

Appendix E

Glare Analysis Memorandum

MEMO

TO	Stephanie Lauer Senior Director of Permitting, Lands, and GIS 174 Power Global, LLC
FROM	Chris Noddings, Project Manager Coen Puckett, Consultant, Scientist Ian Todd, Partner-in-Charge Ben Sussman, Technical Consulting Director
DATE	25 November 2025
REFERENCE	Bonanza Peak Glare Memo
SUBJECT	Bonanza Peak Energy Project - Glare Analysis Memorandum

1. INTRODUCTION

Bonanza Peak Solar, LLC, a wholly owned subsidiary of 174 Power Global, LLC, which is a wholly owned subsidiary of Hanwha Energy USA Holdings Corp. (Applicant) requests a Renewable Energy Permit (REP) from Inyo County, California to construct, own, operate, and maintain a utility scale solar photovoltaic (PV) energy generating facility on private lands. The requested term for the REP is 50 years.

The Bonanza Peak Energy Project (Project) would be located in the Charleston View Solar Energy Development Area (SEDA) in southeastern Inyo County, adjacent to the Nevada state line just north of Old Spanish Trail Highway (Figures 1 and 2).

The solar generation facility, including the PV arrays, substation, and other electrical equipment, would be within a 3,382-acre Project Area with a Developed Area of no greater than 2,400 acres, as dictated by the Inyo County Renewable Energy General Plan Amendment (REGPA; Inyo County 2015).¹ The Project has a planned net generating capacity of up to 500 megawatts alternating current.

The PV electrical generation facility includes installation of fencing, access roads, PV modules, single axis tracker racking, inverters, batteries, electrical distribution equipment, overhead and underground power lines, substation, interconnection switchyard, and an overhead transmission line racking system. While the generation

¹ Inyo County. 2015. Inyo County Renewable Energy General Plan Amendment, Final Errata to the Final Program Environmental Report. Final REGPA as Adopted by the Board Of Supervisors Public Hearing 24 March 2015.

tie-line corridor will continue into Nevada to the northeast, only the portion of the Project within California is considered within this scope.

Construction is anticipated to begin as soon as January 2027. The Project may be built in one or more phases within an approximately 18-month construction period.

In support of this process, ERM has prepared this memorandum summarizing the methodologies utilized and results of the glare analysis. Glare analysis documentation from the industry-standard ForgeSolar online glare analysis tool is provided in Appendix A.

2. PROJECT AND SITE DESCRIPTION

The Project's PV panels will be mounted on single-axis trackers with a tracking angle range of motion of +/-60 degrees. The tracking axes are aligned on an azimuth of 180 degrees in the California State Plane Coordinate System.² The average height of center of the PV panels above ground will be approximately 4.9 feet (1.5 meters). The ground coverage ratio (GCR) of the PV panels will be 0.34 (34 percent). The PV panels will contain smooth glass with an anti-reflective coating. The PV panel tracking system will implement a shade- and slope-aware backtracking strategy with the shallowest possible angle of east/west rotation during backtracking of 5 degrees.

The proposed PV array locations are on predominantly flat, arid, sparsely vegetated, open land with a very slight west-facing grade. The Old Spanish Trail Highway (Tecopa Road in Nevada) is approximately 0.25 miles south of the Project boundary. Elevations of the PV array locations range from 2,560 feet to 2,660 feet above mean sea level. Existing development and disturbed areas within the Developed Area include dirt roads and abandoned buildings. A small amount of commercial and residential zoning is present directly south of the Project Area in the community of Charleston View.

3. VIEWPOINT SUMMARY AND DISCUSSION

ERM identified a representative sample of potential viewpoints within a 1-mile radius of the proposed Project. Viewpoints are locations from which the Project may be visible to human receptors, such as residents, motorists, pilots, recreationists, and tourists. Such viewers may be sensitive to potential glare caused by the PV panels. ERM identified these viewpoints, referred to as "receptors" in the glare analysis results (Appendix A), through review of aerial imagery, topographic maps, and other publicly available online mapping resources.

² North American Datum of 1983 (NAD 83) (2011), StatePlane California IV FIPS 0404 (US Feet).

