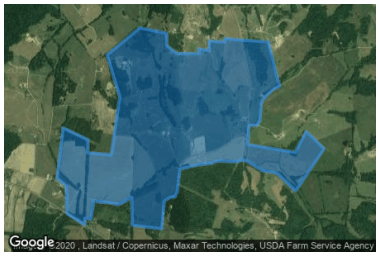
Glare with potential for temporary after-image predicted

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced
	deg	deg	min	min	kWh
PV array 1	SA tracking	SA tracking	203,346	58,260	-

Component Data

PV Array(s)

Name: PV array 1
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0 deg
Tracking axis tilt: 0.0 deg
Tracking axis panel offset: 0.0 deg
Maximum tracking angle: 60.0 deg
Resting angle: 60.0 deg
Rated power: -
Panel material: Smooth glass without AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 6.55 mrad
Approx. area: 24,397,160 sq-ft



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	36.892608	-85.724803	803.59	0.00	803.59
2	36.894839	-85.724889	831.03	0.00	831.03
3	36.895456	-85.725833	828.65	0.00	828.65
4	36.899643	-85.725189	843.11	0.00	843.11
5	36.898648	-85.722614	858.13	0.00	858.13
6	36.897584	-85.722657	830.67	0.00	830.67
7	36.897413	-85.720211	843.11	0.00	843.11
8	36.902217	-85.719310	869.58	0.00	869.58
9	36.905683	-85.720640	920.17	0.00	920.17
10	36.907948	-85.717250	890.00	0.00	890.00
11	36.907502	-85.714460	902.06	0.00	902.06
12	36.906473	-85.714417	876.70	0.00	876.70
13	36.905821	-85.713430	879.04	0.00	879.04
14	36.905823	-85.710984	902.25	0.00	902.25
15	36.906201	-85.711156	903.70	0.00	903.70
16	36.906064	-85.710040	882.80	0.00	882.80
17	36.906853	-85.710018	884.81	0.00	884.81
18	36.906767	-85.708431	896.09	0.00	896.09
19	36.907059	-85.708409	897.82	0.00	897.82
20	36.906939	-85.706650	898.77	0.00	898.77
21	36.906776	-85.703881	898.94	0.00	898.94
22	36.903627	-85.702905	872.87	0.00	872.87
23	36.903123	-85.702683	863.98	0.00	863.98
24	36.902763	-85.703498	858.41	0.00	858.41
25	36.902145	-85.704270	853.66	0.00	853.66
26	36.901647	-85.704635	849.47	0.00	849.47
27	36.900755	-85.704700	845.67	0.00	845.67
28	36.900172	-85.704785	845.42	0.00	845.42
29	36.899863	-85.705064	843.36	0.00	843.36
30	36.899846	-85.705880	840.57	0.00	840.57
31	36.898267	-85.706030	831.44	0.00	831.44
32	36.897615	-85.701095	861.91	0.00	861.91
33	36.899348	-85.699957	853.45	0.00	853.45
34	36.897907	-85.698091	879.85	0.00	879.85
35	36.894406	-85.701052	866.89	0.00	866.89
36	36.895882	-85.703004	847.96	0.00	847.96
37	36.896088	-85.704506	843.32	0.00	843.32
38	36.896860	-85.706073	827.34	0.00	827.34
39	36.896963	-85.706523	828.52	0.00	828.52
40	36.896826	-85.707146	826.93	0.00	826.93
41	36.896894	-85.709163	822.89	0.00	822.89
42	36.896705	-85.709785	822.58	0.00	822.58
43	36.896517	-85.711437	818.78	0.00	818.78
44	36.896225	-85.713068	817.21	0.00	817.21
45	36.894337	-85.713347	853.84	0.00	853.84
46	36.893925	-85.713583	846.02	0.00	846.02
47	36.893874	-85.714098	846.62	0.00	846.62
48	36.893548	-85.714699	853.64	0.00	853.64
49	36.891248	-85.714956	862.92	0.00	862.92
50	36.891557	-85.718025	862.31	0.00	862.31
51	36.893874	-85.718068	824.87	0.00	824.87
52	36.893359	-85.719162	802.38	0.00	802.38
53	36.893273	-85.719484	802.60	0.00	802.60
54	36.893428	-85.720450	803.06	0.00	803.06
55	36.893462	-85.721308	803.09	0.00	803.09
56	36.893599	-85.721994	801.06	0.00	801.06
57	36.892038	-85.722316	801.86	0.00	801.86

58	36.892141	-85.722917	798.20	0.00	798.20
59	36.891592	-85.722960	805.47	0.00	805.47
60	36.892398	-85.724526	807.84	0.00	807.84
61	36.892563	-85.724801	805.92	0.00	805.92

Discrete Observation Receptors

Number	Latitude	Longitude	Ground elevation	Height above ground	Total Elevation
	deg	deg	ft	ft	ft
OP 1	36.905534	-85.706364	897.15	10.00	907.15

PV Array Results

Summary of PV Glare Analysis PV configuration and predicted glare

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced	Data File
	deg	deg	min	min	kWh	
PV array 1	SA tracking	SA tracking	203,346	58,260	-	-

Click the name of the PV array to scroll to its results

PV & Receptor Analysis Results detailed results for each PV array and receptor

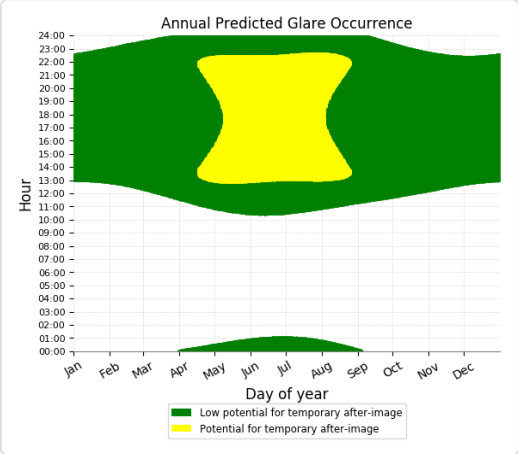
PV array 1 potential temporary after-image

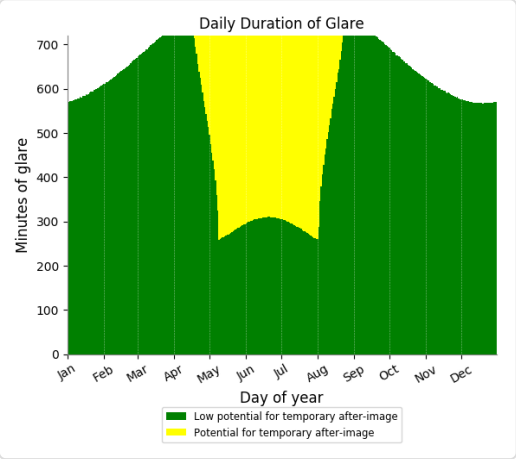
Component	Green glare (min)	Yellow glare (min)
OP: OP 1	203346	58260

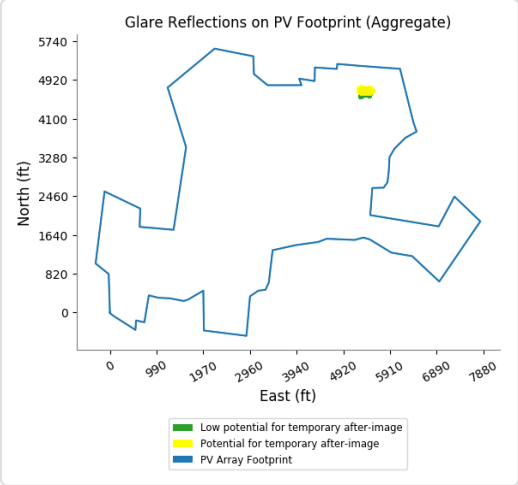
PV array 1 - OP Receptor (OP 1)

