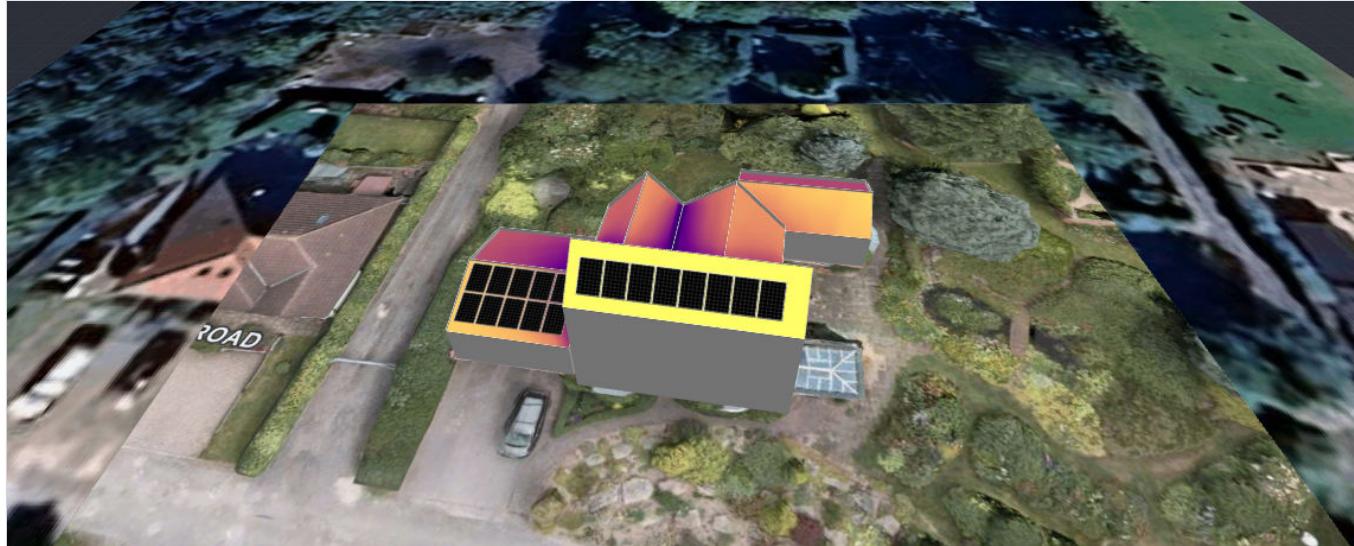


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SMART BATTERY

SolarEdge Home Battery 9.7kWh x 2

Smart Battery Management

Self Consumption Battery + PV

Bill Savings on Battery Lifetime

81%

£ 4,846



Total Storage Capacity

19.4 kWh

Total Battery Power

10 kW

ADVANTAGES
OF DC COUPLED
STORAGE OVER
AC

Battery Self Consumption

3%
better than AC

SYSTEM OVERVIEW



18 PV modules



1 Inverter



18 Optimizers



2 Batteries

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FINANCIAL OVERVIEW

Net Payments	Lifetime Bill Savings (NPV)	System Profit (NPV)	Internal Return Rate (IRR)	Payback Period
£ 14,000	£ 33,911	£ 19,911	13.47 %	7.2 years
<small>£4,846 Savings from Battery</small>				

SIMULATION RESULTS



Installed DC Power

8.37 kWp



Max Achieved AC Power

8.16 kW



Annual Solar Energy Production

7,800 kWh



Annual CO2 Emission Saved

1.51 t



Annual Equivalent Trees Planted

69



Max Achieved DC Power

8.11 kW



DC/AC Oversizing

81 %



Max Active AC Power

10 kW



Performance Ratio

81 %



Annual Specific Production

932 kWh/kWp

ANNUAL CONSUMPTION AND PRODUCTION RESULTS

Production

7,916 kWh

39%

29%

32%

- >To Home 3,074 kWh (39%)
- >To Battery 2,318 kWh (29%)
- To Grid 2,524 kWh (32%)

