

WRIGHT, CAROLINE

Stallion Lane, Pontesbury, SY5 0PN, United Kingdom | 13 Oct 2023



STORAGE

SolarEdge Home Battery 10kWh

Self-consumption  
**68%**

Self-consumption from  
Batteries  
**24%**




Total Storage Capacity  
**10 kWh**

Total Battery Power  
**5 kW**

SYSTEM OVERVIEW

 12 PV modules

 1 Inverter

 12 Optimizers

 1 Battery

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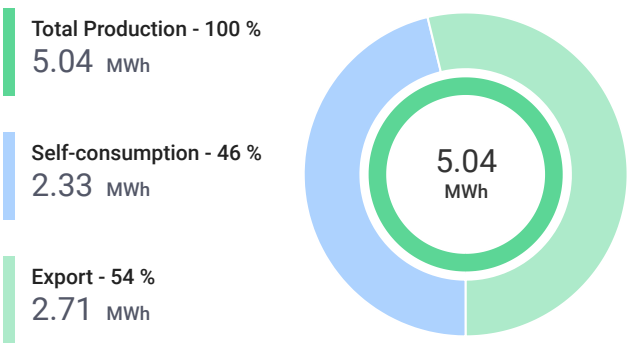
FINANCIAL OVERVIEW

Net Payments	Lifetime Bill Savings (NPV)	System Profit (NPV)	Internal Return Rate (IRR)	Payback Period
£ 14,350	£ 31,566	£ 17,216	7.84 %	10.9 years

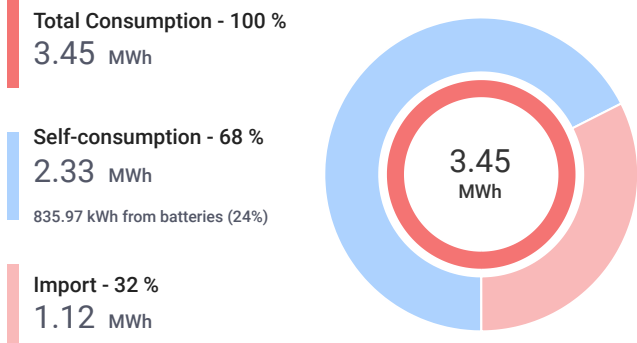
SIMULATION RESULTS

 Installed DC Power 5.34 kWp	 Max Achieved AC Power 5.00 kW	 Annual Energy Production 5.04 MWh	 CO2 Emission Saved (Annually) 974.87 kg	 Equivalent Trees Planted (Annually) 45
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SYSTEM PRODUCTION