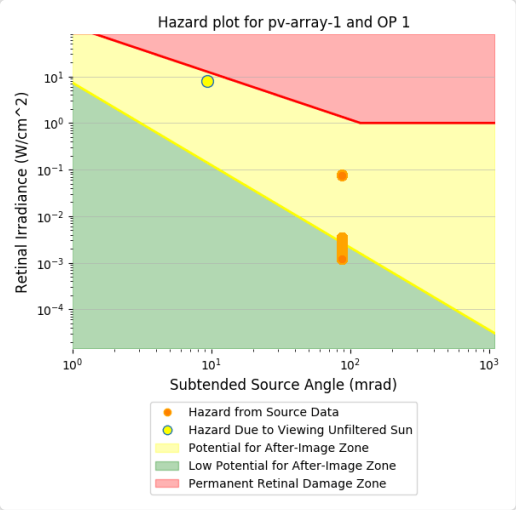
PV array is expected to produce the following glare for receptors at this location:

- 203,346 minutes of "green" glare with low potential to cause temporary after-image.
- 58,260 minutes of "yellow" glare with potential to cause temporary after-image.









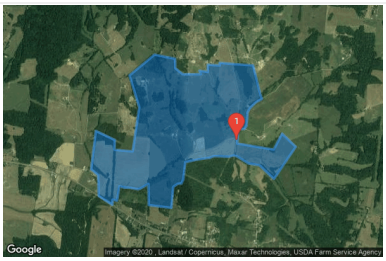
Assumptions

- Times associated with glare are denoted in Standard time. For Daylight Savings, add one hour.
- Glare analyses do not account for physical obstructions between reflectors and receptors. This includes buildings, tree cover and geographic obstructions.
- Detailed system geometry is not rigorously simulated.
- The glare hazard determination relies on several approximations including observer eye characteristics, angle of view, and typical blink response time. Actual values and results may vary.
- The system output calculation is a DNI-based approximation that assumes clear, sunny skies year-round. It should not be used in place of more rigorous modeling methods.
- Several calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.
- The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)
- Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.
- Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
- Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.
- Glare analysis methods used: OP V1, FP V1, Route V1
- Refer to the **Help page** for assumptions and limitations not listed here.

ForgeSolar

Site Configuration: Glover Creek OP on S KY 640

Project site configuration details and results.



Created **Dec. 12, 2019 12:24 p.m.**
Updated **May 29, 2020 11:02 a.m.**
DNI **varies** and peaks at **1,000.0 W/m^2**
Analyze every **1** minute(s)
0.5 ocular transmission coefficient
0.002 m pupil diameter
0.017 m eye focal length
9.3 mrad sun subtended angle
Timezone **UTC0**
Site Configuration ID: 34236.6289

Summary of Results

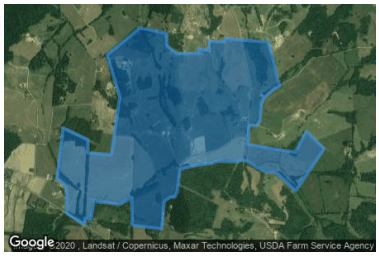
Glare with potential for temporary after-image predicted

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced
	deg	deg	min	min	kWh
PV array 1	SA tracking	SA tracking	70,412	65,008	-

Component Data

PV Array(s)

Name: PV array 1
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0 deg
Tracking axis tilt: 60.0 deg
Tracking axis panel offset: 0.0 deg
Maximum tracking angle: 60.0 deg
Resting angle: 60.0 deg
Rated power: -
Panel material: Smooth glass without AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 6.55 mrad
Approx. area: 24,397,160 sq-ft



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
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6	36.897584	-85.722657	830.67	0.00	830.67
7	36.897413	-85.720211	843.11	0.00	843.11
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9	36.905683	-85.720640	920.17	0.00	920.17
10	36.907948	-85.717250	890.00	0.00	890.00
11	36.907502	-85.714460	902.06	0.00	902.06
12	36.906473	-85.714417	876.70	0.00	876.70
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16	36.906064	-85.710040	882.80	0.00	882.80
17	36.906853	-85.710018	884.81	0.00	884.81
18	36.906767	-85.708431	896.09	0.00	896.09
19	36.907059	-85.708409	897.82	0.00	897.82
20	36.906939	-85.706650	898.77	0.00	898.77
21	36.906776	-85.703881	898.94	0.00	898.94
22	36.903627	-85.702905	872.87	0.00	872.87
23	36.903123	-85.702683	863.98	0.00	863.98
24	36.902763	-85.703498	858.41	0.00	858.41
25	36.902145	-85.704270	853.66	0.00	853.66
26	36.901647	-85.704635	849.47	0.00	849.47
27	36.900755	-85.704700	845.67	0.00	845.67
28	36.900172	-85.704785	845.42	0.00	845.42
29	36.899863	-85.705064	843.36	0.00	843.36
30	36.899846	-85.705880	840.57	0.00	840.57
31	36.898267	-85.706030	831.44	0.00	831.44
32	36.897615	-85.701095	861.91	0.00	861.91
33	36.899348	-85.699957	853.45	0.00	853.45
34	36.897907	-85.698091	879.85	0.00	879.85
35	36.894406	-85.701052	866.89	0.00	866.89
36	36.895882	-85.703004	847.96	0.00	847.96
37	36.896088	-85.704506	843.32	0.00	843.32
38	36.896860	-85.706073	827.34	0.00	827.34
39	36.896963	-85.706523	828.52	0.00	828.52
40	36.896826	-85.707146	826.93	0.00	826.93
41	36.896894	-85.709163	822.89	0.00	822.89
42	36.896705	-85.709785	822.58	0.00	822.58
43	36.896517	-85.711437	818.78	0.00	818.78
44	36.896225	-85.713068	817.21	0.00	817.21
45	36.894337	-85.713347	853.84	0.00	853.84
46	36.893925	-85.713583	846.02	0.00	846.02
47	36.893874	-85.714098	846.62	0.00	846.62
48	36.893548	-85.714699	853.64	0.00	853.64
49	36.891248	-85.714956	862.92	0.00	862.92
50	36.891557	-85.718025	862.31	0.00	862.31
51	36.893874	-85.718068	824.87	0.00	824.87
52	36.893359	-85.719162	802.38	0.00	802.38
53	36.893273	-85.719484	802.60	0.00	802.60
54	36.893428	-85.720450	803.06	0.00	803.06
55	36.893462	-85.721308	803.09	0.00	803.09
56	36.893599	-85.721994	801.06	0.00	801.06
57	36.892038	-85.722316	801.86	0.00	801.86

58	36.892141	-85.722917	798.20	0.00	798.20
59	36.891592	-85.722960	805.47	0.00	805.47
60	36.892398	-85.724526	807.84	0.00	807.84
61	36.892563	-85.724801	805.92	0.00	805.92

Discrete Observation Receptors

Number	Latitude	Longitude	Ground elevation	Height above ground	Total Elevation
	deg	deg	ft	ft	ft
OP 1	36.898607	-85.706108	834.53	0.00	834.53

PV Array Results

Summary of PV Glare Analysis PV configuration and predicted glare

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced	Data File
	deg	deg	min	min	kWh	
PV array 1	SA tracking	SA tracking	70,412	65,008	-	-

