

COPT OAK

Whitwick Road, Markfield, Leicestershire, LE67 9QB, United Kingdom | Dec 23, 2025



NOTIFICATIONS

 Warning: There is a yield factor loss of 3.34% in this design, please refer to Electrical Design to try and improve your design.



SYSTEM OVERVIEW



44 PV modules



1 Inverter



31 Optimizers

SIMULATION RESULTS



Installed DC Power

20.02 kWp



Max Achieved AC Power

16 kW



Annual Usable Solar Production

15,171 kWh



Annual CO₂ Emission Saved

2.93 t



Annual Equivalent Trees Planted

135



Max Achieved DC Power

16.98 kW



DC/AC Oversizing

106 %



Max Active AC Power

16 kW



Performance Ratio

78 %



Annual Specific Production

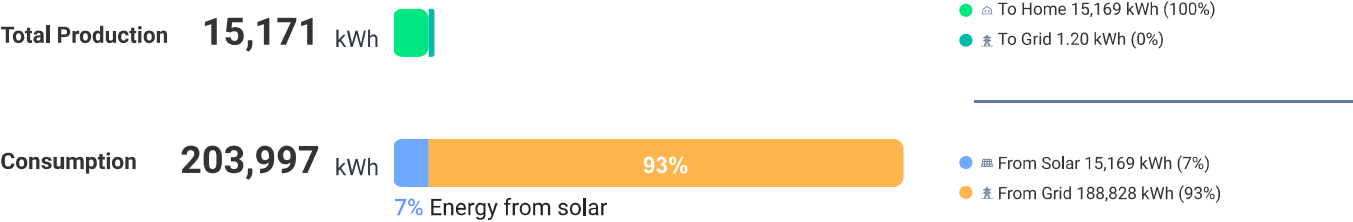
758 kWh/kWp

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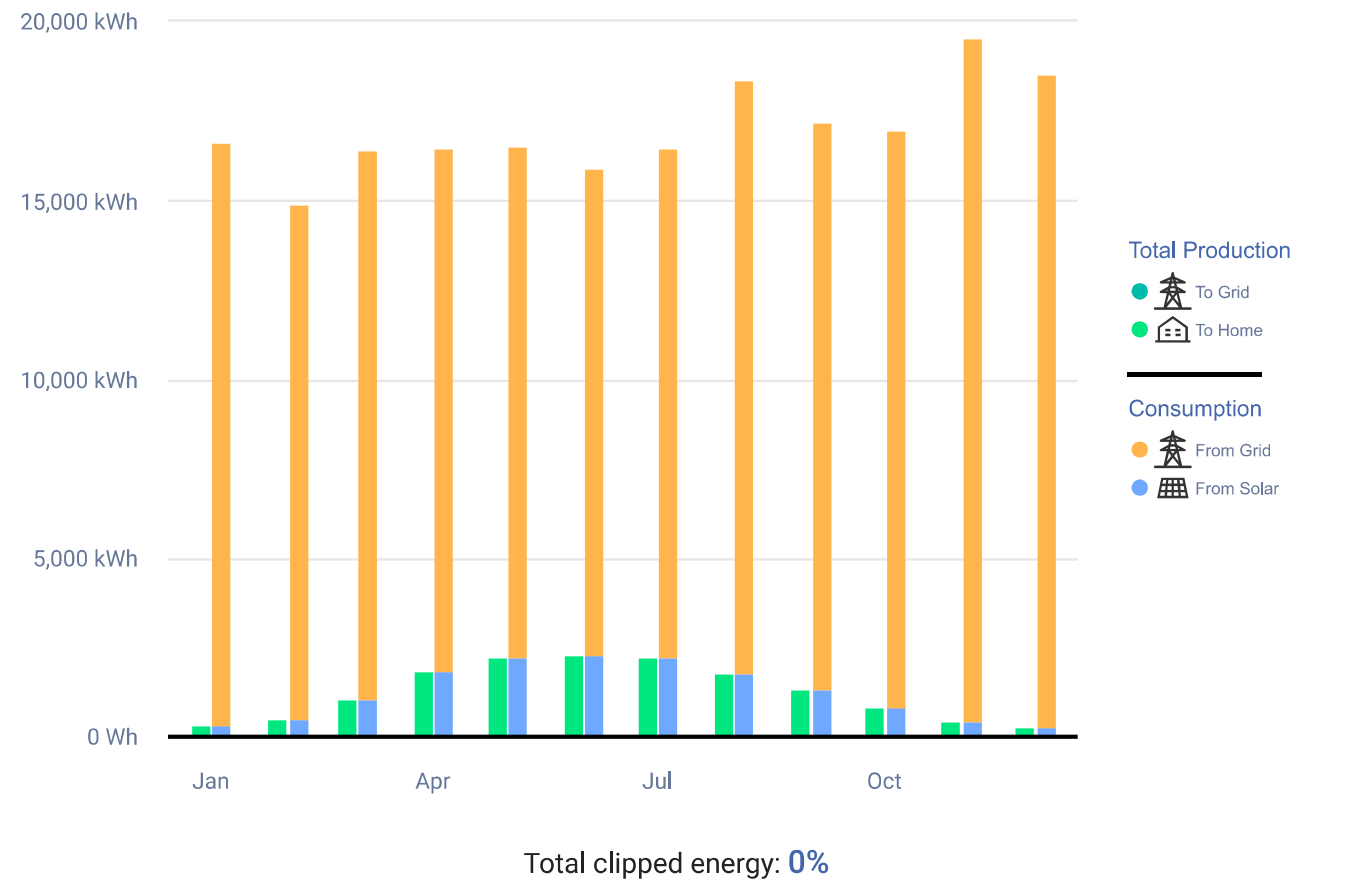
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ANNUAL CONSUMPTION AND PRODUCTION RESULTS