CONSUMPTION

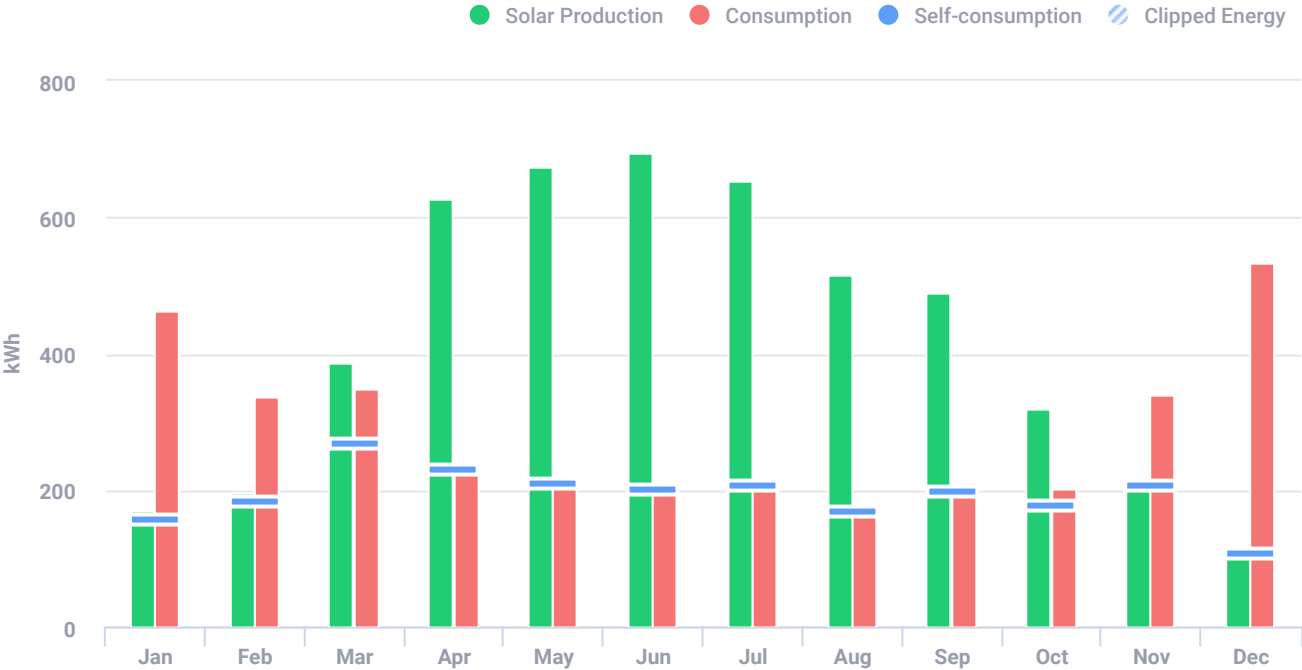


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ESTIMATED MONTHLY ENERGY



Total clipped energy: 0.02%

PV MODULES

# Module	Model	Peak power	Racking type	Orientation	Azimuth	Tilt
12	Jinko, JKM445N-54HL4R-V-BF (user-defined)	5.3 kWp			213°	40°
Total: 12		5.3 kWp				

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ESTIMATED BILL SAVINGS YEAR 1

Avg. Monthly			
Current Monthly Bill	Monthly Bill with SolarEdge	Net Bill Monthly Savings	Bill Offset
£ 85.10	£ -6.27	£ 91.37	107.37 %

Estimated Net Lifetime Bill Savings

£ 31,566

Utility Provider: custom | Utility Rate: wright (0.296 £/kWh)

Export Rate: Octopus 15p (0.15 £/kWh)

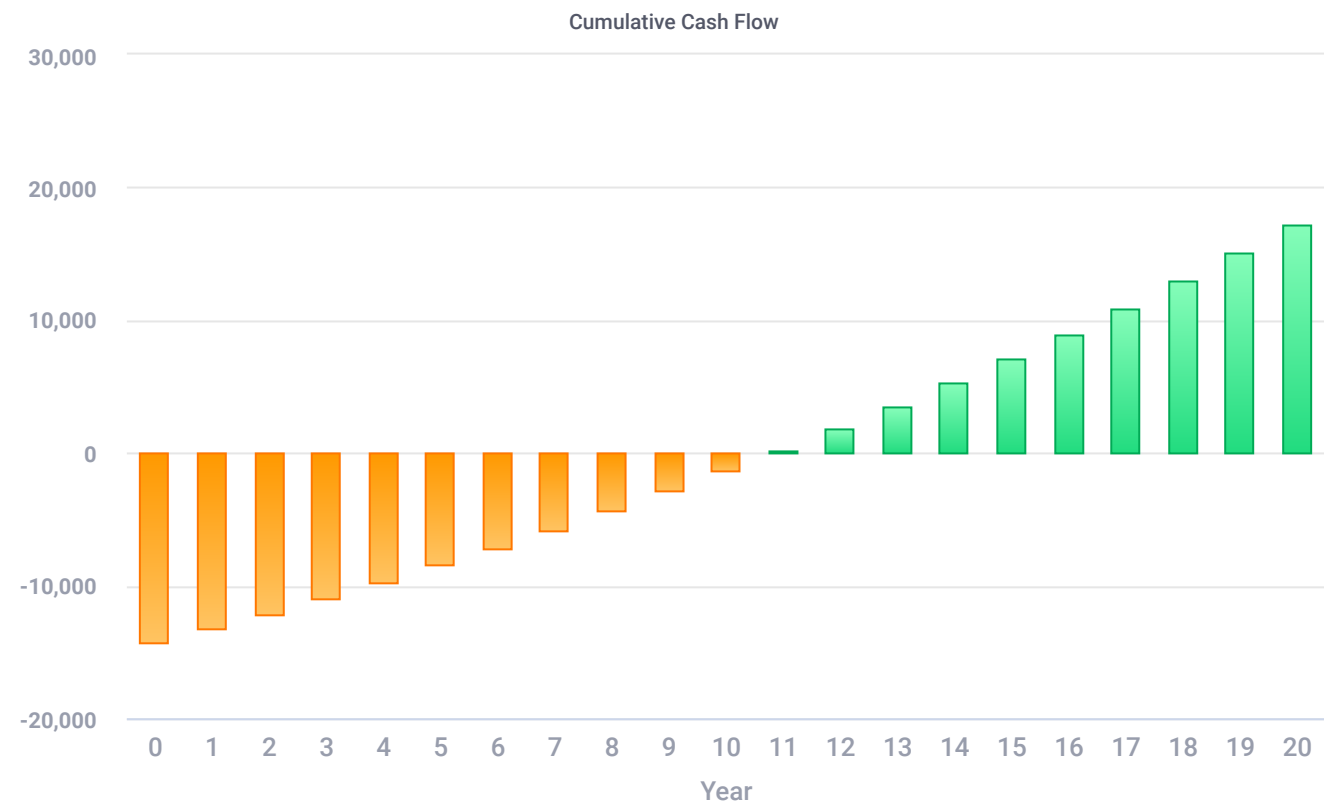
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DETAILED FINANCIAL ANALYSIS