Click the name of the PV array to scroll to its results

PV & Receptor Analysis Results detailed results for each PV array and receptor

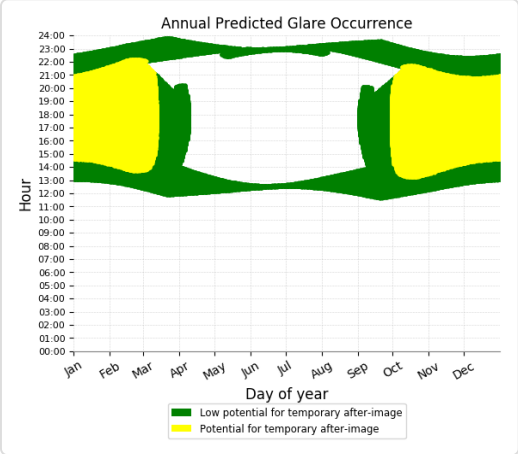
PV array 1 potential temporary after-image

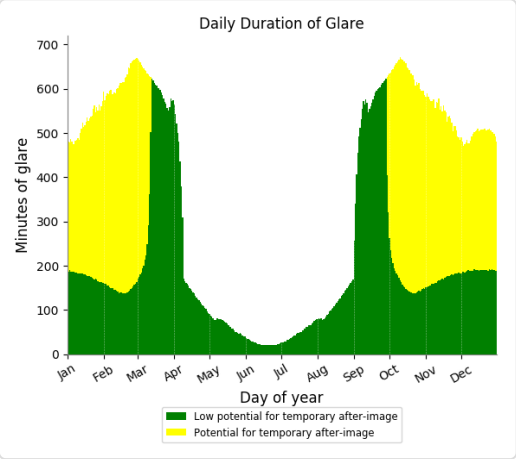
Component	Green glare (min)	Yellow glare (min)
OP: OP 1	70412	65008

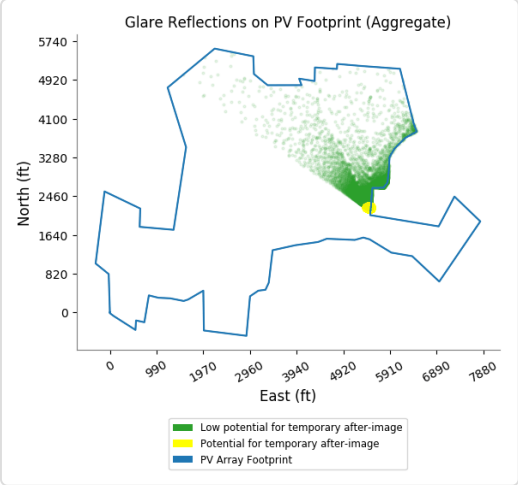
PV array 1 - OP Receptor (OP 1)

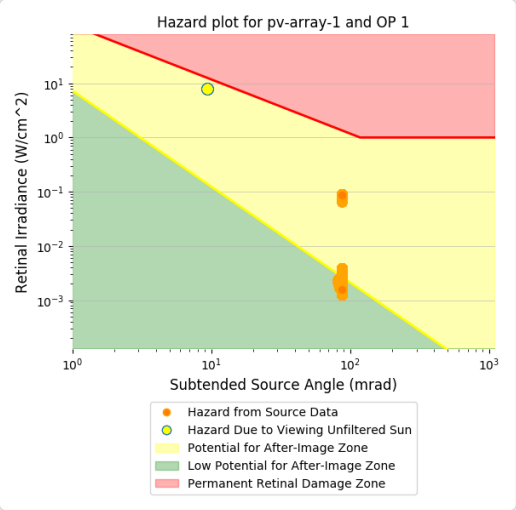
PV array is expected to produce the following glare for receptors at this location:

- 70,412 minutes of "green" glare with low potential to cause temporary after-image.
- 65,008 minutes of "yellow" glare with potential to cause temporary after-image.









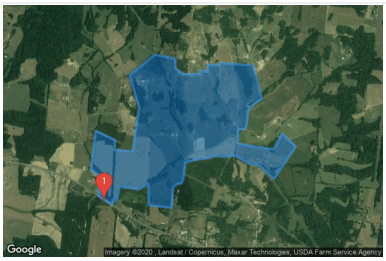
Assumptions

- Times associated with glare are denoted in Standard time. For Daylight Savings, add one hour.
- Glare analyses do not account for physical obstructions between reflectors and receptors. This includes buildings, tree cover and geographic obstructions.
- Detailed system geometry is not rigorously simulated.
- The glare hazard determination relies on several approximations including observer eye characteristics, angle of view, and typical blink response time. Actual values and results may vary.
- The system output calculation is a DNI-based approximation that assumes clear, sunny skies year-round. It should not be used in place of more rigorous modeling methods.
- Several calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.
- The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)
- Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.
- Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
- Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.
- Glare analysis methods used: OP V1, FP V1, Route V1
- Refer to the **Help page** for assumptions and limitations not listed here.

ForgeSolar

Site Configuration: Glover Creek OP on KY 90

Project site configuration details and results.



Created **Dec. 12, 2019 12:24 p.m.**
Updated **May 29, 2020 11:09 a.m.**
DNI **varies** and peaks at **1,000.0 W/m^2**
Analyze every **1** minute(s)
0.5 ocular transmission coefficient
0.002 m pupil diameter
0.017 m eye focal length
9.3 mrad sun subtended angle
Timezone **UTC0**
Site Configuration ID: 34236.6289

Summary of Results

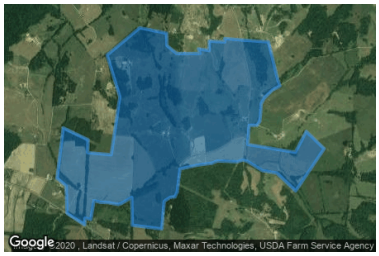
Glare with potential for temporary after-image predicted

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced
	deg	deg	min	min	kWh
PV array 1	SA tracking	SA tracking	69,600	63,938	-

Component Data

PV Array(s)

Name: PV array 1
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0 deg
Tracking axis tilt: 60.0 deg
Tracking axis panel offset: 0.0 deg
Maximum tracking angle: 60.0 deg
Resting angle: 60.0 deg
Rated power: -
Panel material: Smooth glass without AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 6.55 mrad
Approx. area: 24,397,160 sq-ft