Based on review of the Federal Aviation Administration (FAA) database,³ aeronautical charts, aerial photos, and a Google search, ERM identified the private-use-only Caas Airstrip (NV98), an 1800-foot gravel/dirt airstrip in Pahrump, Nevada, approximately 9.6 miles north of the Developed Area. No other aircraft facilities were identified within 10 miles of the Project. The Hidden Hills Landing Strip shown on the topographic map (Figure 2), approximately 1.3 miles northeast of the Project, does not appear on current aeronautical charts, nor is it listed in airport databases, including the FAA database. Given these factors, no flight approach paths for the Hidden Hills facility were included in the glare analysis.

ERM identified 12 stationary locations to serve as representative viewpoints for the glare analysis. These viewpoints are identified using the abbreviation “OP” (observation point) and are numbered sequentially—OP 1 through OP 12 (Figures 1 and 2). OP 1 is located in the central courtyard of the Saint Therese Mission Catholic Church, 0.9-miles southeast of the nearest PV array. The remaining viewpoints, OP 2 through OP 12, represent a sample of residences and businesses along the Old Spanish Trail Highway corridor in the Charleston View community. ERM also included a segment of the Old Spanish Trail Highway to evaluate whether glare could potentially be observed by motorists traveling this road (Figures 1 and 2).

4. GLARE ANALYSIS

This glare analysis is based on design parameters for single-axis trackers, as described in Section 2. It is important to note that glare would not occur in areas where line-of-sight views of solar panels are screened by topography, structures, or vegetation. Therefore, locations where glare may occur are limited to areas with direct views of the proposed solar panels. Potential visibility could change over time due to planting or removal of vegetation or construction or removal of structures. The ForgeSolar tool does not, by default, consider the screening effects of vegetation, structures, or topographic features between a PV array and the identified viewpoints.

4.1 BACKGROUND

PV panels are designed to absorb rather than reflect sunlight to maximize energy capture. Many PV panels utilize textured glass and/or have anti-reflective coatings to further minimize reflectivity. For this Project, Bonanza Peak Solar has selected PV panels that contain smooth glass with an anti-reflective coating. ERM included this parameter in the glare analysis.

PV solar projects do not typically cause harmful or nuisance levels of glare, defined as a continuous source of bright light that may be visible to nearby residents, motorists, or pilots. The absorbing, rather than reflecting, nature of PV technology, in conjunction

³ Federal Aviation Administration. Circle Search for Airports. Available online <https://oeaaa.faa.gov/oeaaa/external/searchAction.jsp?action=showCircleSearchAirportsForm>. Accessed 28 February 2025.

with proper site planning and design, has allowed PV panels to be commonly and safely installed on airport properties nationwide.⁴

The amount of light reflected from solar panels depends on several factors, including the amount of sunlight hitting the panel surface, the surface's reflectivity (based on variables such as the presence of textured glass and/or anti-reflective coatings), the geographic location, time of year, weather conditions, and solar panel orientation. These factors affect the angle of incidence of the sun relative to sensitive viewers, and the amount of glare experienced.⁴ With respect to glare, angle of incidence is the angle at which light deviates from perpendicular to a surface. The angle of incidence changes as the sun moves across the sky and is generally lowest at solar noon (when the sun is at its highest point above the horizon and light is reflected toward the sky) and highest at dawn and dusk (when the sun is low in the sky and light is reflected from a high angle of incidence in the opposite direction).

4.2 METHODOLOGY

ERM used the industry standard ForgeSolar GlareGauge⁵ tool to assess potential glare and ocular impact at the 12 viewpoints and along the road segment as shown on Figures 1 and 2. The tool calculates ocular impact based on anticipated levels of retinal irradiance (amount of light received by the retina) and the subtended angle (size and distance) of the glare source. The ForgeSolar tool uses three categories to report potential ocular hazards ranging from retinal burns to temporary after-image (defined as a visual phenomenon in which glare persists in the viewer's vision, even after looking away from the source). These categories include:

- "Green" ratings indicate a low potential to cause after-image (flash blindness);
- "Yellow" ratings indicate the potential to cause temporary after-image; and
- "Red" ratings indicate potential to cause retinal burn and permanent eye damage.⁶

When simulating glare, the ForgeSolar tool modifies the vertex elevations of a PV array footprint so that all points of the PV array reside on a single planar surface. The ForgeSolar tool also may convert PV array footprints with large concavities into a convex shape by filling in these concavities. Therefore, to enhance the accuracy of the glare analysis (by preventing the flattening of hills and reducing the presence of large concavities), ERM sub-divided the PV array area into a total of three sections (labeled PV 01 through PV 03) as shown on Figures 1 and 2.

