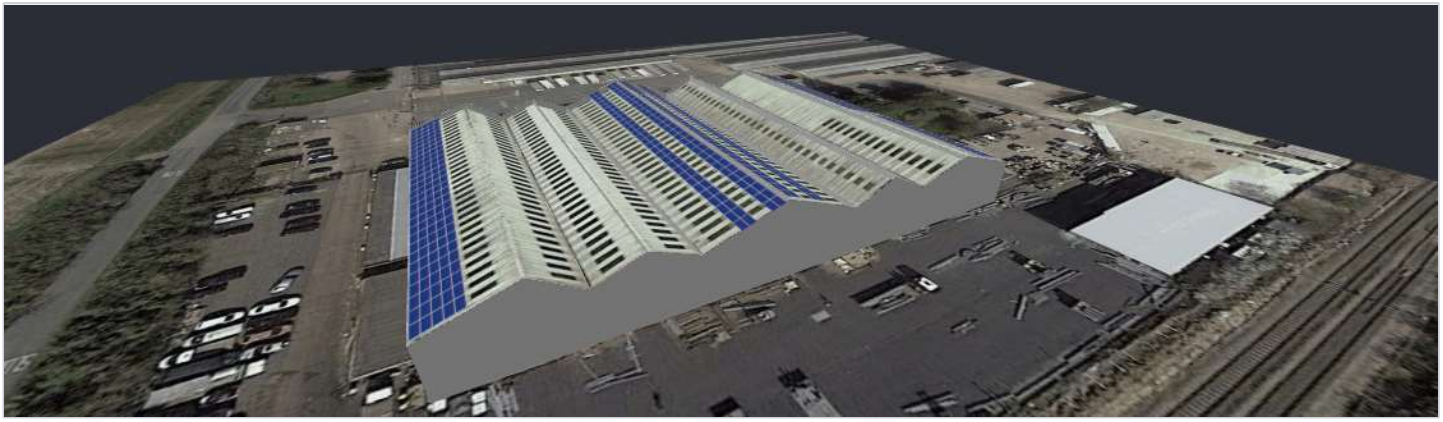
COMMERCIAL SOLAR DESIGN EXAMPLE

West Horndon, CM13 3ED, United Kingdom | Bradley Lucas | Mar 21, 2023



SYSTEM OVERVIEW

551 PV modules | 2 Inverters | 277 Optimizers

SIMULATION RESULTS

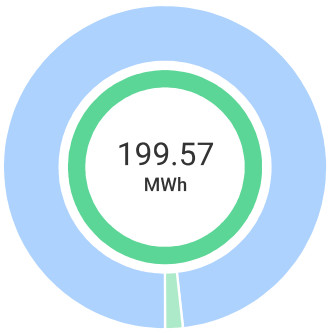
Installed DC Power	Max Achieved AC Power	Annual Energy Production	CO2 Emission Saved	Equivalent Trees Planted
234.18 kWp	188.58 kW	199.57 MWh	38.59 t	1,773