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	36.892608	-85.724803	803.59	0.00	803.59
2	36.894839	-85.724889	831.03	0.00	831.03
3	36.895456	-85.725833	828.65	0.00	828.65
4	36.899643	-85.725189	843.11	0.00	843.11
5	36.898648	-85.722614	858.13	0.00	858.13
6	36.897584	-85.722657	830.67	0.00	830.67
7	36.897413	-85.720211	843.11	0.00	843.11
8	36.902217	-85.719310	869.58	0.00	869.58
9	36.905683	-85.720640	920.17	0.00	920.17
10	36.907948	-85.717250	890.00	0.00	890.00
11	36.907502	-85.714460	902.06	0.00	902.06
12	36.906473	-85.714417	876.70	0.00	876.70
13	36.905821	-85.713430	879.04	0.00	879.04
14	36.905823	-85.710984	902.25	0.00	902.25
15	36.906201	-85.711156	903.70	0.00	903.70
16	36.906064	-85.710040	882.80	0.00	882.80
17	36.906853	-85.710018	884.81	0.00	884.81
18	36.906767	-85.708431	896.09	0.00	896.09
19	36.907059	-85.708409	897.82	0.00	897.82
20	36.906939	-85.706650	898.77	0.00	898.77
21	36.906776	-85.703881	898.94	0.00	898.94
22	36.903627	-85.702905	872.87	0.00	872.87
23	36.903123	-85.702683	863.98	0.00	863.98
24	36.902763	-85.703498	858.41	0.00	858.41
25	36.902145	-85.704270	853.66	0.00	853.66
26	36.901647	-85.704635	849.47	0.00	849.47
27	36.900755	-85.704700	845.67	0.00	845.67
28	36.900172	-85.704785	845.42	0.00	845.42
29	36.899863	-85.705064	843.36	0.00	843.36
30	36.899846	-85.705880	840.57	0.00	840.57
31	36.898267	-85.706030	831.44	0.00	831.44
32	36.897615	-85.701095	861.91	0.00	861.91
33	36.899348	-85.699957	853.45	0.00	853.45
34	36.897907	-85.698091	879.85	0.00	879.85
35	36.894406	-85.701052	866.89	0.00	866.89
36	36.895882	-85.703004	847.96	0.00	847.96
37	36.896088	-85.704506	843.32	0.00	843.32
38	36.896860	-85.706073	827.34	0.00	827.34
39	36.896963	-85.706523	828.52	0.00	828.52
40	36.896826	-85.707146	826.93	0.00	826.93
41	36.896894	-85.709163	822.89	0.00	822.89
42	36.896705	-85.709785	822.58	0.00	822.58
43	36.896517	-85.711437	818.78	0.00	818.78
44	36.896225	-85.713068	817.21	0.00	817.21
45	36.894337	-85.713347	853.84	0.00	853.84
46	36.893925	-85.713583	846.02	0.00	846.02
47	36.893874	-85.714098	846.62	0.00	846.62
48	36.893548	-85.714699	853.64	0.00	853.64
49	36.891248	-85.714956	862.92	0.00	862.92
50	36.891557	-85.718025	862.31	0.00	862.31
51	36.893874	-85.718068	824.87	0.00	824.87
52	36.893359	-85.719162	802.38	0.00	802.38
53	36.893273	-85.719484	802.60	0.00	802.60
54	36.893428	-85.720450	803.06	0.00	803.06
55	36.893462	-85.721308	803.09	0.00	803.09
56	36.893599	-85.721994	801.06	0.00	801.06
57	36.892038	-85.722316	801.86	0.00	801.86

58	36.892141	-85.722917	798.20	0.00	798.20
59	36.891592	-85.722960	805.47	0.00	805.47
60	36.892398	-85.724526	807.84	0.00	807.84
61	36.892563	-85.724801	805.92	0.00	805.92

Discrete Observation Receptors

Number	Latitude	Longitude	Ground elevation	Height above ground	Total Elevation
	deg	deg	ft	ft	ft
OP 1	36.892124	-85.724009	806.54	10.00	816.54

PV Array Results

Summary of PV Glare Analysis PV configuration and predicted glare

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced	Data File
	deg	deg	min	min	kWh	
PV array 1	SA tracking	SA tracking	69,600	63,938	-	-

Click the name of the PV array to scroll to its results

PV & Receptor Analysis Results detailed results for each PV array and receptor

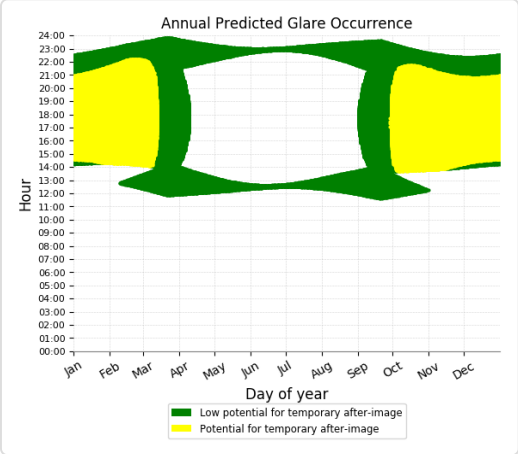
PV array 1 potential temporary after-image

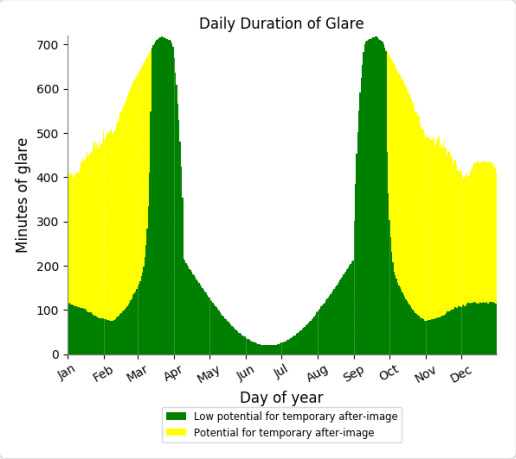
Component	Green glare (min)	Yellow glare (min)
OP: OP 1	69600	63938

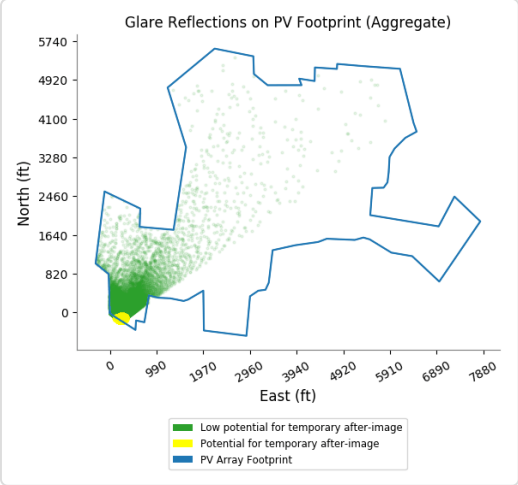
PV array 1 - OP Receptor (OP 1)

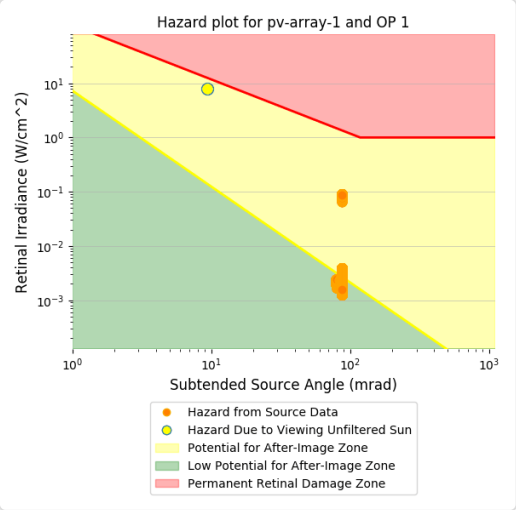
PV array is expected to produce the following glare for receptors at this location:

- 69,600 minutes of "green" glare with low potential to cause temporary after-image.
- 63,938 minutes of "yellow" glare with potential to cause temporary after-image.









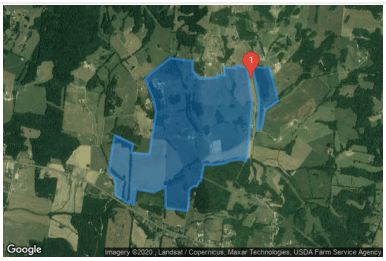
Assumptions

- Times associated with glare are denoted in Standard time. For Daylight Savings, add one hour.
- Glare analyses do not account for physical obstructions between reflectors and receptors. This includes buildings, tree cover and geographic obstructions.
- Detailed system geometry is not rigorously simulated.
- The glare hazard determination relies on several approximations including observer eye characteristics, angle of view, and typical blink response time. Actual values and results may vary.
- The system output calculation is a DNI-based approximation that assumes clear, sunny skies year-round. It should not be used in place of more rigorous modeling methods.
- Several calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.
- The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)
- Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.
- Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
- Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.
- Glare analysis methods used: OP V1, FP V1, Route V1
- Refer to the **Help page** for assumptions and limitations not listed here.

