Preliminary Environmental Impact Report

Appendix 12E: Dwelling Receptors Group 5-7: Analysis Results Summary

PEIR Appendices [PINS Ref: EN 010171]

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Future Energy Llanwern Limited

FORGESOLAR GLARE ANALYSIS

Project: **Future Eenergy Solar Farm, Llanwern, near Newport, South East Wales**
Site configuration: **Future Energy - MERGED- Dwellings 5-7 ARC**

Created 29 Sep, 2025
Updated 29 Sep, 2025
Time-step 1 minute
Timezone offset UTC0
Minimum sun altitude 0.0 deg
DNI peaks at 1,000.0 W/m^2
Category 1 MW to 5 MW
Site ID 160548.26829

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

Glare with potential for temporary after-image predicted

PV Array	Tilt	Orient	Annual Green Glare		Annual Yellow Glare		Energy
	°	°	min	hr	min	hr	kWh
Solar array 1	18.0	180.0	42,214	703.6	3,376	56.3	-
Solar array 2	18.0	180.0	26,063	434.4	3,170	52.8	-

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
OP 1	1,385	23.1	42	0.7
OP 2	1,689	28.1	40	0.7
OP 3	700	11.7	1	0.0
OP 4	364	6.1	0	0.0
OP 5	902	15.0	7	0.1
OP 6	938	15.6	42	0.7
OP 7	965	16.1	45	0.8
OP 8	1,164	19.4	141	2.4
OP 9	2,644	44.1	558	9.3
OP 10	2,405	40.1	613	10.2
OP 11	355	5.9	11	0.2
OP 12	1,633	27.2	154	2.6
OP 13	195	3.2	0	0.0
OP 14	1,252	20.9	232	3.9
OP 15	2,283	38.0	399	6.7

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
OP 16	1,848	30.8	119	2.0
OP 17	2,221	37.0	241	4.0
OP 18	3,608	60.1	511	8.5
OP 19	1,925	32.1	141	2.4
OP 20	1,170	19.5	86	1.4
OP 21	740	12.3	13	0.2
OP 22	418	7.0	0	0.0
OP 23	826	13.8	0	0.0
OP 24	1,083	18.1	6	0.1
OP 25	2,184	36.4	58	1.0
OP 26	2,291	38.2	49	0.8
OP 27	1,851	30.9	62	1.0
OP 28	1,347	22.4	27	0.5
OP 29	1,060	17.7	85	1.4
OP 30	1,117	18.6	169	2.8
OP 31	872	14.5	1,549	25.8
OP 32	179	3.0	0	0.0
OP 33	1,065	17.8	34	0.6
OP 34	420	7.0	0	0.0
OP 35	479	8.0	0	0.0
OP 36	525	8.8	0	0.0
OP 37	413	6.9	0	0.0
OP 38	510	8.5	0	0.0
OP 39	577	9.6	0	0.0
OP 40	674	11.2	0	0.0
OP 41	724	12.1	0	0.0
OP 42	721	12.0	0	0.0
OP 43	20	0.3	0	0.0
OP 44	20	0.3	0	0.0
OP 45	19	0.3	0	0.0
OP 46	2,038	34.0	0	0.0
OP 47	28	0.5	0	0.0
OP 48	2,180	36.3	0	0.0
OP 49	2,807	46.8	79	1.3
OP 50	41	0.7	0	0.0
OP 51	34	0.6	0	0.0
OP 52	1,336	22.3	0	0.0
OP 53	60	1.0	0	0.0
OP 54	1,231	20.5	0	0.0
OP 55	43	0.7	0	0.0
OP 56	68	1.1	0	0.0
OP 57	2,769	46.1	320	5.3
OP 58	2,350	39.2	484	8.1

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
OP 59	1,694	28.2	110	1.8
OP 60	1,817	30.3	118	2.0