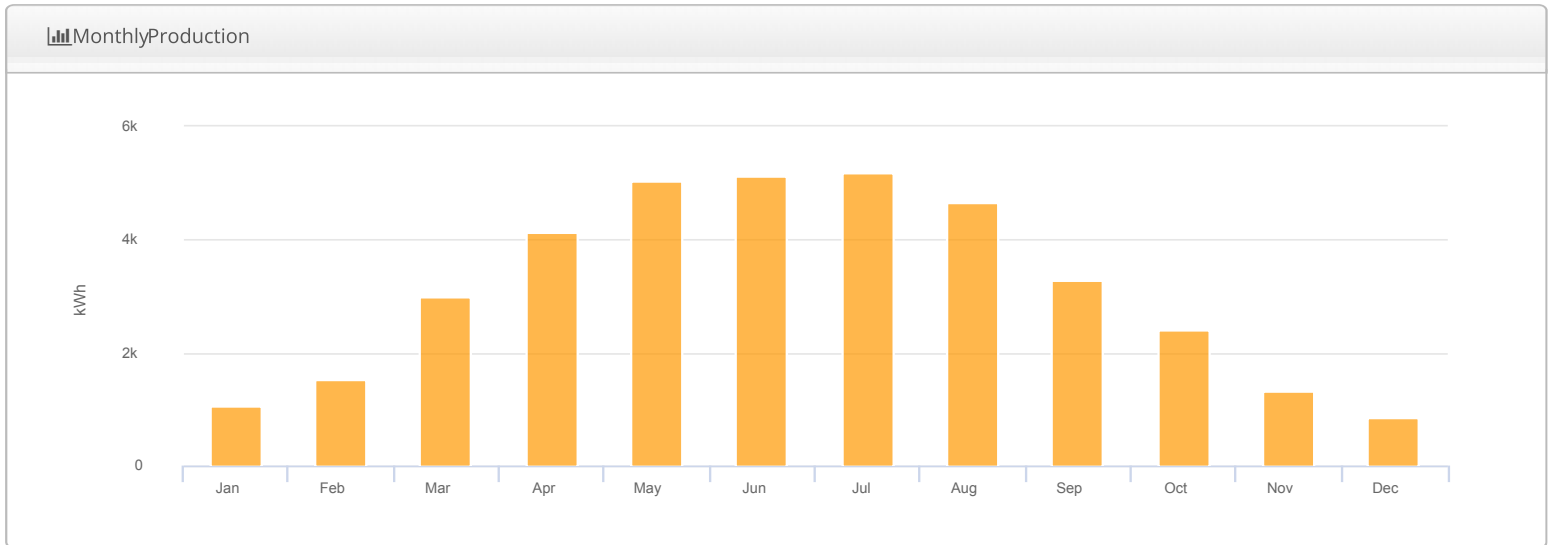
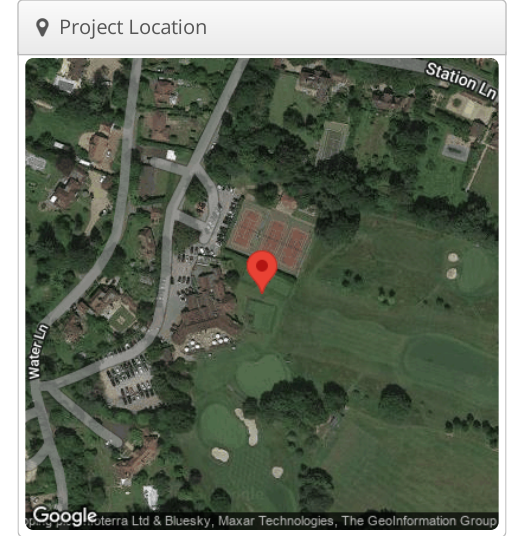


Project Design & Quotation

Report	
Project Name	Project Birdie
Project Description	GM/ CP
Project Address	Confidential
Prepared By	Tom Glenn tomglenn@solvo.energy

System Metrics	
Design	EPC
Module DC Nameplate	39.4 kW
Inverter AC Nameplate	36.0 kW Load Ratio: 1.09
Annual Production	37.57 MWh
Performance Ratio	86.3%
kWh/kWp	954.6
Weather Dataset	TMY, 10km Grid, meteonorm (meteonorm)
Simulator Version	86889782d6-c36bc21c0a-f288a5da50-f3c93275c5