ForgeSolar

Site Configuration: parcels w set backs

Project site configuration details and results.



Created **May 29, 2020 4:23 p.m.**
Updated **June 1, 2020 9:42 a.m.**
DNI **varies** and peaks at **1,000.0 W/m^2**
Analyze every **1** minute(s)
0.5 ocular transmission coefficient
0.002 m pupil diameter
0.017 m eye focal length
9.3 mrad sun subtended angle
Timezone **UTC-6**
Site Configuration ID: 39670.7231

Summary of Results

Glare with low potential for temporary after-image predicted

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced
	deg	deg	min	min	kWh
PV array 1	SA tracking	SA tracking	0	0	-
PV array 2	SA tracking	SA tracking	2,007	0	-

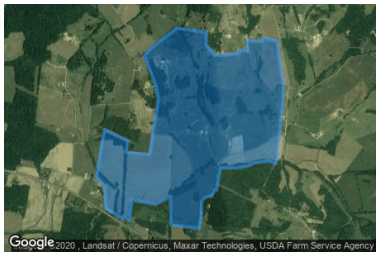
Component Data

PV Array(s)

Name: PV array 1
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0 deg
Tracking axis tilt: 0.0 deg
Tracking axis panel offset: 0.0 deg
Maximum tracking angle: 60.0 deg
Resting angle: 60.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 1,243,447 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	36.900527	-85.705513	841.61	0.00	841.61
2	36.901188	-85.705445	844.47	0.00	844.47
3	36.901767	-85.705368	845.95	0.00	845.95
4	36.902684	-85.705352	867.48	0.00	867.48
5	36.903270	-85.705345	880.63	0.00	880.63
6	36.903686	-85.705417	894.15	0.00	894.15
7	36.905290	-85.705796	893.92	0.00	893.92
8	36.906076	-85.706002	904.70	0.00	904.70
9	36.906903	-85.706206	890.12	0.00	890.12
10	36.906757	-85.703888	898.40	0.00	898.40
11	36.904012	-85.702998	877.81	0.00	877.81
12	36.903180	-85.702751	867.39	0.00	867.39
13	36.902622	-85.703770	857.55	0.00	857.55
14	36.902373	-85.704307	856.14	0.00	856.14
15	36.902236	-85.704446	854.51	0.00	854.51
16	36.902004	-85.704564	851.89	0.00	851.89
17	36.901627	-85.704650	849.43	0.00	849.43
18	36.901181	-85.704758	848.32	0.00	848.32
19	36.900769	-85.704790	844.52	0.00	844.52
20	36.900316	-85.705082	840.67	0.00	840.67
21	36.900163	-85.705077	840.56	0.00	840.56
22	36.900083	-85.705103	840.72	0.00	840.72
23	36.900068	-85.705188	840.43	0.00	840.43
24	36.900060	-85.705554	838.10	0.00	838.10

Name: PV array 2
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0 deg
Tracking axis tilt: 0.0 deg
Tracking axis panel offset: 0.0 deg
Maximum tracking angle: 60.0 deg
Resting angle: 60.0 deg
Rated power: -
Panel material: Smooth glass without AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 6.55 mrad
Approx. area: 20,062,372 sq-ft



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	36.898667	-85.706764	831.33	0.00	831.33
2	36.899139	-85.706689	835.59	0.00	835.59
3	36.901232	-85.706410	850.73	0.00	850.73
4	36.902811	-85.706281	868.94	0.00	868.94
5	36.903360	-85.706313	880.57	0.00	880.57
6	36.903617	-85.706345	882.12	0.00	882.12
7	36.903823	-85.706431	881.55	0.00	881.55
8	36.904218	-85.706506	888.36	0.00	888.36
9	36.905910	-85.706801	907.20	0.00	907.20
10	36.906785	-85.706949	903.22	0.00	903.22
11	36.907066	-85.708384	897.52	0.00	897.52
12	36.906723	-85.708470	895.18	0.00	895.18
13	36.906809	-85.710036	884.61	0.00	884.61
14	36.905942	-85.709940	881.09	0.00	881.09
15	36.906011	-85.710894	900.23	0.00	900.23
16	36.905745	-85.710980	900.96	0.00	900.96
17	36.905599	-85.712665	891.71	0.00	891.71
18	36.905599	-85.713362	881.23	0.00	881.23
19	36.906474	-85.714306	877.81	0.00	877.81
20	36.907512	-85.714274	904.98	0.00	904.98
21	36.907864	-85.717375	894.17	0.00	894.17
22	36.906277	-85.719885	942.95	0.00	942.95
23	36.905582	-85.720733	921.84	0.00	921.84
24	36.903051	-85.719510	882.57	0.00	882.57
25	36.901987	-85.719263	865.50	0.00	865.50
26	36.897371	-85.720164	841.16	0.00	841.16
27	36.897526	-85.722589	830.87	0.00	830.87
28	36.898461	-85.722396	852.67	0.00	852.67
29	36.899413	-85.724842	841.30	0.00	841.30
30	36.898349	-85.725121	829.55	0.00	829.55
31	36.895484	-85.725657	823.49	0.00	823.49
32	36.894789	-85.724842	830.54	0.00	830.54
33	36.892895	-85.724714	799.45	0.00	799.45
34	36.892697	-85.724311	798.44	0.00	798.44
35	36.892032	-85.722959	799.73	0.00	799.73
36	36.892238	-85.722949	799.47	0.00	799.47
37	36.891912	-85.722262	805.34	0.00	805.34
38	36.893577	-85.722005	801.12	0.00	801.12
39	36.893216	-85.719548	804.20	0.00	804.20
40	36.893886	-85.717992	836.38	0.00	836.38
41	36.891526	-85.717971	863.39	0.00	863.39
42	36.891191	-85.715009	868.30	0.00	868.30
43	36.891818	-85.714902	855.28	0.00	855.28
44	36.892384	-85.714806	862.63	0.00	862.63
45	36.892787	-85.714784	861.80	0.00	861.80
46	36.893431	-85.714784	855.61	0.00	855.61
47	36.893688	-85.714559	851.86	0.00	851.86
48	36.893860	-85.714237	847.08	0.00	847.08
49	36.893929	-85.713733	845.93	0.00	845.93
50	36.894255	-85.713464	844.83	0.00	844.83
51	36.894452	-85.713400	839.62	0.00	839.62
52	36.894435	-85.713207	860.47	0.00	860.47
53	36.896254	-85.712821	830.76	0.00	830.76
54	36.896228	-85.711319	898.96	0.00	898.96
55	36.896425	-85.709892	878.92	0.00	878.92
56	36.896674	-85.709323	864.95	0.00	864.95
57	36.896820	-85.707746	840.15	0.00	840.15

58	36.896606	-85.707070	840.50	0.00	840.50
59	36.897060	-85.706931	827.07	0.00	827.07

Discrete Observation Receptors

Number	Latitude	Longitude	Ground elevation	Height above ground	Total Elevation
	deg	deg	ft	ft	ft
OP 1	36.905534	-85.706364	897.15	10.00	907.15

PV Array Results

Summary of PV Glare Analysis PV configuration and predicted glare

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced	Data File
	deg	deg	min	min	kWh	
PV array 1	SA tracking	SA tracking	0	0	-	-
PV array 2	SA tracking	SA tracking	2,007	0	-	-