⁴ Federal Aviation Administration. 2018. *Technical Guidance for Evaluating Selected Solar Technologies on Airports*. Version 1.1, April 2018. Available online <https://www.faa.gov/sites/faa.gov/files/airports/environmental/FAA-Airport-Solar-Guide-2018.pdf>.

⁵ ForgeSolar Glare Analysis tool. Available online <https://www.forgesolar.com/>. Accessed 12 March 2025.

⁶ ForgeSolar. Fundamentals: About Glint and Glare. Available online <https://www.forgesolar.com/help/#glare>. Accessed 12 March 2025.

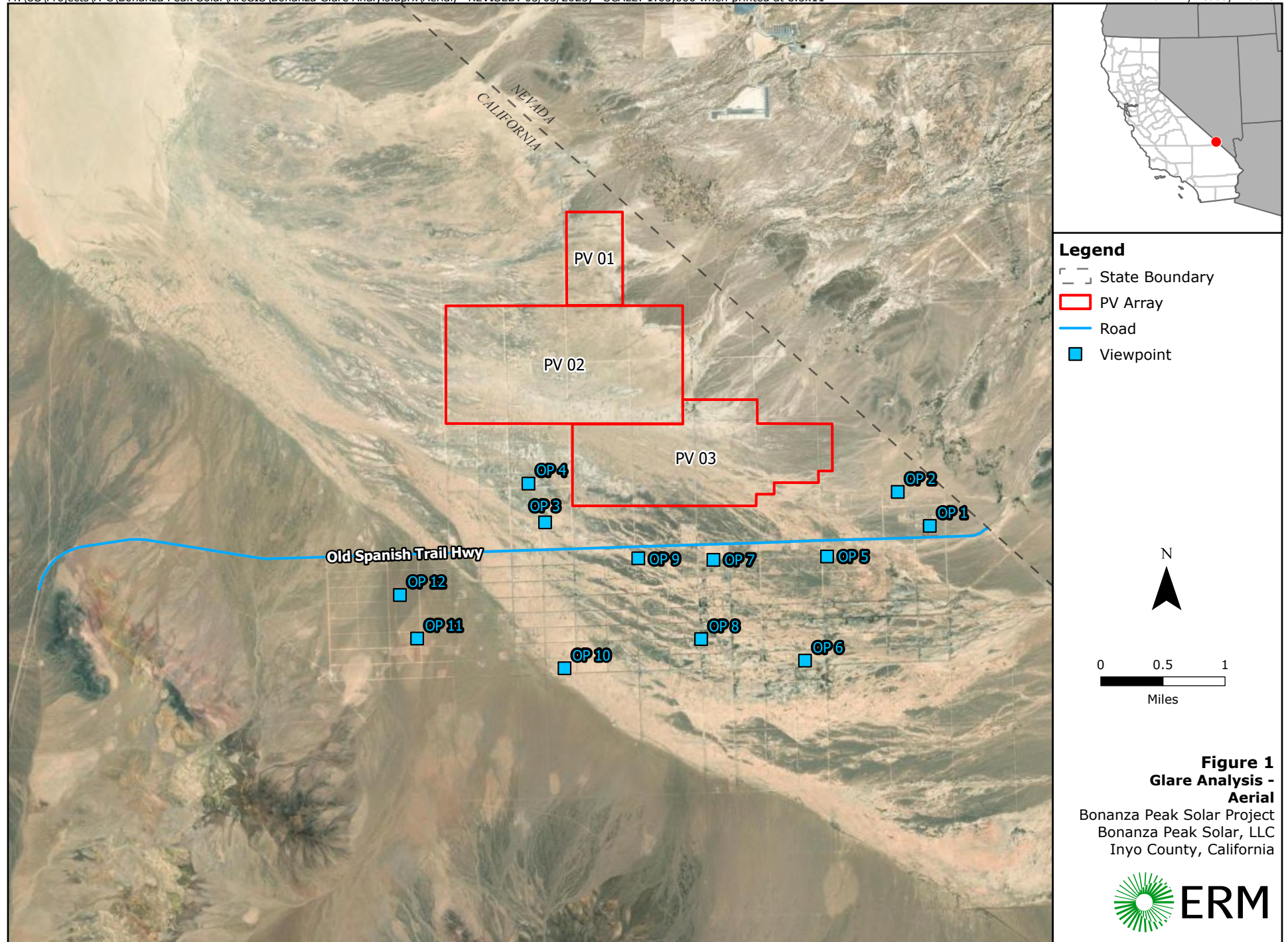
The ForgeSolar tool considers the orientation of PV panels, sun angles throughout the day, and the slope of the PV array, based on the underlying topography and height above ground of the PV panels. Analysis of potential glare observed from stationary viewpoints (OP 1, OP 2, etc.) is based on a 360-degree field of view. By comparison, analysis of glare along the road segment is calculated using a 100-degree field of view (50 degrees to the left and right) centered on the direction of travel (in both directions) along the route. This default value is based on FAA research, which determined that the impact of glare beyond a 100-degree field of view is mitigated.⁷

