ForgeSolar

Yelta Solar Farm

YeltaSF_Dwellings and Roads-temp-10

Created March 23, 2022
Updated March 23, 2022
Time-step 1 minute
Timezone offset UTC10
Site ID 66541.10901

Project type Advanced
Project status: active
Category 1 MW to 5 MW

Misc. Analysis Settings

DNI: **varies (2,000.0 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
PV array 1	SA tracking	SA tracking	0	0	-

Component Data

PV Array(s)

Total PV footprint area: 108,475 m^2

Name: PV array 1
Footprint area: 108,475 m^2
Axis tracking: Single-axis rotation
Backtracking: Shade
Tracking axis orientation: 0.0 deg
Maximum tracking angle: 60.0 deg
Resting angle: 30.0 deg
Ground Coverage Ratio: 0.5

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

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
1	-34.120022	141.982662	39.09	1.70	40.79
2	-34.121189	141.981844	38.47	1.70	40.17
3	-34.124558	141.979532	38.32	1.70	40.02
4	-34.125582	141.979406	38.01	1.70	39.71
5	-34.125230	141.979740	38.01	1.70	39.71
6	-34.125306	141.979897	38.00	1.70	39.70
7	-34.126079	141.979879	38.00	1.70	39.70
8	-34.125322	141.980434	38.00	1.70	39.70
9	-34.125341	141.980551	37.94	1.70	39.64
10	-34.126063	141.980567	38.00	1.70	39.70
11	-34.125248	141.981211	37.44	1.70	39.14
12	-34.125272	141.981324	37.38	1.70	39.08
13	-34.126049	141.981337	37.69	1.70	39.39
14	-34.123163	141.983177	37.00	1.70	38.70
15	-34.122439	141.983209	37.00	1.70	38.70
16	-34.122541	141.983016	36.87	1.70	38.57
17	-34.121693	141.983075	37.79	1.70	39.49
18	-34.121760	141.982869	37.85	1.70	39.55
19	-34.120896	141.982885	39.65	1.70	41.35
20	-34.120901	141.982678	40.19	1.70	41.89

Route Receptor(s)

Name: Bunker Road
Route type Two-way
View angle: 90.0 deg

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
1	-34.119340	141.989139	41.20	2.00	43.20
2	-34.120957	141.989236	42.59	2.00	44.59
3	-34.122280	141.989300	41.80	2.00	43.80
4	-34.123106	141.989386	41.36	2.00	43.36
5	-34.123444	141.989600	41.60	2.00	43.60
6	-34.123586	141.989901	42.96	2.00	44.96
7	-34.123755	141.990974	47.36	2.00	49.36
8	-34.123968	141.992325	50.32	2.00	52.32
9	-34.124057	141.993334	50.41	2.00	52.41
10	-34.124137	141.993817	50.18	2.00	52.18

Name: Calder Highway
Route type Two-way
View angle: 90.0 deg

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
1	-34.125076	141.997473	54.80	2.00	56.80
2	-34.124498	141.995316	53.08	2.00	55.08
3	-34.124205	141.994297	50.40	2.00	52.40
4	-34.123886	141.993417	50.53	2.00	52.53
5	-34.123433	141.992698	51.16	2.00	53.16
6	-34.122971	141.992162	51.72	2.00	53.72
7	-34.122536	141.991760	51.49	2.00	53.49
8	-34.121239	141.990740	48.00	2.00	50.00
9	-34.119850	141.989676	43.38	2.00	45.38
10	-34.118820	141.988872	40.07	2.00	42.07
11	-34.117785	141.988062	39.38	2.00	41.38
12	-34.116848	141.987295	40.71	2.00	42.71
13	-34.115840	141.986447	37.89	2.00	39.89
14	-34.115471	141.986195	38.18	2.00	40.18
15	-34.115085	141.986227	38.17	2.00	40.17
16	-34.114840	141.986442	37.20	2.00	39.20
17	-34.114538	141.986994	35.89	2.00	37.89

Name: Hoyle Road
Route type Two-way
View angle: 90.0 deg

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
1	-34.114895	141.986323	37.79	2.00	39.79
2	-34.115126	141.985808	39.46	2.00	41.46
3	-34.115512	141.985078	39.93	2.00	41.93
4	-34.116720	141.983946	39.93	2.00	41.93
5	-34.117950	141.982830	40.52	2.00	42.52
6	-34.119802	141.981151	38.48	2.00	40.48
7	-34.120628	141.980379	38.08	2.00	40.08
8	-34.121214	141.980068	38.82	2.00	40.82

Name: Meridan Road
Route type Two-way
View angle: 90.0 deg

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
1	-34.132536	141.995735	41.27	2.00	43.27
2	-34.131825	141.995413	40.80	2.00	42.80
3	-34.130404	141.994061	40.68	2.00	42.68
4	-34.128841	141.992473	38.80	2.00	40.80
5	-34.125591	141.989211	36.00	2.00	38.00
6	-34.124916	141.988804	36.00	2.00	38.00
7	-34.123744	141.988503	37.70	2.00	39.70
8	-34.118983	141.987087	38.06	2.00	40.06
9	-34.118130	141.986851	38.96	2.00	40.96
10	-34.117455	141.986787	38.58	2.00	40.58
11	-34.116922	141.987259	40.55	2.00	42.55

Name: Railway Line
Route type Two-way
View angle: 90.0 deg

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
1	-34.127616	141.992685	41.82	2.75	44.57
2	-34.128593	141.993758	41.55	2.75	44.30
3	-34.129526	141.994723	44.45	2.75	47.20
4	-34.130156	141.995228	45.52	2.75	48.27
5	-34.131195	141.995871	44.02	2.75	46.77
6	-34.131968	141.996150	42.51	2.75	45.26
7	-34.132598	141.996322	42.49	2.75	45.24

Discrete Observation Receptors

Number	Latitude	Longitude	Ground elevation	Height above ground	Total Elevation
	deg	deg	m	m	m
OP 1	-34.120779	141.979098	39.94	1.50	41.44
OP 2	-34.118795	141.981445	39.47	1.50	40.97
OP 3	-34.118064	141.985514	39.39	1.50	40.89
OP 4	-34.119752	141.988797	40.84	1.50	42.34
OP 5	-34.121311	141.989983	46.58	1.50	48.08
OP 6	-34.122532	141.991053	49.62	1.50	51.12
OP 7	-34.123500	141.992003	49.94	1.50	51.44
OP 8	-34.124889	141.991603	49.48	1.50	50.98
OP 9	-34.122171	141.992912	51.69	1.50	53.19
OP 10	-34.122749	141.993126	52.30	1.50	53.80
OP 11	-34.122642	141.993829	50.08	1.50	51.58

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	
PV array 1	SA tracking	SA tracking	0	0	-	

PV & Receptor Analysis Results

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
OP: OP 2	0	0
OP: OP 3	0	0
OP: OP 4	0	0
OP: OP 5	0	0
OP: OP 6	0	0
OP: OP 7	0	0
OP: OP 8	0	0
OP: OP 9	0	0
OP: OP 10	0	0
OP: OP 11	0	0
Route: Bunker Road	0	0
Route: Calder Highway	0	0
Route: Hoyle Road	0	0
Route: Meridan Road	0	0
Route: Railway Line	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. Actu 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 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 combine 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.