

SOUTH NEWTON HOSPITAL
Warminster Road, South Newton, SP2 0QD, United Kingdom | 24 Apr 2026



SYSTEM OVERVIEW



158 PV modules



2 Inverters



79 Optimizers

SIMULATION RESULTS



Installed DC Power
68.01 kWp



Max Achieved AC Power
48.30 kW



Annual Usable Solar
Production
75.27 MWh



Annual CO₂ Emission Saved
14.56 t



Annual Equivalent Trees
Planted
669



Max Achieved DC Power
66.12 kW



DC/AC Oversizing
124 %



Max Active AC Power
53.30 kW



Performance Ratio
87 %



Annual Specific Production
1,107 kWh/kWp

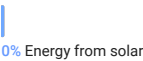
ANNUAL CONSUMPTION AND PRODUCTION RESULTS

Total Production **76.17** MWh



- To Building 0.00 MWh (0%)
- To Grid 75.27 MWh (99%)
- Clipped Energy 0.90 MWh (1%)

Consumption **0.00** Wh

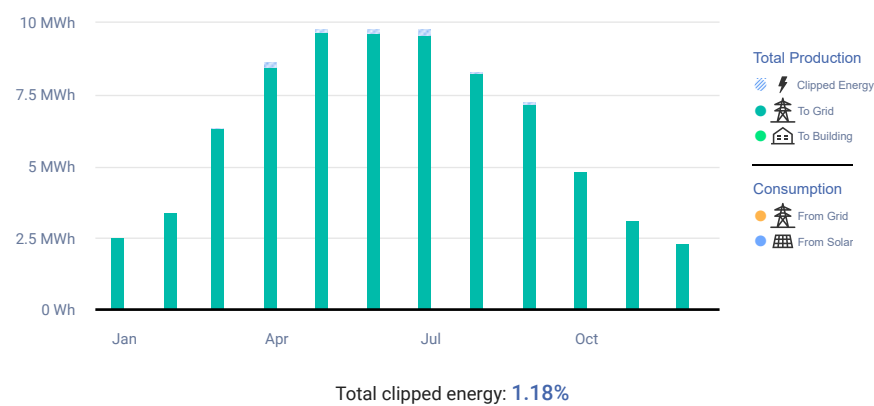


- From Solar 0.00 Wh (0%)
- From Grid 0.00 Wh (0%)

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ESTIMATED MONTHLY ENERGY



Month	Production (kWh)		Clipped Energy (kWh)	Consumption (kWh)		From PV (kWh)	From Grid (kWh)
	To Home (kWh)	To Grid (kWh)					
Jan	2,527	-	2,527	-	-	-	-
Feb	3,418	-	3,418	-	-	-	-
Mar	6,319	-	6,319	34	-	-	-
Apr	8,456	-	8,456	176	-	-	-
May	9,676	-	9,676	145	-	-	-
Jun	9,608	-	9,608	209	-	-	-
Jul	9,604	-	9,604	193	-	-	-
Aug	8,250	-	8,250	72	-	-	-
Sep	7,168	-	7,168	71	-	-	-
Oct	4,814	-	4,814	-	-	-	-
Nov	3,120	-	3,120	-	-	-	-
Dec	2,311	-	2,311	-	-	-	-

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PV MODULES

# Module	Model	Peak power	Racking type	Orientation	Azimuth	Tilt
34	Trina Solar Energy, TSM-445NEG9R.28 (Vertex S+)	15.1 kWp			151°	39°
46	Trina Solar Energy, TSM-445NEG9R.28 (Vertex S+)	20.5 kWp			150°	40°
22	Trina Solar Energy, TSM-395DE09.05 (Vertex S)	8.7 kWp			144°	20°
32	Trina Solar Energy, TSM-445NEG9R.28 (Vertex S+)	14.2 kWp			151°	37°
24	Trina Solar Energy, TSM-395DE09.05 (Vertex S)	9.5 kWp			233°	19°
Total: 158		68 kWp				

BILL OF MATERIALS (BOM)

Items	Part Number	Quantity	Price (£)	Total (£)
SE33.3K 33.3kW, MC4, DC safety unit with switch, AC/DC SPD, AC/DC Segregation	SE33.3K-RW00IBNJ4	1	1470.00	1,470.00
SE20K Three Phase Inverter, 20kW, DC SPD	SE20K-RW00IBNM4	1	1020.00	1,020.00
S1000		56		
S1200		23		
TSM-395DE09.05 (Vertex S)		46		
TSM-445NEG9R.28 (Vertex S+)		112		
Total Price: £ 2,490.00				

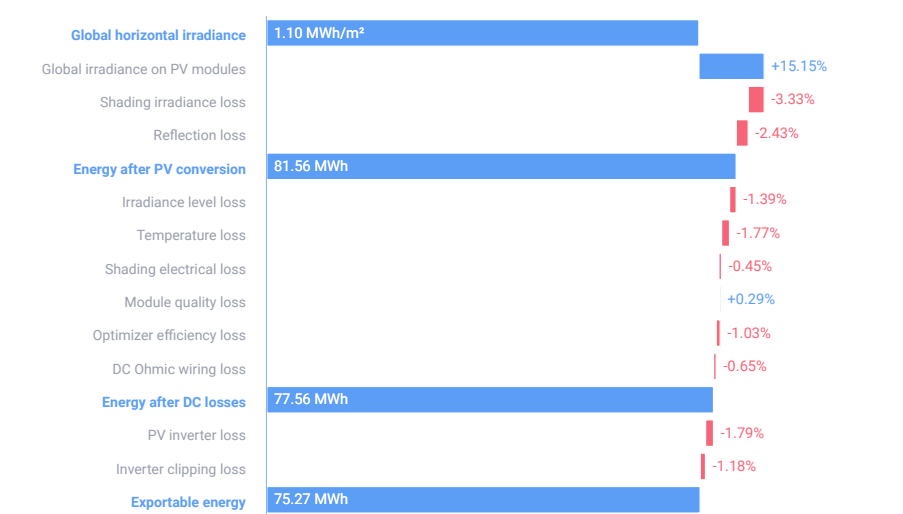
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ELECTRICAL DESIGN

Inverters & Storage	Strings per inverter	Optimizers per string	PV modules per string
1 x SE33.3K 48.9kW 147% Oversizing	1 x string	17 x S1000 (2:1)	34
	1 x string	18 x S1000 (2:1)	36
	1 x string	21 x S1000 (2:1)	42
1 x SE20K 17.21kW 86% Oversizing	1 x string	23 x S1200 (2:1)	46

SYSTEM LOSS DIAGRAM



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SIMULATION PARAMETERS

 LOCATION & GRID		 LOSS FACTORS	
Time zone	BST (London)	Near shading	Enabled
Weather station	Boscombe Down (10 km away)	Albedo	0.20
Station altitude	124 m	Bi-Facial Albedo	0.30
Station data source	Meteonorm 8.2	Soiling/Snow	0%
Grid	400V L-L, 230V L-N	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%