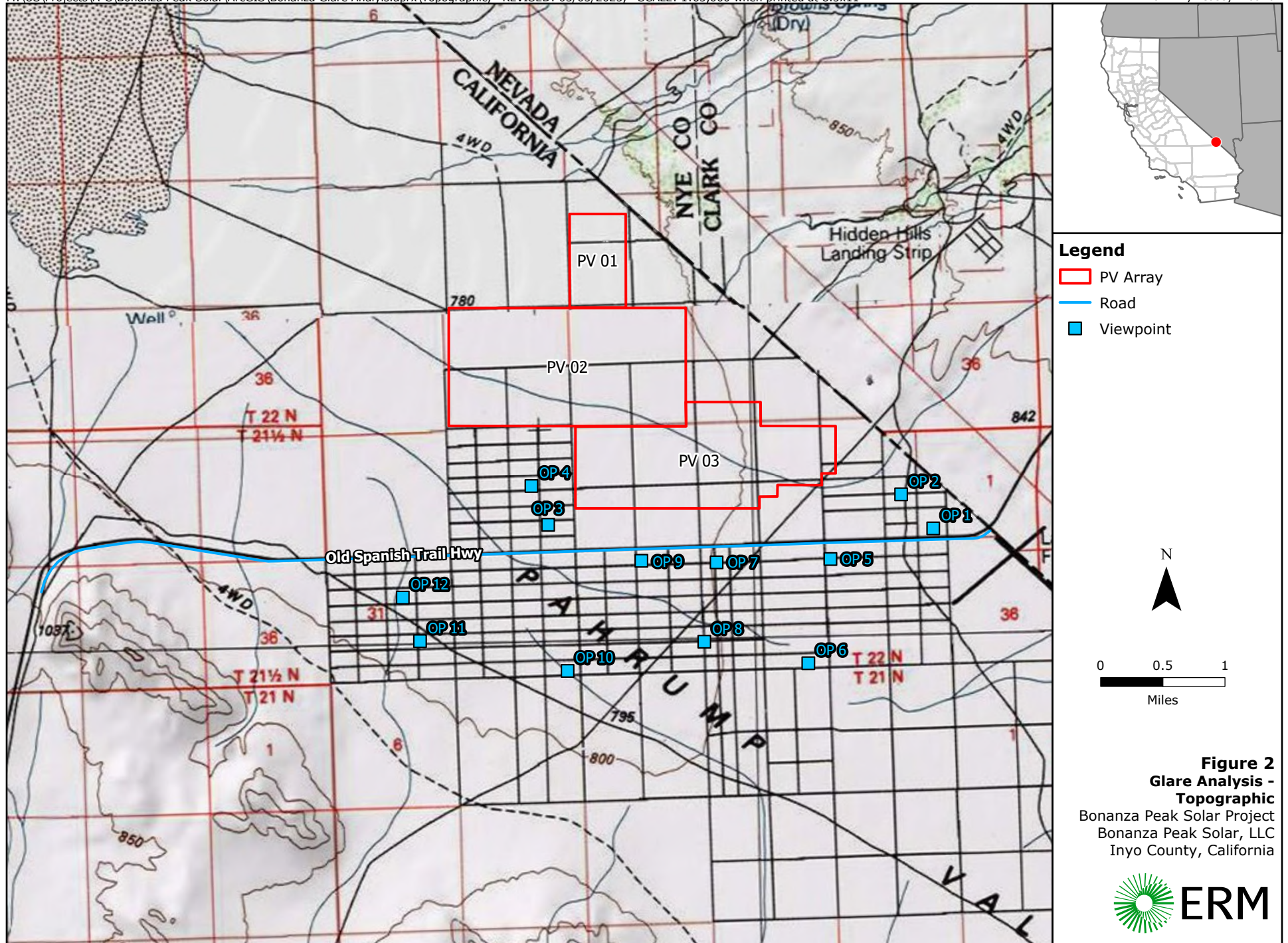
4.3 RESULTS

As documented in Appendix A, the glare analysis results predict the Project will not generate glare of any category (green, yellow, or red) at the 12 viewpoints (OP 1 through OP 12) or along the identified segment of Old Spanish Trail Highway. This finding indicates that the Project, as currently designed, will not require modifications or visual buffers to minimize or limit glare.

⁷ Rogers, J. A., et al. 2015. "Evaluation of Glare as a Hazard for General Aviation Pilots on Final Approach." Federal Aviation Administration, Office of Aerospace Medicine. Report No. DOT/FAA/AM-15/12. Available online https://www.faa.gov/sites/faa.gov/files/data_research/research/med_humanfacs/oamtechreports/201512.pdf.

FIGURES





ATTACHMENT A FORGESOLAR GLARE ANALYSIS RESULTS

FORGESOLAR GLARE ANALYSIS

Project: **Bonanza Peak Solar Project**

Proposed 500MWac PV energy generating facility in Inyo County, California

Site configuration: **Bonanza Updated Site Config**

Client: Bonanza Peak Solar, LLC

Created 14 Nov, 2025

Updated 20 Nov, 2025

Time-step 1 minute

Timezone offset UTC-8

Minimum sun altitude 0.0 deg

DNI peaks at 1,000.0 W/m²

Category 100 MW to 1 GW

Site ID 164704.24151

Ocular transmission coefficient 0.5

Pupil diameter 0.002 m

Eye focal length 0.017 m

Sun subtended angle 9.3 mrad

PV analysis methodology V2



Summary of Results No glare predicted

PV Array	Tilt °	Orient °	Annual Green Glare		Annual Yellow Glare		Energy kWh
			min	hr	min	hr	
PV 01	SA tracking	SA tracking	0	0.0	0	0.0	-
PV 02	SA tracking	SA tracking	0	0.0	0	0.0	-
PV 03	SA tracking	SA tracking	0	0.0	0	0.0	-

Total glare received by each receptor; may include duplicate times of glare from multiple reflective surfaces.

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Old Spanish Trail Hwy	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0
OP 12	0	0.0	0	0.0

