

BSE EXAMPLE SMALL COMMERCIAL
Pulborough, United Kingdom | 1 Nov 2023



SYSTEM OVERVIEW

 84 PV modules

 1 Inverter

 42 Optimizers



SIMULATION RESULTS



Installed DC Power
42.00 kWp



Max Achieved AC Power
33.30 kW



Annual Energy Production
40.97 MWh



CO2 Emission Saved (Annually)
7.92 t



Equivalent Trees Planted (Annually)
364



Max Achieved DC Power
36.95 kW



DC/AC Oversizing
111 %



Max Active AC Power
33.30 kW



Performance Ratio
89 %



Performance Index
976 kWh/kWp

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SIMULATION PARAMETERS



LOCATION & GRID

Time zone	GMT (London)
Weather station	Littlehampton (14.02 km away)
Station altitude	1 m
Station data source	Meteonorm 7.1
Grid	400V L-L, 230V L-N

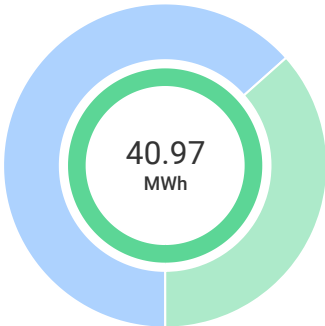


LOSS FACTORS

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_c (const) Flush mount	20
Thermal loss factor U_c (const) Tilted	29
LID loss factor	0%
System unavailability	0%

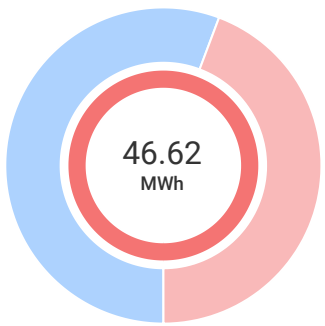
SYSTEM PRODUCTION

Total Production - 100 %	40.97 MWh
Self-consumption - 63 %	25.99 MWh
Export - 37 %	14.98 MWh



CONSUMPTION

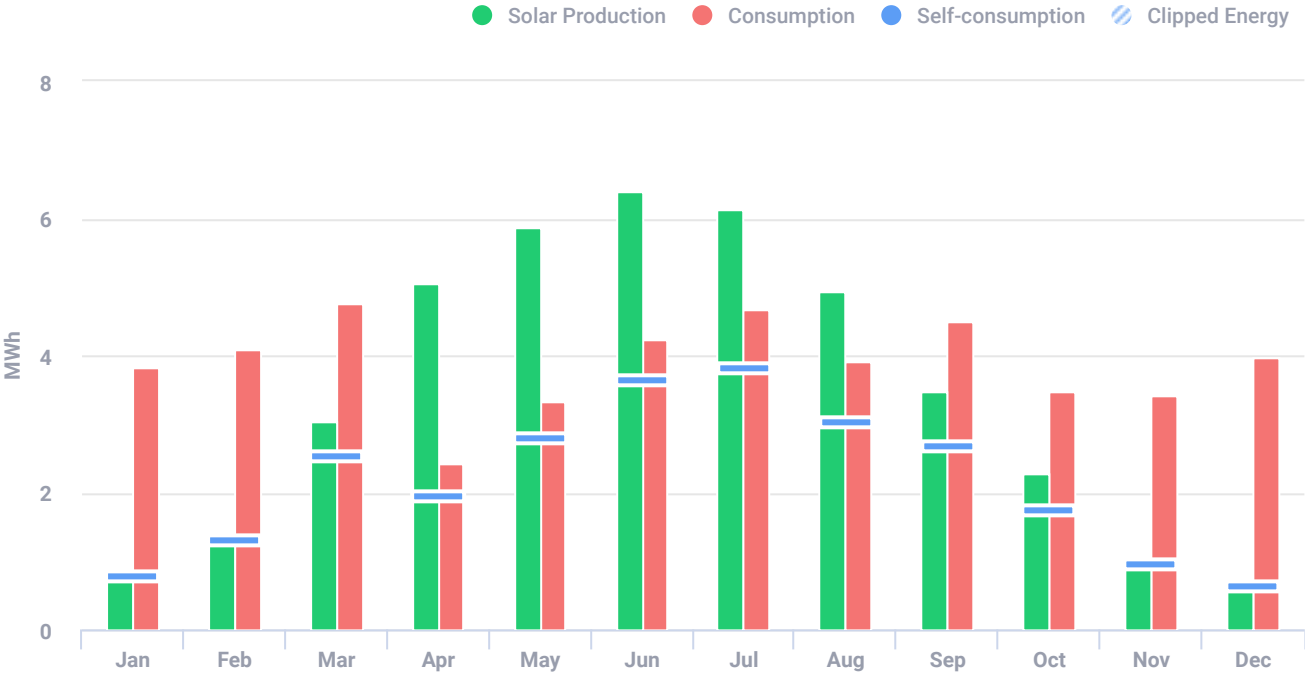
Total Consumption - 100 %	46.62 MWh
Self-consumption - 56 %	25.99 MWh
Import - 44 %	20.63 MWh