ESTIMATED MONTHLY ENERGY



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PV MODULES

# Module	Model	Peak power	Racking type	Orientation	Azimuth	Tilt
10	Trina Solar Energy, TSM-455NEG9R.28 (Vertex S+)	4.6 kWp			162°	36°
9	Trina Solar Energy, TSM-455NEG9R.28 (Vertex S+)	4.1 kWp			342°	35°
3	Trina Solar Energy, TSM-455NEG9R.28 (Vertex S+)	1.4 kWp			162°	35°
13	Trina Solar Energy, TSM-455NEG9R.28 (Vertex S+)	5.9 kWp			162°	35°
4	Trina Solar Energy, TSM-455NEG9R.28 (Vertex S+)	1.8 kWp			72°	35°
2	Trina Solar Energy, TSM-455NEG9R.28 (Vertex S+)	0.9 kWp			252°	46°
3	Trina Solar Energy, TSM-455NEG9R.28 (Vertex S+)	1.4 kWp			162°	38°
Total:	44	20 kWp				

BILL OF MATERIALS (BOM)

Items	Part Number	Quantity	Price (£)	Total (£)
SE16K Three Phase Inverter, 16kW	SE16K-RW0T0BNN4	1	900.00	900.00
S1000		31		
TSM-455NEG9R.28 (Vertex S+)		44		
Total Price: £ 900.00				

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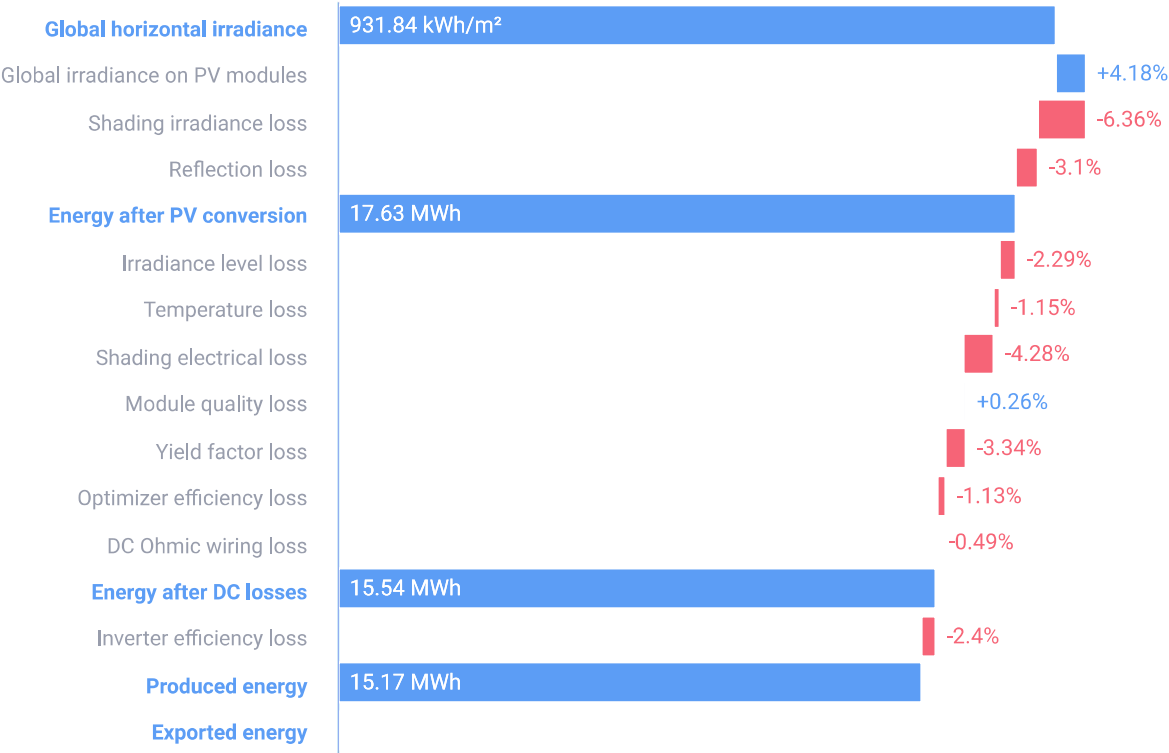
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ELECTRICAL DESIGN

Inverters & Storage	Strings per inverter	Optimizers per string	PV modules per string
 1 x SE16K 16.98kW 106% Oversizing	 1 x string	 17 x S1000	 17
	 1 x string	 13 x S1000 (2:1), 1 x S1000 (1:1)	 27

SYSTEM LOSS DIAGRAM



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SIMULATION PARAMETERS



LOCATION & GRID

Time zone	GMT (London)
Weather station	Leicester (16 km away)
Station altitude	86 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 Uc (const) Flush mount	20
Thermal loss factor Uc (const) Tilted	29
LID loss factor	0%
System unavailability	0%