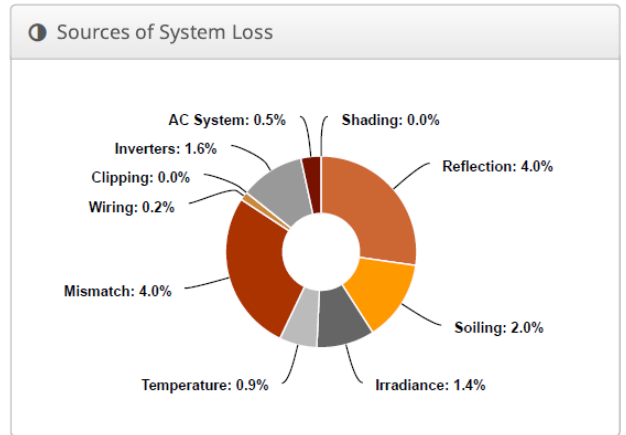
EPC Quote	
EPC System Cost	£40,041.00
Estimated Annual Savings	£17,679.65
Estimated Annual Maintenance Cost	£1,000
Basic Payback Calculation	2.26 Years
System Lifetime Savings	£372,792.15
<p>Disclaimer: The design and quotation were produced from information provided during the respective client's inquiry period. All quoted values for cost, savings, etc are preliminary and are subject to change with the provision of additional information about the respective site and the confirmation of a Grid Connection Offer.</p>	

System Environmental Benefits (EPC)	
Tonnes Avoided CO ₂	181
Car Miles Avoided	842,295
Trees Planted	5,620
Long Haul Flights Avoided	218
<p>All environmental benefits are estimations calculated using the UK grid's average carbon intensity (2022). Each benefit is calculated over the PV systems full, 25 year life cycle.</p>	

Annual Production			
	Description	Output	% Delta
Irradiance (kWh/m ²)	Annual Global Horizontal Irradiance	995.1	
	POA Irradiance	1,106.0	11.1%
	Shaded Irradiance	1,106.0	0.0%
	Irradiance after Reflection	1,061.8	-4.0%
	Irradiance after Soiling	1,040.6	-2.0%
	Total Collector Irradiance	1,040.6	0.0%
Energy (kWh)	Nameplate	41,017.5	
	Output at Irradiance Levels	40,427.7	-1.4%
	Output at Cell Temperature Derate	40,050.5	-0.9%
	Output After Mismatch	38,457.5	-4.0%
	Optimal DC Output	38,377.4	-0.2%
	Constrained DC Output	38,377.2	0.0%
	Inverter Output	37,763.2	-1.6%
	Energy to Grid	37,574.4	-0.5%
Temperature Metrics			
	Avg. Operating Ambient Temp		13.1 °C
	Avg. Operating Cell Temp		18.8 °C
Simulation Metrics			
	Operating Hours		4552
	Solved Hours		4552

Condition Set												
Description	Condition Set 1											
Weather Dataset	TMY, 10km Grid, meteonorm (meteonorm)											
Solar Angle Location	Meteo Lat/Lng											
Transposition Model	Perez Model											
Temperature Model	Sandia Model											
Temperature Model Parameters	Rack Type	a	b	Temperature Delta								
	Fixed Tilt	-3.56	-0.075	3°C								
	Flush Mount	-2.81	-0.0455	0°C								
	East-West	-3.56	-0.075	3°C								
	Carport	-3.56	-0.075	3°C								
Soiling (%)	J	F	M	A	M	J	J	A	S	O	N	D
	2	2	2	2	2	2	2	2	2	2	2	2
Irradiation Variance	5%											
Cell Temperature Spread	4° C											
Module Binning Range	-2.5% to 2.5%											
AC System Derate	0.50%											
Module Characterizations	Module	Uploaded By	Characterization									
	CS3N-410MS(IEC1500 V) (Canadian Solar)	HelioScope	Spec Sheet Characterization, PAN									
Component Characterizations	Device	Uploaded By	Characterization									
	SUN2000-36KTL-M3 (400V) (2022) (Huawei)	HelioScope	Spec Sheet									

Components		
Component Name		Count
Inverters	SUN2000-36KTL-M3 (400V) (2022)(Huawei)	1 (36.0 kW)
Strings	10 AWG (Copper)	5 (285.5 m)
Module	Canadian Solar, CS3N-410MS(IEC1500 V) (410W)	96 (39.4 kW)



Field Segments												
Description	Racking	Orientation	Tilt	Azimuth	Intrav	Spacing	Frame	Size	Frames	Modules	Power	
Field Segment 1	FixedTilt	Portrait(Vertical)	15°	197°		2.4 m			2x8	6	96	39.4 kW

Detailed Layout