Click the name of the PV array to scroll to its results

PV & Receptor Analysis Results detailed results for each PV array and receptor

PV array 1 no glare found

Component	Green glare (min)	Yellow glare (min)
OP: OP 1	0	0

No glare found

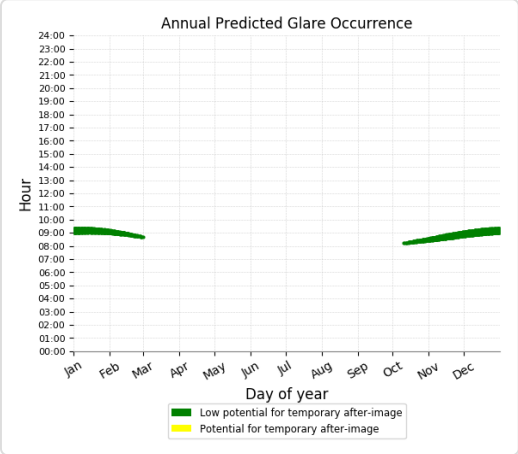
PV array 2 low potential for temporary after-image

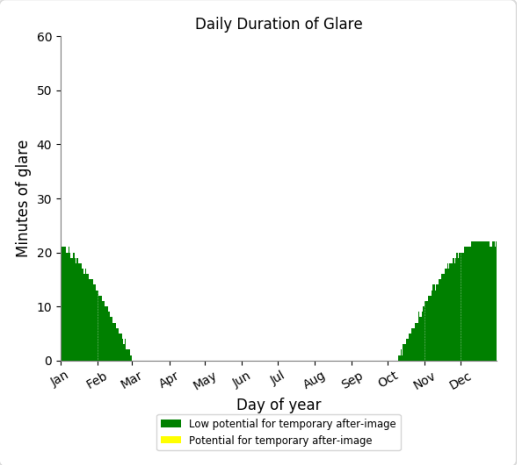
Component	Green glare (min)	Yellow glare (min)
OP: OP 1	2007	0

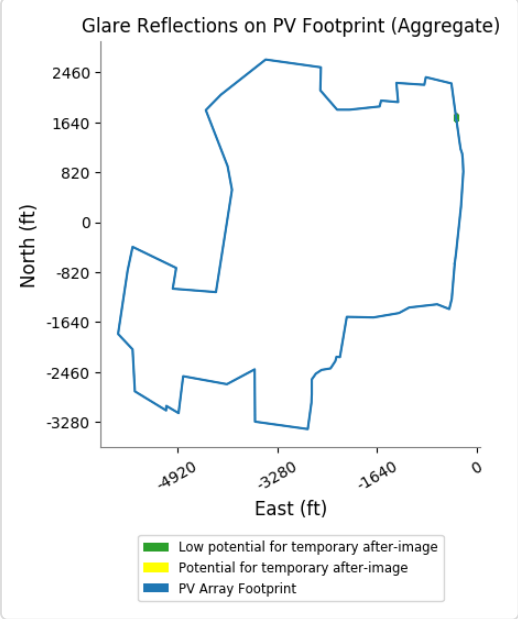
PV array 2 - OP Receptor (OP 1)

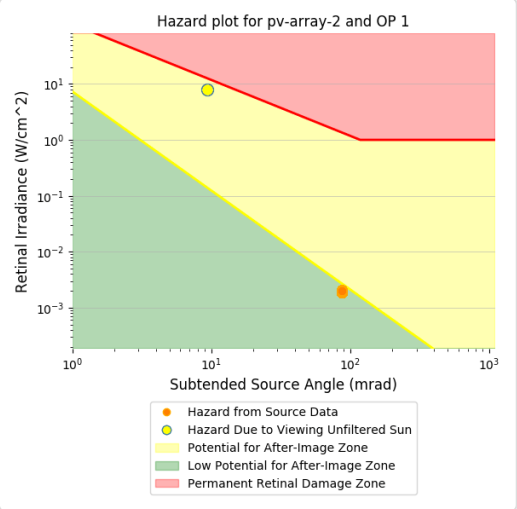
PV array is expected to produce the following glare for receptors at this location:

- 2,007 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.









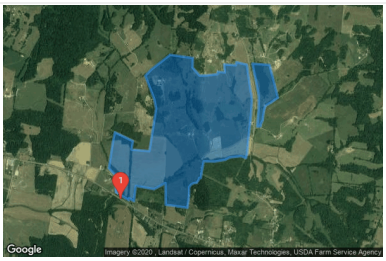
Assumptions

- Times associated with glare are denoted in Standard time. For Daylight Savings, add one hour.
- Glare analyses do not account for physical obstructions between reflectors and receptors. This includes buildings, tree cover and geographic obstructions.
- Detailed system geometry is not rigorously simulated.
- The glare hazard determination relies on several approximations including observer eye characteristics, angle of view, and typical blink response time. Actual values and results may vary.
- The system output calculation is a DNI-based approximation that assumes clear, sunny skies year-round. It should not be used in place of more rigorous modeling methods.
- Several calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.
- The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)
- Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.
- Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
- Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.
- Glare analysis methods used: OP V1, FP V1, Route V1
- Refer to the **Help page** for assumptions and limitations not listed here.

ForgeSolar

Site Configuration: parcels w set backs-temp-2

Project site configuration details and results.



Created **June 1, 2020 9:54 a.m.**
Updated **June 1, 2020 9:55 a.m.**
DNI **varies** and peaks at **1,000.0 W/m^2**
Analyze every **1** minute(s)
0.5 ocular transmission coefficient
0.002 m pupil diameter
0.017 m eye focal length
9.3 mrad sun subtended angle
Timezone **UTC-6**
Site Configuration ID: 39710.7231

Summary of Results No glare predicted!

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced
	deg	deg	min	min	kWh
PV array 1	SA tracking	SA tracking	0	0	-
PV array 2	SA tracking	SA tracking	0	0	-

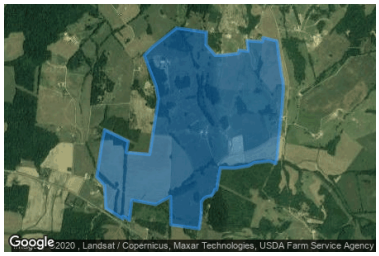
Component Data

PV Array(s)

Name: PV array 1
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0 deg
Tracking axis tilt: 0.0 deg
Tracking axis panel offset: 0.0 deg
Maximum tracking angle: 60.0 deg
Resting angle: 60.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 1,243,447 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	36.900527	-85.705513	841.61	0.00	841.61
2	36.901188	-85.705445	844.47	0.00	844.47
3	36.901767	-85.705368	845.95	0.00	845.95
4	36.902684	-85.705352	867.48	0.00	867.48
5	36.903270	-85.705345	880.63	0.00	880.63
6	36.903686	-85.705417	894.15	0.00	894.15
7	36.905290	-85.705796	893.92	0.00	893.92
8	36.906076	-85.706002	904.70	0.00	904.70
9	36.906903	-85.706206	890.12	0.00	890.12
10	36.906757	-85.703888	898.40	0.00	898.40
11	36.904012	-85.702998	877.81	0.00	877.81
12	36.903180	-85.702751	867.39	0.00	867.39
13	36.902622	-85.703770	857.55	0.00	857.55
14	36.902373	-85.704307	856.14	0.00	856.14
15	36.902236	-85.704446	854.51	0.00	854.51
16	36.902004	-85.704564	851.89	0.00	851.89
17	36.901627	-85.704650	849.43	0.00	849.43
18	36.901181	-85.704758	848.32	0.00	848.32
19	36.900769	-85.704790	844.52	0.00	844.52
20	36.900316	-85.705082	840.67	0.00	840.67
21	36.900163	-85.705077	840.56	0.00	840.56
22	36.900083	-85.705103	840.72	0.00	840.72
23	36.900068	-85.705188	840.43	0.00	840.43
24	36.900060	-85.705554	838.10	0.00	838.10