Component Data

PV Arrays

Name: PV 01

Axis tracking: Single-axis rotation

Backtracking: Shade-slope

Tracking axis orientation: 180.0°

Max tracking angle: 60.0°

Resting angle: 5.0°

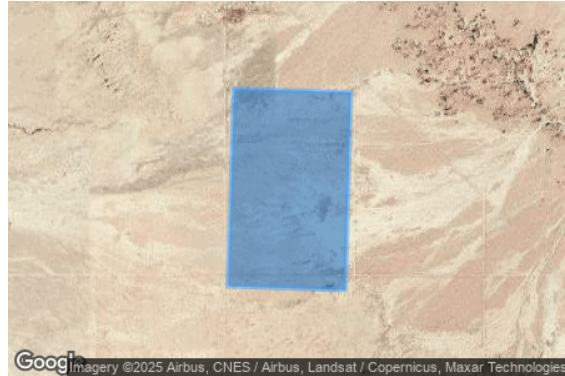
Ground Coverage Ratio: 0.34

Rated power: -

Panel material: Smooth glass with AR coating

Reflectivity: Vary with sun

Slope error: correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	36.011026	-115.908670	2603.41	4.90	2608.31
2	36.011225	-115.916706	2590.19	4.90	2595.09
3	36.000293	-115.917114	2585.91	4.90	2590.81
4	36.000088	-115.909055	2600.46	4.90	2605.36

Name: PV 02

Axis tracking: Single-axis rotation

Backtracking: Shade-slope

Tracking axis orientation: 180.0°

Max tracking angle: 60.0°

Resting angle: 5.0°

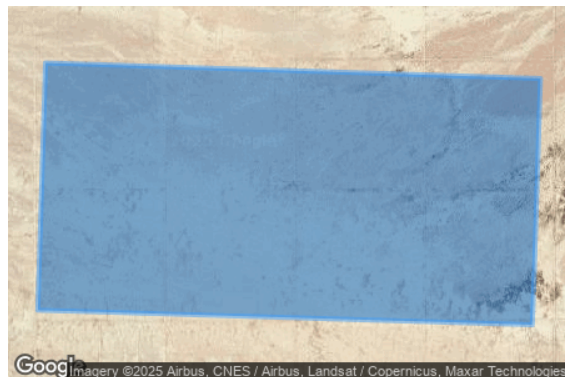
Ground Coverage Ratio: 0.34

Rated power: -

Panel material: Smooth glass with AR coating

Reflectivity: Vary with sun

Slope error: correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	36.000711	-115.934468	2559.19	4.90	2564.09
2	35.999846	-115.900451	2618.88	4.90	2623.78
3	35.988876	-115.900882	2597.36	4.90	2602.26
4	35.986163	-115.901017	2598.33	4.90	2603.23
5	35.986977	-115.935001	2567.93	4.90	2572.83

Name: PV 03

Axis tracking: Single-axis rotation

Backtracking: Shade-slope

Tracking axis orientation: 180.0°

Max tracking angle: 60.0°

Resting angle: 5.0°

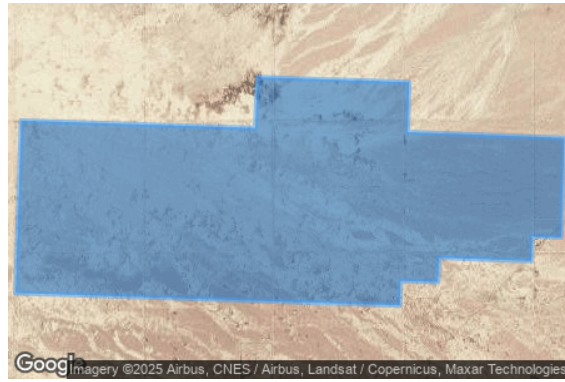
Ground Coverage Ratio: 0.34

Rated power: -

Panel material: Smooth glass with AR coating

Reflectivity: Vary with sun

Slope error: correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	35.986449	-115.916831	2582.75	4.90	2587.65
2	35.986042	-115.900745	2598.54	4.90	2603.44
3	35.988861	-115.900580	2600.30	4.90	2605.20
4	35.988579	-115.890171	2617.17	4.90	2622.07
5	35.985819	-115.890259	2611.18	4.90	2616.08
6	35.985491	-115.879512	2638.20	4.90	2643.10
7	35.979986	-115.879714	2636.98	4.90	2641.88
8	35.980041	-115.881722	2630.81	4.90	2635.71
9	35.978677	-115.881758	2630.24	4.90	2635.14
10	35.978857	-115.888128	2618.19	4.90	2623.09
11	35.977513	-115.888187	2617.88	4.90	2622.78
12	35.977576	-115.890757	2612.16	4.90	2617.06
13	35.976215	-115.890811	2613.95	4.90	2618.85
14	35.976899	-115.917203	2586.27	4.90	2591.17