Consumption

6,500 kWh

47%

34%

19%

81% Energy from solar with battery

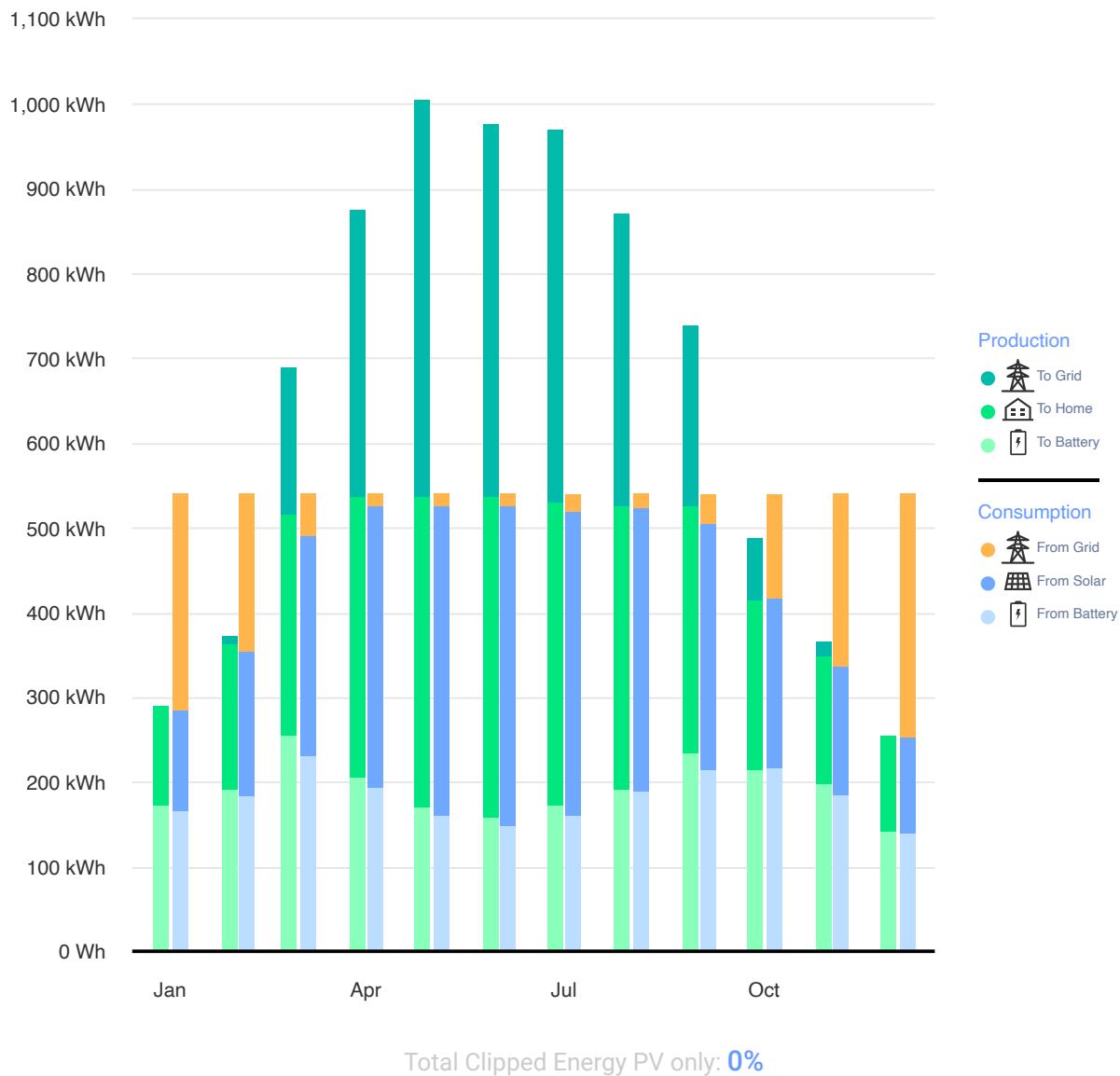
- From Solar 3,074 kWh (47%)
- From Battery 2,202 kWh (34%)
- From Grid 1,224 kWh (19%)

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ESTIMATED MONTHLY ENERGY

<https://designer.solaredge.com/sites/693496793285119/reports/summary/designs/1>

Month	(kWh)	(kWh)	(kWh)	To Grid (kWh)	(kWh)	(kWh)	(kWh)	(kWh)
Jan	285	175	118	-	541	167	118	256
Feb	367	192	171	12	541	185	171	185
Mar	664	257	260	173	541	231	260	50
Apr	865	206	332	338	541	195	332	14
May	995	172	366	468	542	162	366	15
Jun	968	159	378	441	542	150	378	15
Jul	960	173	358	440	542	162	358	22
Aug	872	191	335	346	542	191	335	16
Sep	720	235	293	213	542	214	293	34
Oct	493	215	200	75	542	218	200	124
Nov	356	198	151	18	542	187	151	204
Dec	253	143	112	-	542	141	112	289