Name: PV array 2
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0 deg
Tracking axis tilt: 0.0 deg
Tracking axis panel offset: 0.0 deg
Maximum tracking angle: 60.0 deg
Resting angle: 60.0 deg
Rated power: -
Panel material: Smooth glass without AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 6.55 mrad
Approx. area: 20,062,372 sq-ft



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	36.898667	-85.706764	831.33	0.00	831.33
2	36.899139	-85.706689	835.59	0.00	835.59
3	36.901232	-85.706410	850.73	0.00	850.73
4	36.902811	-85.706281	868.94	0.00	868.94
5	36.903360	-85.706313	880.57	0.00	880.57
6	36.903617	-85.706345	882.12	0.00	882.12
7	36.903823	-85.706431	881.55	0.00	881.55
8	36.904218	-85.706506	888.36	0.00	888.36
9	36.905910	-85.706801	907.20	0.00	907.20
10	36.906785	-85.706949	903.22	0.00	903.22
11	36.907066	-85.708384	897.52	0.00	897.52
12	36.906723	-85.708470	895.18	0.00	895.18
13	36.906809	-85.710036	884.61	0.00	884.61
14	36.905942	-85.709940	881.09	0.00	881.09
15	36.906011	-85.710894	900.23	0.00	900.23
16	36.905745	-85.710980	900.96	0.00	900.96
17	36.905599	-85.712665	891.71	0.00	891.71
18	36.905599	-85.713362	881.23	0.00	881.23
19	36.906474	-85.714306	877.81	0.00	877.81
20	36.907512	-85.714274	904.98	0.00	904.98
21	36.907864	-85.717375	894.17	0.00	894.17
22	36.906277	-85.719885	942.95	0.00	942.95
23	36.905582	-85.720733	921.84	0.00	921.84
24	36.903051	-85.719510	882.57	0.00	882.57
25	36.901987	-85.719263	865.50	0.00	865.50
26	36.897371	-85.720164	841.16	0.00	841.16
27	36.897526	-85.722589	830.87	0.00	830.87
28	36.898461	-85.722396	852.67	0.00	852.67
29	36.899413	-85.724842	841.30	0.00	841.30
30	36.898349	-85.725121	829.55	0.00	829.55
31	36.895484	-85.725657	823.49	0.00	823.49
32	36.894789	-85.724842	830.54	0.00	830.54
33	36.892895	-85.724714	799.45	0.00	799.45
34	36.892697	-85.724311	798.44	0.00	798.44
35	36.892032	-85.722959	799.73	0.00	799.73
36	36.892238	-85.722949	799.47	0.00	799.47
37	36.891912	-85.722262	805.34	0.00	805.34
38	36.893577	-85.722005	801.12	0.00	801.12
39	36.893216	-85.719548	804.20	0.00	804.20
40	36.893886	-85.717992	836.38	0.00	836.38
41	36.891526	-85.717971	863.39	0.00	863.39
42	36.891191	-85.715009	868.30	0.00	868.30
43	36.891818	-85.714902	855.28	0.00	855.28
44	36.892384	-85.714806	862.63	0.00	862.63
45	36.892787	-85.714784	861.80	0.00	861.80
46	36.893431	-85.714784	855.61	0.00	855.61
47	36.893688	-85.714559	851.86	0.00	851.86
48	36.893860	-85.714237	847.08	0.00	847.08
49	36.893929	-85.713733	845.93	0.00	845.93
50	36.894255	-85.713464	844.83	0.00	844.83
51	36.894452	-85.713400	839.62	0.00	839.62
52	36.894435	-85.713207	860.47	0.00	860.47
53	36.896254	-85.712821	830.76	0.00	830.76
54	36.896228	-85.711319	898.96	0.00	898.96
55	36.896425	-85.709892	878.92	0.00	878.92
56	36.896674	-85.709323	864.95	0.00	864.95
57	36.896820	-85.707746	840.15	0.00	840.15

58	36.896606	-85.707070	840.50	0.00	840.50
59	36.897060	-85.706931	827.07	0.00	827.07

Discrete Observation Receptors

Number	Latitude	Longitude	Ground elevation	Height above ground	Total Elevation
	deg	deg	ft	ft	ft
OP 1	36.892124	-85.724009	806.54	10.00	816.54

PV Array Results

Summary of PV Glare Analysis PV configuration and predicted glare

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced	Data File
	deg	deg	min	min	kWh	
PV array 1	SA tracking	SA tracking	0	0	-	-
PV array 2	SA tracking	SA tracking	0	0	-	-

Click the name of the PV array to scroll to its results

PV & Receptor Analysis Results detailed results for each PV array and receptor

PV array 1 no glare found

Component	Green glare (min)	Yellow glare (min)
OP: OP 1	0	0

No glare found

PV array 2 no glare found

Component	Green glare (min)	Yellow glare (min)
OP: OP 1	0	0

No glare found

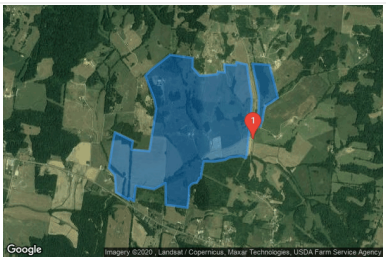
Assumptions

- Times associated with glare are denoted in Standard time. For Daylight Savings, add one hour.
- Glare analyses do not account for physical obstructions between reflectors and receptors. This includes buildings, tree cover and geographic obstructions.
- Detailed system geometry is not rigorously simulated.
- The glare hazard determination relies on several approximations including observer eye characteristics, angle of view, and typical blink response time. Actual values and results may vary.
- The system output calculation is a DNI-based approximation that assumes clear, sunny skies year-round. It should not be used in place of more rigorous modeling methods.
- Several calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.
- The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)
- Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.
- Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
- Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.
- Glare analysis methods used: OP V1, FP V1, Route V1
- Refer to the **Help page** for assumptions and limitations not listed here.

ForgeSolar

Site Configuration: parcels w set backs-temp-2

Project site configuration details and results.



Created **June 1, 2020 9:50 a.m.**
Updated **June 1, 2020 9:51 a.m.**
DNI **varies** and peaks at **1,000.0 W/m^2**
Analyze every **1** minute(s)
0.5 ocular transmission coefficient
0.002 m pupil diameter
0.017 m eye focal length
9.3 mrad sun subtended angle
Timezone **UTC-6**
Site Configuration ID: 39709.7231

Summary of Results No glare predicted!