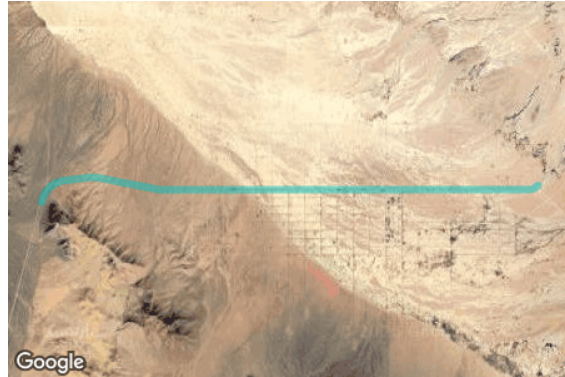
Route Receptors

Name: Old Spanish Trail Hwy

Path type: Two-way

Azimuthal view angle: 50.0°

Downward view angle: 90.0°



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	35.972804	-115.857679	2688.49	7.00	2695.49
2	35.972384	-115.858404	2684.25	7.00	2691.25
3	35.972082	-115.859084	2682.71	7.00	2689.71
4	35.971932	-115.859699	2681.16	7.00	2688.16
5	35.971891	-115.860472	2677.91	7.00	2684.91
6	35.971890	-115.866001	2666.42	7.00	2673.42
7	35.971908	-115.881613	2633.73	7.00	2640.73
8	35.971883	-115.899484	2606.41	7.00	2613.41
9	35.971873	-115.917295	2588.89	7.00	2595.89
10	35.971874	-115.935158	2575.42	7.00	2582.42
11	35.971855	-115.952766	2583.75	7.00	2590.75
12	35.971850	-115.960999	2611.07	7.00	2618.07
13	35.971941	-115.962226	2612.36	7.00	2619.36
14	35.974524	-115.978703	2640.65	7.00	2647.65
15	35.974633	-115.980553	2653.84	7.00	2660.84
16	35.973912	-115.987987	2713.55	7.00	2720.55
17	35.973699	-115.989087	2712.69	7.00	2719.69
18	35.973285	-115.990356	2718.82	7.00	2725.82
19	35.972678	-115.991552	2724.36	7.00	2731.36
20	35.971627	-115.992818	2740.80	7.00	2747.80
21	35.970424	-115.993671	2756.97	7.00	2763.97
22	35.969139	-115.994181	2773.62	7.00	2780.62

Discrete Observation Point Receptors

Name	ID	Latitude (°)	Longitude (°)	Elevation (ft)	Height (ft)
OP 1	1	35.973217	-115.865997	2667.13	8.00
OP 2	2	35.977256	-115.870424	2658.23	8.00
OP 3	3	35.975066	-115.921191	2584.07	8.00
OP 4	4	35.979662	-115.923421	2580.57	8.00
OP 5	5	35.970000	-115.880845	2638.66	8.00
OP 6	6	35.957967	-115.884521	2638.56	8.00
OP 7	7	35.970063	-115.897191	2612.28	8.00
OP 8	8	35.960874	-115.899338	2616.12	8.00
OP 9	9	35.970547	-115.908013	2602.62	8.00
OP 10	10	35.957985	-115.919082	2596.42	8.00
OP 11	11	35.961998	-115.940113	2606.61	8.00
OP 12	12	35.967135	-115.942392	2587.55	8.00

Glare Analysis Results

Summary of Results No glare predicted

PV Array	Tilt °	Orient °	Annual Green Glare		Annual Yellow Glare		Energy kWh
			min	hr	min	hr	
PV 01	SA tracking	SA tracking	0	0.0	0	0.0	-
PV 02	SA tracking	SA tracking	0	0.0	0	0.0	-
PV 03	SA tracking	SA tracking	0	0.0	0	0.0	-

Total glare received by each receptor; may include duplicate times of glare from multiple reflective surfaces.