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PV MODULES

#	Module	Model	Peak power	Racking type	Orientation	Azimuth	Tilt
8	Shanghai AIKO Energy Co., Ltd., AIKO-A465-MAH54Mw		3.7 kWp			189°	45°
10	Shanghai AIKO Energy Co., Ltd., AIKO-A465-MAH54Mw		4.7 kWp			190°	18°
Total:	18		8.4 kWp				

ESTIMATED BILL SAVINGS YEAR 1

Avg. Monthly

Current Monthly Bill	Monthly Bill with SolarEdge	Net Bill Monthly Savings	Bill Offset
£ 151.67	£ -2.99	£ 154.65	101.97 %

£21.81 Savings from Battery 14.38% Savings from Battery

Estimated Net Lifetime Bill Savings

£ 33,911

£4,846 Savings from Battery

Utility Provider: **UK provider** | Utility Rate: **Octopus (0.28 £/kWh)**Export Rate: **15p export (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)
£ 14,000	£ N/A	£ N/A	£ 14,000	£ 33,911

System Profit (NPV)	Internal Return Rate (IRR)	Return Of Investment (ROI)	Levelized Cost Of Energy (LCOE)	Payback Period
£ 19,911	13.47 %	142.22 %	£/kWh 0.121	7.2 years



YEARLY CASH FLOW

# Year	System Price	Net Bill Savings	Annual Cash Flow	Cumulative Cash Flow
0	£ -14,000.00	£ 0.00	£ -14,000.00	£ -14,000.00
1		£ 1,855.86	£ 1,855.86	£ -12,144.14

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YEARLY CASH FLOW (CONTINUED)

# Year	System Price	Net Bill Savings	Annual Cash Flow	Cumulative Cash Flow
2		£ 1,887.30	£ 1,887.30	£ -10,256.85
3		£ 1,919.24	£ 1,919.24	£ -8,337.60
4		£ 1,951.89	£ 1,951.89	£ -6,385.72
5		£ 1,984.88	£ 1,984.88	£ -4,400.83
6		£ 2,018.61	£ 2,018.61	£ -2,382.22
7		£ 2,052.95	£ 2,052.95	£ -329.27
8		£ 2,087.82	£ 2,087.82	£ 1,758.55
9		£ 2,123.33	£ 2,123.33	£ 3,881.88
10		£ 2,159.41	£ 2,159.41	£ 6,041.29
11		£ 2,195.93	£ 2,195.93	£ 8,237.22
12		£ 2,233.08	£ 2,233.08	£ 10,470.30
13		£ 2,271.11	£ 2,271.11	£ 12,741.41
14		£ 2,309.56	£ 2,309.56	£ 15,050.97
15		£ 2,348.84	£ 2,348.84	£ 17,399.80
16		£ 2,388.75	£ 2,388.75	£ 19,788.55
17		£ 2,429.32	£ 2,429.32	£ 22,217.87
18		£ 2,470.60	£ 2,470.60	£ 24,688.47
19		£ 2,512.59	£ 2,512.59	£ 27,201.06
20		£ 2,555.31	£ 2,555.31	£ 29,756.37
Total:		£ 43,756.37	£ 29,756.37	

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ELECTRICAL DESIGN

Inverters & Storage	Strings per inverter	Optimizers per string	PV modules per string
1 xSE10000H Home Hub 8.11kW 81% Oversizing 2 x SolarEdge Home Battery 9.7kWh	1 x string	10 x S500	10
	1 x string	8 x S500	8

SYSTEM LOSS DIAGRAM



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SIMULATION PARAMETERS



LOCATION & GRID

Time zone	BST (London)
Weather station	Nottingham Wxctr (12 km away)
Station altitude	117 m
Station data source	Meteonorm 8.2
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 Uc (const) Flush mount	20
Thermal loss factor Uc (const) Tilted	29
LID loss factor	0%
System unavailability	0%