MANCHESTER ACADEMY GB ENERGY

Moss Lane East, Manchester, M14 4PX, United Kingdom | 5 Nov 2025

NPS SOLAR
POWERING OUR FUTURE



SYSTEM OVERVIEW

309 PV modules | 2 Inverters | 155 Optimizers

SIMULATION RESULTS

Installed DC Power	Max Achieved AC Power	Annual Usable Solar Production	Annual CO_2 Emission Saved	Annual Equivalent Trees Planted
165.32 kWp	99.90 kW	147.28 MWh	28.48 t	1,308

ANNUAL CONSUMPTION AND PRODUCTION RESULTS

Total Production **147.49** MWh

85%

- To Building 125.87 MWh (85%)
- To Grid 21.41 MWh (15%)

Consumption **650.00** MWh

19% | 81%

19% Energy from solar

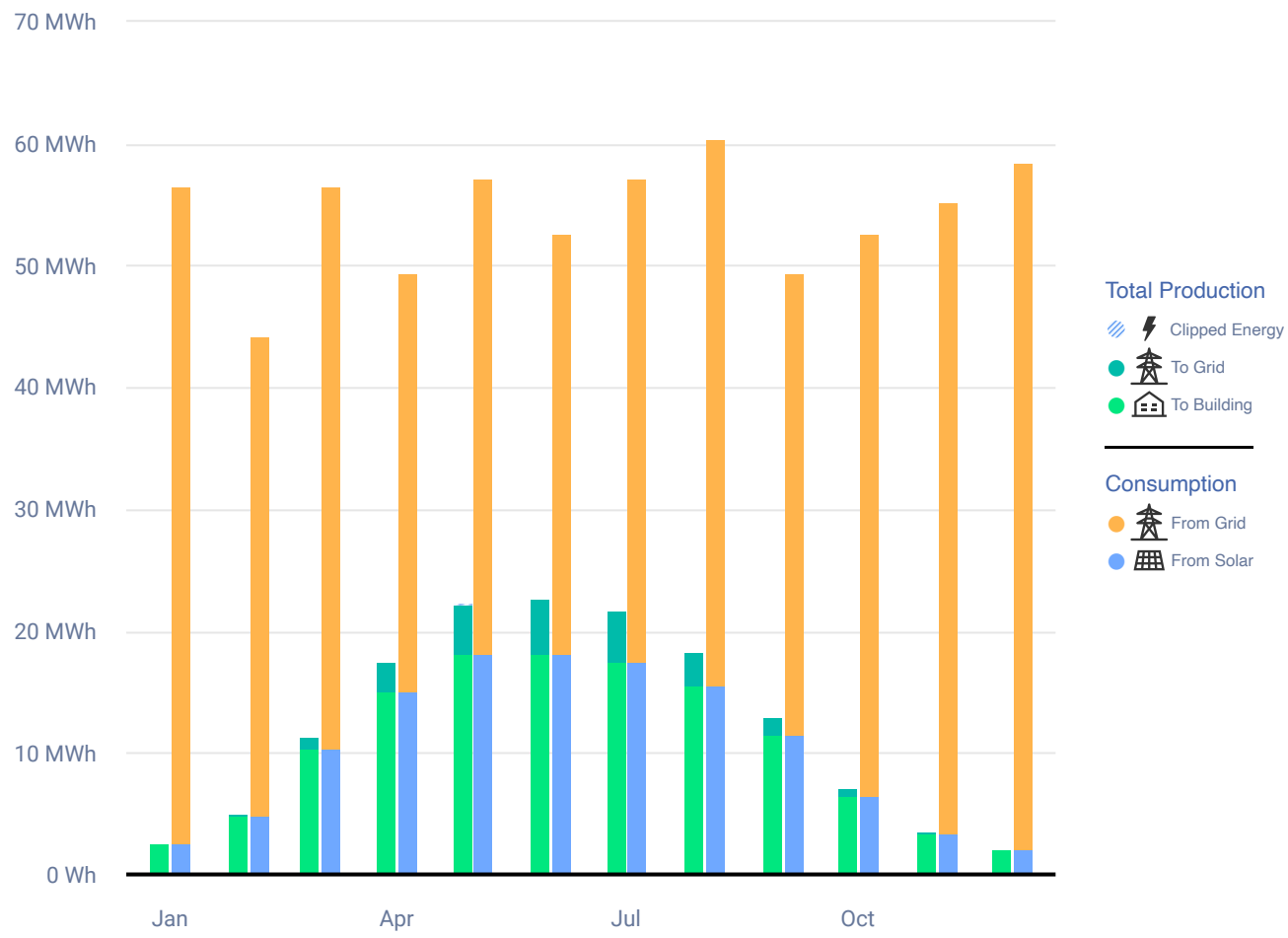
- From Solar 125.87 MWh (19%)
- From Grid 524.13 MWh (81%)

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ESTIMATED MONTHLY ENERGY



Total clipped energy: **0.14%**

PV MODULES

# Module	Model	Peak power	Racking type	Orientation	Azimuth	Tilt
96	JA Solar, JAM60D42-535/LB (user-defined)	51.4 kWp			180°	0°
97	JA Solar, JAM60D42-535/LB (user-defined)	51.9 kWp			1°	6°

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PV MODULES (CONTINUED)

# Module	Model	Peak power	Racking type	Orientation	Azimuth	Tilt
116	JA Solar, JAM60D42-535/LB (user-defined)	62.1 kWp			181°	5°
Total: 309		165.3 kWp				

BILL OF MATERIALS (BOM)

Items	Part Number	Quantity	Price (£)	Total (£)
SE33.3K		1		
SE66.6K Synergy Manager		1		
S1000		155		
JAM60D42-535/LB		309		

ELECTRICAL DESIGN

Inverters & Storage	Strings per inverter	Optimizers per string	PV modules per string
1 xSE66.6K Synergy Manager 99.03kW | 149% Oversizing	**Center Unit**		
	1 x string	19 x S1000 (2:1)	38
	1 x string	18 x S1000 (2:1)	36
	1 x string	18 x S1000 (2:1), 1 x S1000 (1:1)	37
	Left Unit		
	3 x strings	17 x S1000 (2:1)	34

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ELECTRICAL DESIGN (CONTINUED)

Inverters & Storage	Strings per inverter	Optimizers per string	PV modules per string
1 xSE33.3K 44.73kW | 134% Oversizing	1 x string	19 x S1000 (2:1)	38
	1 x string	15 x S1000 (2:1)	30
	1 x string	14 x S1000 (2:1)	28

SYSTEM LOSS DIAGRAM



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SIMULATION PARAMETERS

LOCATION & GRID

Time zone	GMT (London)
Weather station	Manchester-Ringway (12 km away)
Station altitude	69 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%