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ESTIMATED MONTHLY ENERGY



Total clipped energy: 0%

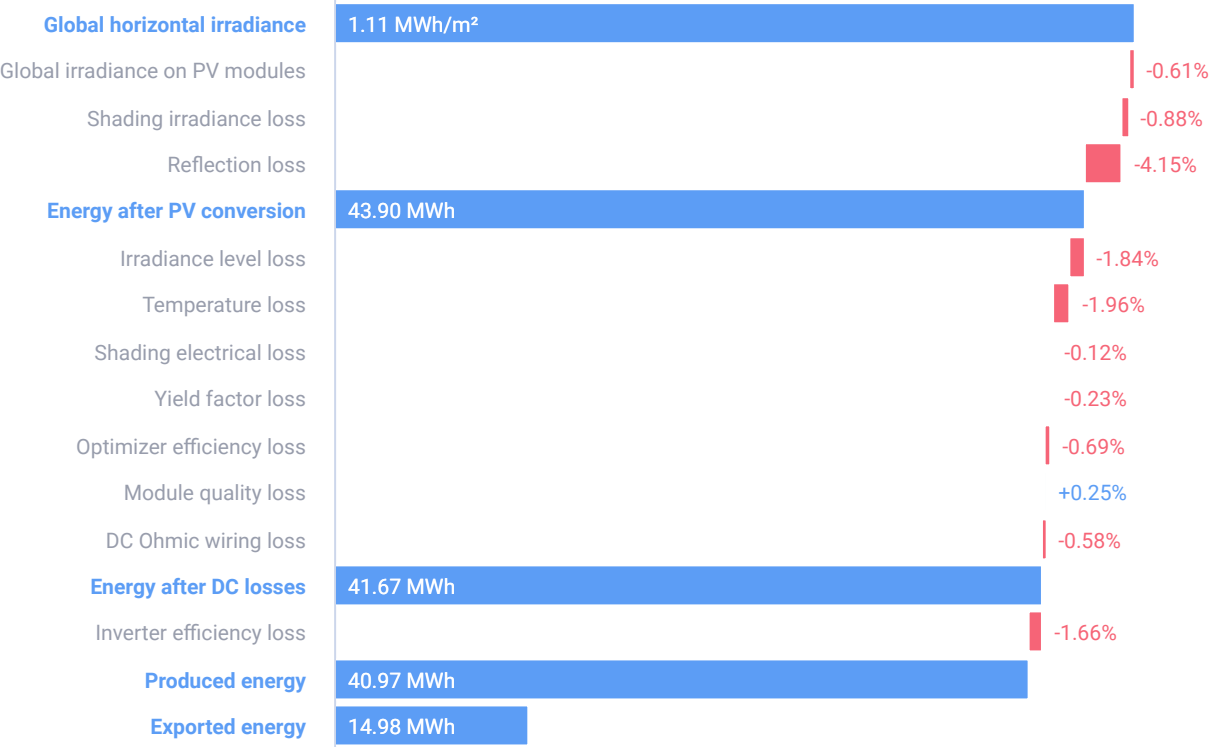
Month	Solar Production (kWh)	Consumption (kWh)	Self-consumption (kWh)	Clipped Energy (kWh)
Jan	813	3,836	799	-
Feb	1,364	4,087	1,299	-
Mar	3,033	4,759	2,535	-
Apr	5,049	2,409	1,965	-
May	5,868	3,329	2,804	1
Jun	6,383	4,235	3,658	-
Jul	6,144	4,678	3,838	-
Aug	4,927	3,915	3,049	-
Sep	3,480	4,509	2,683	-
Oct	2,265	3,472	1,751	-
Nov	996	3,429	958	-
Dec	651	3,965	651	-