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Old Spanish Trail Hwy	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0
OP 12	0	0.0	0	0.0

PV: PV 01 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Old Spanish Trail Hwy	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0
OP 12	0	0.0	0	0.0

PV 01 and Route: Old Spanish Trail Hwy

No glare found

PV 01 and OP 1

No glare found

PV 01 and OP 2

No glare found

PV 01 and OP 3

No glare found

PV 01 and OP 4

No glare found

PV 01 and OP 5

No glare found

PV 01 and OP 6

No glare found

PV 01 and OP 7

No glare found

PV 01 and OP 8

No glare found

PV 01 and OP 9

No glare found

PV 01 and OP 10

No glare found

PV 01 and OP 11

No glare found

PV 01 and OP 12

No glare found

PV: PV 02 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Old Spanish Trail Hwy	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0
OP 12	0	0.0	0	0.0

PV 02 and Route: Old Spanish Trail Hwy

No glare found

PV 02 and OP 1

No glare found

PV 02 and OP 2

No glare found

PV 02 and OP 3

No glare found

PV 02 and OP 4

No glare found

PV 02 and OP 5

No glare found

PV 02 and OP 6

No glare found

PV 02 and OP 7

No glare found

PV 02 and OP 8

No glare found

PV 02 and OP 9

No glare found

PV 02 and OP 10

No glare found

PV 02 and OP 11

No glare found

PV 02 and OP 12

No glare found

PV: PV 03 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Old Spanish Trail Hwy	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0
OP 12	0	0.0	0	0.0

PV 03 and Route: Old Spanish Trail Hwy

No glare found

PV 03 and OP 1

No glare found

PV 03 and OP 2

No glare found

PV 03 and OP 3

No glare found

PV 03 and OP 4

No glare found

PV 03 and OP 5

No glare found

PV 03 and OP 6

No glare found

PV 03 and OP 7

No glare found

PV 03 and OP 8

No glare found

PV 03 and OP 9

No glare found

PV 03 and OP 10

No glare found

PV 03 and OP 11

No glare found

PV 03 and OP 12

No glare found

Assumptions

"Green" glare is glare with low potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.

"Yellow" glare is glare with potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.

Times associated with glare are denoted in Standard time. For Daylight Savings, add one hour.

The algorithm does not rigorously represent the detailed geometry of a system; detailed features such as gaps between modules, variable height of the PV array, and support structures may impact actual glare results. However, we have validated our models against several systems, including a PV array causing glare to the air-traffic control tower at Manchester-Boston Regional Airport and several sites in Albuquerque, and the tool accurately predicted the occurrence and intensity of glare at different times and days of the year.

Several V1 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. This primarily affects V1 analyses of path receptors.

Random number computations are utilized by various steps of the annual hazard analysis algorithm. Predicted minutes of glare can vary between runs as a result. This limitation primarily affects analyses of Observation Point receptors, including ATCTs. Note that the SGHAT/ ForgeSolar methodology has always relied on an analytical, qualitative approach to accurately determine the overall hazard (i.e. green vs. yellow) of expected glare on an annual basis.

The analysis does not automatically consider obstacles (either man-made or natural) between the observation points and the prescribed solar installation that may obstruct observed glare, such as trees, hills, buildings, etc.

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.)

The variable direct normal irradiance (DNI) feature (if selected) scales the user-prescribed peak DNI using a typical clear-day irradiance profile. This profile has a lower DNI in the mornings and evenings and a maximum at solar noon. The scaling uses a clear-day irradiance profile based on a normalized time relative to sunrise, solar noon, and sunset, which are prescribed by a sun-position algorithm and the latitude and longitude obtained from Google maps. The actual DNI on any given day can be affected by cloud cover, atmospheric attenuation, and other environmental factors.

The ocular hazard predicted by the tool depends on a number of environmental, optical, and human factors, which can be uncertain. We provide input fields and typical ranges of values for these factors so that the user can vary these parameters to see if they have an impact on the results. The speed of SGHAT allows expedited sensitivity and parametric analyses.

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.

Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid based on aggregated research data. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.

Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.

Refer to the Help page at www.forgesolar.com/help/ for assumptions and limitations not listed here.

Default glare analysis parameters and observer eye characteristics (for reference only):

- Analysis time interval: 1 minute
- Ocular transmission coefficient: 0.5
- Pupil diameter: 0.002 meters
- Eye focal length: 0.017 meters
- Sun subtended angle: 9.3 milliradians

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