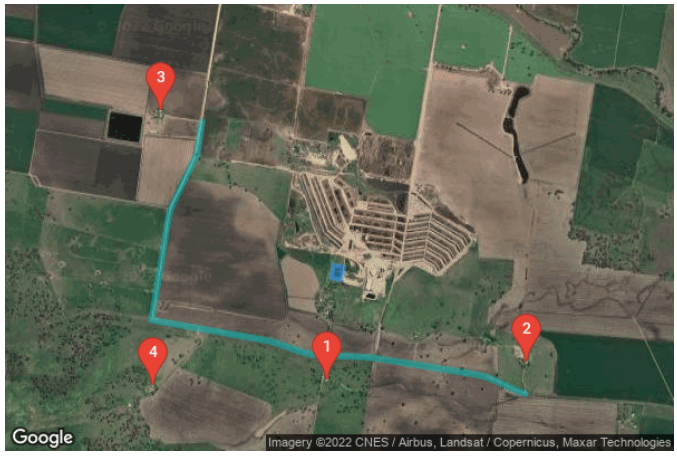
ForgeSolar

Demo Project

Quirindi SF

Created March 2, 2022
Updated March 3, 2022
Time-step 10 minute(s)
Timezone offset UTC10
Site ID 65628.11593

Project type Demo
Project status: active



Misc. Analysis Settings

DNI: **varies (1,000.0 W/m^2 peak)**
Ocular transmission coefficient: **0.5**
Pupil diameter: **0.002 m**
Eye focal length: **0.017 m**
Sun subtended angle: **9.3 mrad**

Analysis Methodologies:

- Observation point: **Version 2**
- 2-Mile Flight Path: **Version 2**
- Route: **Version 2**

Summary of Results No glare predicted!

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced
	deg	deg	min	min	kWh
Quirindi SF	25.0	9.0	0	0	1,198.0

Component Data

PV Array(s)

Total PV footprint area: 7,365 m^2

Name: Quirindi SF
Footprint area: 7,365 m^2
Axis tracking: Fixed (no rotation)
Tilt: 25.0 deg
Orientation: 9.0 deg

Rated power: 0.5 kW
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

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
1	-31.476406	150.582565	340.28	2.92	343.19
2	-31.476515	150.583353	344.09	2.92	347.00
3	-31.477377	150.583190	344.24	2.92	347.16
4	-31.477269	150.582401	339.29	2.92	342.20

Route Receptor(s)

Name: Route 1
Route type Two-way
View angle: 50.0 deg

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
1	-31.484836	150.597334	339.41	1.20	340.61
2	-31.484552	150.596471	339.91	1.20	341.11
3	-31.484058	150.595242	339.64	1.20	340.84
4	-31.483751	150.594373	337.49	1.20	338.69
5	-31.483573	150.593504	338.09	1.20	339.29
6	-31.482493	150.585677	336.30	1.20	337.50
7	-31.482420	150.584615	337.20	1.20	338.40
8	-31.482319	150.581729	335.05	1.20	336.25
9	-31.482269	150.580860	335.00	1.20	336.20
10	-31.482132	150.580216	335.54	1.20	336.74
11	-31.481551	150.578280	333.67	1.20	334.87
12	-31.481377	150.577550	333.63	1.20	334.83
13	-31.481267	150.576901	334.38	1.20	335.58
14	-31.480013	150.568567	330.37	1.20	331.57
15	-31.473263	150.569893	331.30	1.20	332.50
16	-31.472796	150.570033	331.09	1.20	332.29
17	-31.472343	150.570258	330.86	1.20	332.06
18	-31.469294	150.571981	332.32	1.20	333.52
19	-31.469087	150.572055	332.17	1.20	333.37
20	-31.467037	150.572452	333.78	1.20	334.98

Discrete Observation Receptors

Number	Latitude	Longitude	Ground elevation	Height above ground	Total Elevation
	deg	deg	m	m	m
OP 1	-31.483920	150.582095	337.21	1.70	338.91
OP 2	-31.482767	150.597459	348.28	1.70	349.98
OP 3	-31.466320	150.569293	333.00	1.70	334.70
OP 4	-31.484326	150.568699	332.65	1.70	334.35

Summary of PV Glare Analysis

PV configuration and total predicted glare

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced	Data File
	deg	deg	min	min	kWh	
Quirindi SF	25.0	9.0	0	0	1,198.0	

PV & Receptor Analysis Results

Results for each PV array and receptor

Quirindi SF no glare found

Predicted energy output: 1,198.0 kWh (assuming sunny, clear skies)

Component	Green glare (min)	Yellow glare (min)
OP: OP 1	0	0
OP: OP 2	0	0
OP: OP 3	0	0
OP: OP 4	0	0
Route: Route 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 V1 calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results fo 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.
- Refer to the **Help page** for detailed assumptions and limitations not listed here.