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SYSTEM LOSS DIAGRAM



FINANCIAL OVERVIEW

Net Payments	Lifetime Bill Savings (NPV)	System Profit (NPV)	Internal Return Rate (IRR)	Payback Period
£ 44,446	£ 645,180	£ 600,734	40.17 %	3 years

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ESTIMATED BILL SAVINGS YEAR 1

Annual			
Current Annual Bill	Annual Bill with SolarEdge	Net Bill Annual Savings	Bill Offset
£ 22,875.39	£ 9,391.58	£ 13,483.81	58.94 %

Estimated Net Lifetime Bill Savings

£ 645,180

Utility Provider: Octopus Energy | Utility Rate: AML Rate (0.49 £/kWh)

Export Rate: Smart Export Guarantee (SEG) @ 5p (0.05 £/kWh)

	Current Monthly Bill	Monthly Bill with SolarEdge	Net Bill Monthly Savings	Bill Offset
Jan	£1,882.15	£1,490.05	£392.10	20.83%
Feb	£2,005.14	£1,365.19	£639.95	31.92%
Mar	£2,334.42	£1,067.48	£1,266.94	54.27%
Apr	£1,182.92	£66.04	£1,116.88	94.42%
May	£1,633.72	£106.62	£1,527.10	93.47%
Jun	£2,077.66	£148.88	£1,928.78	92.83%
Jul	£2,294.73	£298.81	£1,995.92	86.98%
Aug	£1,920.86	£333.10	£1,587.76	82.66%
Sep	£2,211.92	£857.28	£1,354.64	61.24%
Oct	£1,703.79	£820.12	£883.67	51.86%
Nov	£1,682.72	£1,211.59	£471.13	28%
Dec	£1,945.36	£1,626.40	£318.96	16.4%
Total:	£22,875.39	£9,391.58	£13,483.81	

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DETAILED FINANCIAL ANALYSIS

System Price	Maintenance Cost (NPV)	Returns from Incentives (NPV)	Net Payments	Lifetime Bill Savings (NPV)
£ 44,446	£ N/A	£ N/A	£ 44,446	£ 645,180
System Profit (NPV)	Internal Return Rate (IRR)	Return Of Investment (ROI)	Levelized Cost Of Energy (LCOE)	Payback Period
£ 600,734	40.17 %	1,351.6 %	£/kWh 0.075	3 years



YEARLY CASH FLOW

# Year	System Price	Net Bill Savings	Annual Cash Flow	Cumulative Cash Flow
0	£ -44,446.00	£ 0.00	£ -44,446.00	£ -44,446.00
1		£ 13,483.81	£ 13,483.81	£ -30,962.19

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YEARLY CASH FLOW (CONTINUED)

# Year	System Price	Net Bill Savings	Annual Cash Flow	Cumulative Cash Flow
2		£ 14,819.39	£ 14,819.39	£ -16,142.79
3		£ 16,287.25	£ 16,287.25	£ 144.46
4		£ 17,900.51	£ 17,900.51	£ 18,044.97
5		£ 19,673.55	£ 19,673.55	£ 37,718.52
6		£ 21,622.19	£ 21,622.19	£ 59,340.71
7		£ 23,763.85	£ 23,763.85	£ 83,104.55
8		£ 26,117.63	£ 26,117.63	£ 109,222.18
9		£ 28,704.46	£ 28,704.46	£ 137,926.64
10		£ 31,547.47	£ 31,547.47	£ 169,474.11
11		£ 34,672.05	£ 34,672.05	£ 204,146.16
12		£ 38,106.07	£ 38,106.07	£ 242,252.22
13		£ 41,880.16	£ 41,880.16	£ 284,132.39
14		£ 46,028.01	£ 46,028.01	£ 330,160.39
15		£ 50,586.69	£ 50,586.69	£ 380,747.08
16		£ 55,596.84	£ 55,596.84	£ 436,343.92
17		£ 61,103.05	£ 61,103.05	£ 497,446.97
18		£ 67,154.46	£ 67,154.46	£ 564,601.43
19		£ 73,805.13	£ 73,805.13	£ 638,406.57
20		£ 81,114.34	£ 81,114.34	£ 719,520.91
21		£ 89,147.48	£ 89,147.48	£ 808,668.39
22		£ 97,976.13	£ 97,976.13	£ 906,644.52
23		£ 107,678.81	£ 107,678.81	£ 1,014,323.33
24		£ 118,342.27	£ 118,342.27	£ 1,132,665.60
25		£ 130,061.58	£ 130,061.58	£ 1,262,727.18
Total:		£ 1,307,173.18	£ 1,262,727.18	