System Price	Maintenance Cost (NPV)	Returns from Incentives (NPV)	Net Payments	Lifetime Bill Savings (NPV)
£ 14,350	£ N/A	£ N/A	£ 14,350	£ 31,566
System Profit (NPV)	Internal Return Rate (IRR)	Return Of Investment (ROI)	Levelized Cost Of Energy (LCOE)	Payback Period
£ 17,216	7.84 %	119.97 %	£/kWh 0.148	10.9 years



YEARLY CASH FLOW

# Year	System Price	Net Bill Savings	Annual Cash Flow	Cumulative Cash Flow
0	£ -14,350.00	£ 0.00	£ -14,350.00	£ -14,350.00
1		£ 1,096.43	£ 1,096.43	£ -13,253.57

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YEARLY CASH FLOW (CONTINUED)

# Year	System Price	Net Bill Savings	Annual Cash Flow	Cumulative Cash Flow
2		£ 1,136.69	£ 1,136.69	£ -12,116.87
3		£ 1,178.44	£ 1,178.44	£ -10,938.44
4		£ 1,221.72	£ 1,221.72	£ -9,716.72
5		£ 1,266.59	£ 1,266.59	£ -8,450.13
6		£ 1,313.11	£ 1,313.11	£ -7,137.01
7		£ 1,361.35	£ 1,361.35	£ -5,775.66
8		£ 1,411.37	£ 1,411.37	£ -4,364.30
9		£ 1,463.22	£ 1,463.22	£ -2,901.08
10		£ 1,516.99	£ 1,516.99	£ -1,384.09
11		£ 1,572.72	£ 1,572.72	£ 188.63
12		£ 1,630.51	£ 1,630.51	£ 1,819.14
13		£ 1,690.43	£ 1,690.43	£ 3,509.56
14		£ 1,752.55	£ 1,752.55	£ 5,262.11
15		£ 1,816.96	£ 1,816.96	£ 7,079.07
16		£ 1,883.75	£ 1,883.75	£ 8,962.82
17		£ 1,952.97	£ 1,952.97	£ 10,915.79
18		£ 2,024.75	£ 2,024.75	£ 12,940.54
19		£ 2,099.16	£ 2,099.16	£ 15,039.70
20		£ 2,176.32	£ 2,176.32	£ 17,216.03
Total:		£ 31,566.03	£ 17,216.03	





BILL OF MATERIALS (BOM)

Items	Part Number	Quantity	Price (£)	Total (£)
Base Price		1	8770.00	8,770.00
 SE5000H		1	0.00	0.00






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BILL OF MATERIALS (BOM) (CONTINUED)

Items	Part Number	Quantity	Price (£)	Total (£)
 <b>S500</b> input up to 500Wp, Max Isc 15A	S500-1GM4MRM	12	0.00	0.00
 <b>SolarEdge Home Battery 10kWh</b> 10kWh Single Phase battery (400v)	BAT-10K1PS0B-02	1	5580.00	5,580.00
 <b>JKM445N-54HL4R-V-BF</b> N-type Monocrystalline Silicone		12		
 <b>SolarEdge Energy Meter (modbus)</b> 1PH/3PH 230/400V, Energy Meter with Modbus Connection, DIN-Rail mountable	SE-WND-3Y400-MB-K2	1		
Total Price: £ 14,350.00				