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced
	deg	deg	min	min	kWh
PV array 1	SA tracking	SA tracking	0	0	-
PV array 2	SA tracking	SA tracking	0	0	-

Component Data

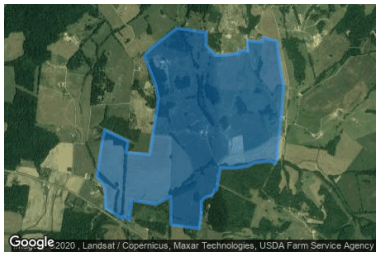
PV Array(s)

Name: PV array 1
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0 deg
Tracking axis tilt: 0.0 deg
Tracking axis panel offset: 0.0 deg
Maximum tracking angle: 60.0 deg
Resting angle: 60.0 deg
Rated power: -
Panel material: Smooth glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 8.43 mrad
Approx. area: 1,243,447 sq-ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	36.900527	-85.705513	841.61	0.00	841.61
2	36.901188	-85.705445	844.47	0.00	844.47
3	36.901767	-85.705368	845.95	0.00	845.95
4	36.902684	-85.705352	867.48	0.00	867.48
5	36.903270	-85.705345	880.63	0.00	880.63
6	36.903686	-85.705417	894.15	0.00	894.15
7	36.905290	-85.705796	893.92	0.00	893.92
8	36.906076	-85.706002	904.70	0.00	904.70
9	36.906903	-85.706206	890.12	0.00	890.12
10	36.906757	-85.703888	898.40	0.00	898.40
11	36.904012	-85.702998	877.81	0.00	877.81
12	36.903180	-85.702751	867.39	0.00	867.39
13	36.902622	-85.703770	857.55	0.00	857.55
14	36.902373	-85.704307	856.14	0.00	856.14
15	36.902236	-85.704446	854.51	0.00	854.51
16	36.902004	-85.704564	851.89	0.00	851.89
17	36.901627	-85.704650	849.43	0.00	849.43
18	36.901181	-85.704758	848.32	0.00	848.32
19	36.900769	-85.704790	844.52	0.00	844.52
20	36.900316	-85.705082	840.67	0.00	840.67
21	36.900163	-85.705077	840.56	0.00	840.56
22	36.900083	-85.705103	840.72	0.00	840.72
23	36.900068	-85.705188	840.43	0.00	840.43
24	36.900060	-85.705554	838.10	0.00	838.10

Exhibit M

Name: PV array 2
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0 deg
Tracking axis tilt: 0.0 deg
Tracking axis panel offset: 0.0 deg
Maximum tracking angle: 60.0 deg
Resting angle: 60.0 deg
Rated power: -
Panel material: Smooth glass without AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 6.55 mrad
Approx. area: 20,062,372 sq-ft



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	36.898667	-85.706764	831.33	0.00	831.33
2	36.899139	-85.706689	835.59	0.00	835.59
3	36.901232	-85.706410	850.73	0.00	850.73
4	36.902811	-85.706281	868.94	0.00	868.94
5	36.903360	-85.706313	880.57	0.00	880.57
6	36.903617	-85.706345	882.12	0.00	882.12
7	36.903823	-85.706431	881.55	0.00	881.55
8	36.904218	-85.706506	888.36	0.00	888.36
9	36.905910	-85.706801	907.20	0.00	907.20
10	36.906785	-85.706949	903.22	0.00	903.22
11	36.907066	-85.708384	897.52	0.00	897.52
12	36.906723	-85.708470	895.18	0.00	895.18
13	36.906809	-85.710036	884.61	0.00	884.61
14	36.905942	-85.709940	881.09	0.00	881.09
15	36.906011	-85.710894	900.23	0.00	900.23
16	36.905745	-85.710980	900.96	0.00	900.96
17	36.905599	-85.712665	891.71	0.00	891.71
18	36.905599	-85.713362	881.23	0.00	881.23
19	36.906474	-85.714306	877.81	0.00	877.81
20	36.907512	-85.714274	904.98	0.00	904.98
21	36.907864	-85.717375	894.17	0.00	894.17
22	36.906277	-85.719885	942.95	0.00	942.95
23	36.905582	-85.720733	921.84	0.00	921.84
24	36.903051	-85.719510	882.57	0.00	882.57
25	36.901987	-85.719263	865.50	0.00	865.50
26	36.897371	-85.720164	841.16	0.00	841.16
27	36.897526	-85.722589	830.87	0.00	830.87
28	36.898461	-85.722396	852.67	0.00	852.67
29	36.899413	-85.724842	841.30	0.00	841.30
30	36.898349	-85.725121	829.55	0.00	829.55
31	36.895484	-85.725657	823.49	0.00	823.49
32	36.894789	-85.724842	830.54	0.00	830.54
33	36.892895	-85.724714	799.45	0.00	799.45
34	36.892697	-85.724311	798.44	0.00	798.44
35	36.892032	-85.722959	799.73	0.00	799.73
36	36.892238	-85.722949	799.47	0.00	799.47
37	36.891912	-85.722262	805.34	0.00	805.34
38	36.893577	-85.722005	801.12	0.00	801.12
39	36.893216	-85.719548	804.20	0.00	804.20
40	36.893886	-85.717992	836.38	0.00	836.38
41	36.891526	-85.717971	863.39	0.00	863.39
42	36.891191	-85.715009	868.30	0.00	868.30
43	36.891818	-85.714902	855.28	0.00	855.28
44	36.892384	-85.714806	862.63	0.00	862.63
45	36.892787	-85.714784	861.80	0.00	861.80
46	36.893431	-85.714784	855.61	0.00	855.61
47	36.893688	-85.714559	851.86	0.00	851.86
48	36.893860	-85.714237	847.08	0.00	847.08
49	36.893929	-85.713733	845.93	0.00	845.93
50	36.894255	-85.713464	844.83	0.00	844.83
51	36.894452	-85.713400	839.62	0.00	839.62
52	36.894435	-85.713207	860.47	0.00	860.47
53	36.896254	-85.712821	830.76	0.00	830.76
54	36.896228	-85.711319	898.96	0.00	898.96
55	36.896425	-85.709892	878.92	0.00	878.92
56	36.896674	-85.709323	864.95	0.00	864.95
57	36.896820	-85.707746	840.15	0.00	840.15

58	36.896606	-85.707070	840.50	0.00	840.50
59	36.897060	-85.706931	827.07	0.00	827.07

Discrete Observation Receptors

Number	Latitude	Longitude	Ground elevation	Height above ground	Total Elevation
	deg	deg	ft	ft	ft
OP 1	36.898607	-85.706110	834.53	10.00	844.53

PV Array Results

Summary of PV Glare Analysis PV configuration and predicted glare

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced	Data File
	deg	deg	min	min	kWh	
PV array 1	SA tracking	SA tracking	0	0	-	-
PV array 2	SA tracking	SA tracking	0	0	-	-

Click the name of the PV array to scroll to its results

PV & Receptor Analysis Results detailed results for each PV array and receptor

PV array 1 no glare found

Component	Green glare (min)	Yellow glare (min)
OP: OP 1	0	0

No glare found

PV array 2 no glare found

Component	Green glare (min)	Yellow glare (min)
OP: OP 1	0	0

No glare found

Assumptions

- Times associated with glare are denoted in Standard time. For Daylight Savings, add one hour.
- Glare analyses do not account for physical obstructions between reflectors and receptors. This includes buildings, tree cover and geographic obstructions.
- Detailed system geometry is not rigorously simulated.
- The glare hazard determination relies on several approximations including observer eye characteristics, angle of view, and typical blink response time. Actual values and results may vary.
- The system output calculation is a DNI-based approximation that assumes clear, sunny skies year-round. It should not be used in place of more rigorous modeling methods.
- Several calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.
- The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)
- Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.
- Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
- Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.
- Glare analysis methods used: OP V1, FP V1, Route V1
- Refer to the **Help page** for assumptions and limitations not listed here.

Exhibit N

2. Compatibility with Scenic Surroundings

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

COMPLIANCE:

Please refer to Sections III-VI from Attachment A, which address appropriate setbacks, topography, harmony of use, and compatibility in detail.

An excerpt from Section IV, page 103, reads as follows:

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

Sections of the Project that adjoin roadways and other properties will have a vegetative buffer planted if one does not already exist. This buffer will consist of two staggered rows of evergreen shrubs, approximately 15 feet wide and at least three feet in height at time of planting. See the site plan, Attachment E, for the planned locations of the buffer.