ELECTRICAL DESIGN

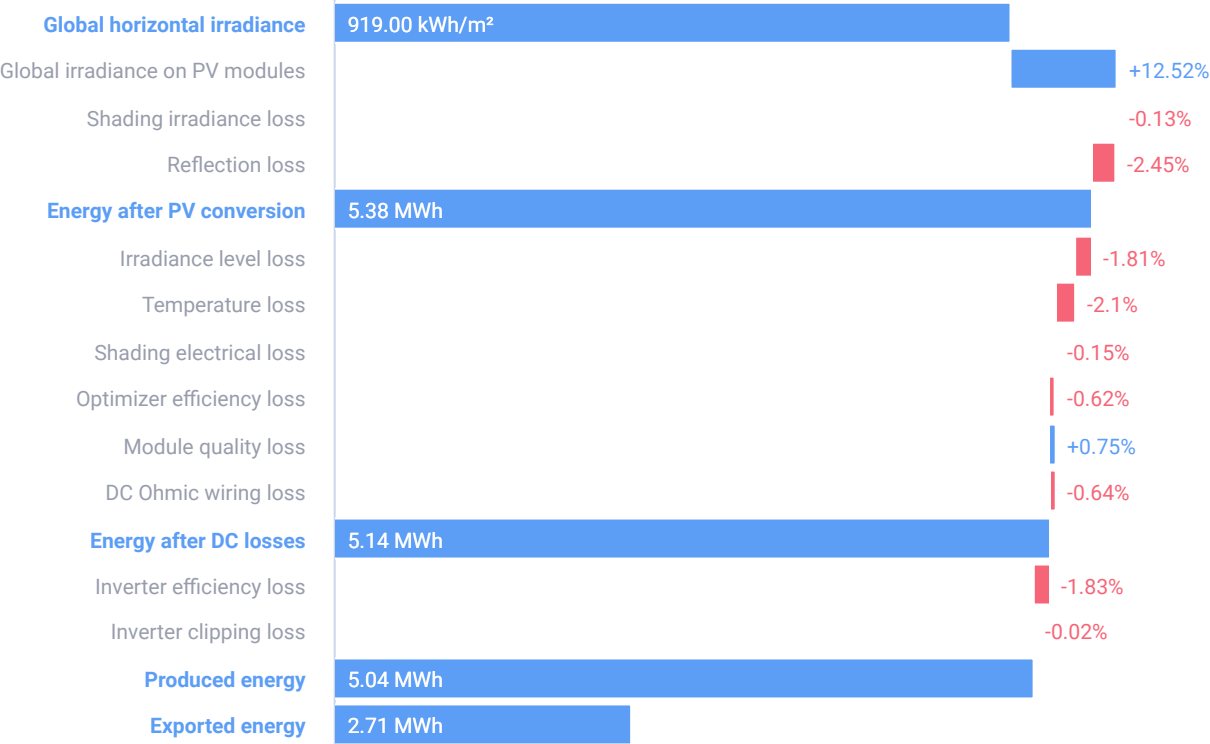
Inverters & Storage	Strings per inverter	Optimizers per string	PV modules per string
 1 x SE5000H 5.24kW   105% Oversizing  1 x SolarEdge Home Battery 10kWh	 1 x string	 12 x S500	 12

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SYSTEM LOSS DIAGRAM



SIMULATION PARAMETERS



LOCATION & GRID

Time zone	BST (London)
Weather station	Shrewsbury (12.08 km away)
Station altitude	52 m
Station data source	Meteonorm 7.1
Grid	400V L-L, 230V L-N



LOSS FACTORS

Near shading	Enabled
Albedo	0.20
Bi-Facial Albedo	0.30
Soiling/Snow	0%
Incidence angle modifier (IAM), ASHRAE b0 param.	0.05
Thermal loss factor U <sub>c</sub> (const) Flush mount	20
Thermal loss factor U <sub>c</sub> (const) Tilted	29
LID loss factor	0%
System unavailability	0%