SYSTEM PRODUCTION

Total Production - 100 %
199.57 MWh

Self-consumption - 98 %
196.06 MWh

Export - 2 %
3.51 MWh

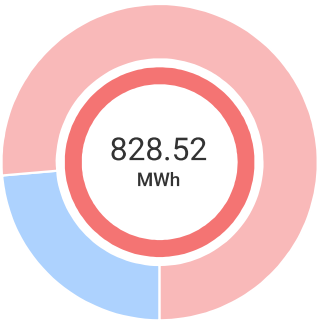


CONSUMPTION

Total Consumption - 100 %
828.52 MWh

Self-consumption - 24 %
196.06 MWh

Import - 76 %
632.46 MWh



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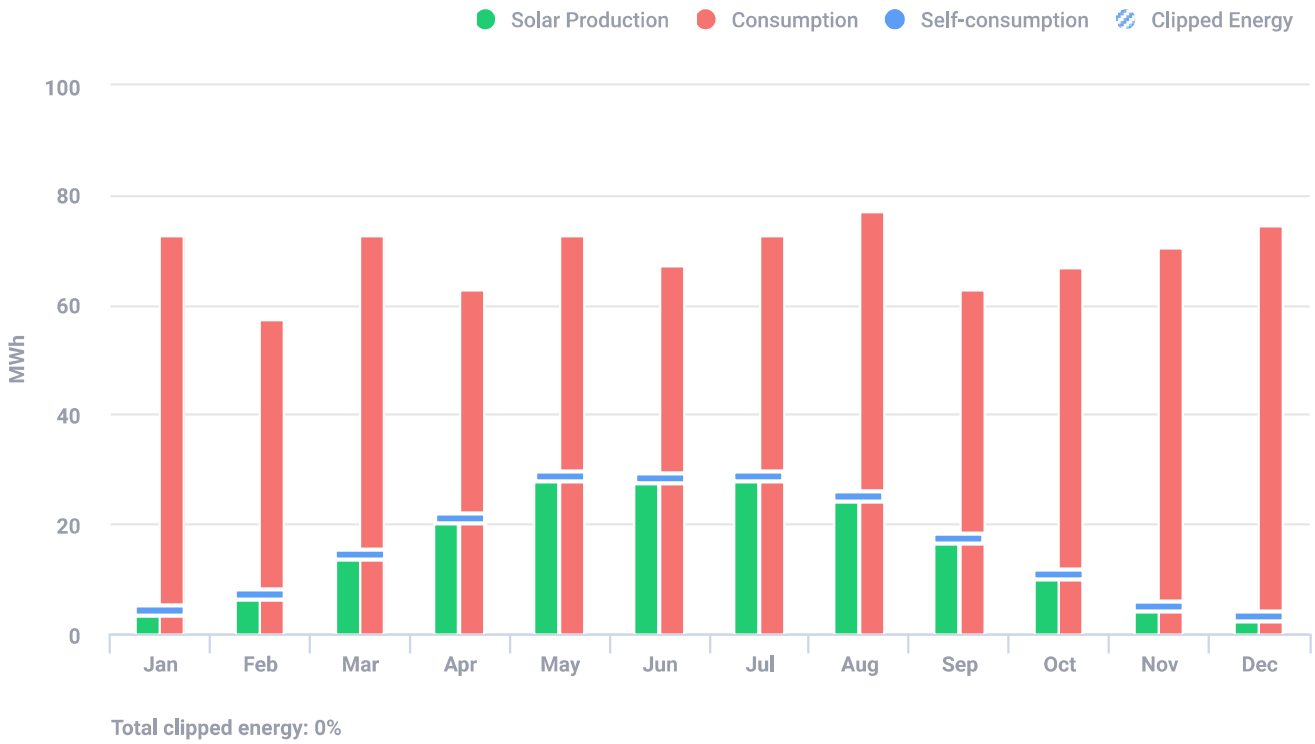
ESTIMATED MONTHLY ENERGY



Total clipped energy: 0%

PV MODULES

# Module	Model	Peak power	Racking type	Orientation	Azimuth	Tilt
140	Longi Solar, LR4-72HBD-425M (user-defined)	59.5 kWp			265°	20°
116	Longi Solar, LR4-72HBD-425M (user-defined)	49.3 kWp			85°	20°
179	Longi Solar, LR4-72HBD-425M (user-defined)	76.1 kWp			85°	17°
116	Longi Solar, LR4-72HBD-425M (user-defined)	49.3 kWp			265°	20°
Total: 551		234.2 kWp				

BILL OF MATERIALS (BOM)

Items	Part Number	Quantity	Price (£)	Total (£)
SE100K Manager		1		

COMMERCIAL SOLAR DESIGN EXAMPLE

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BILL OF MATERIALS (BOM) (CONTINUED)

Items	Part Number	Quantity	Price (£)	Total (£)
SE90K Manager		1		
P850		277		
LR4-72HBD-425M		551		

ELECTRICAL DESIGN

Inverters & Storage	Strings per inverter	Optimizers per string	PV modules per string
1 xSE100K Manager 115.31kW | 115% Oversizing			
	Center Unit		
	2 x strings	18 x P850 (2:1), 1 x P850 (1:1)	37
	1 x string	18 x P850 (2:1)	36
	Left Unit		
	1 x string	17 x P850 (2:1), 1 x P850 (1:1)	35
	1 x string	18 x P850 (2:1)	36
	1 x string	17 x P850 (2:1)	34
	Right Unit		
	1 x string	18 x P850 (2:1)	36
	2 x strings	17 x P850 (2:1)	34

COMMERCIAL SOLAR DESIGN EXAMPLE

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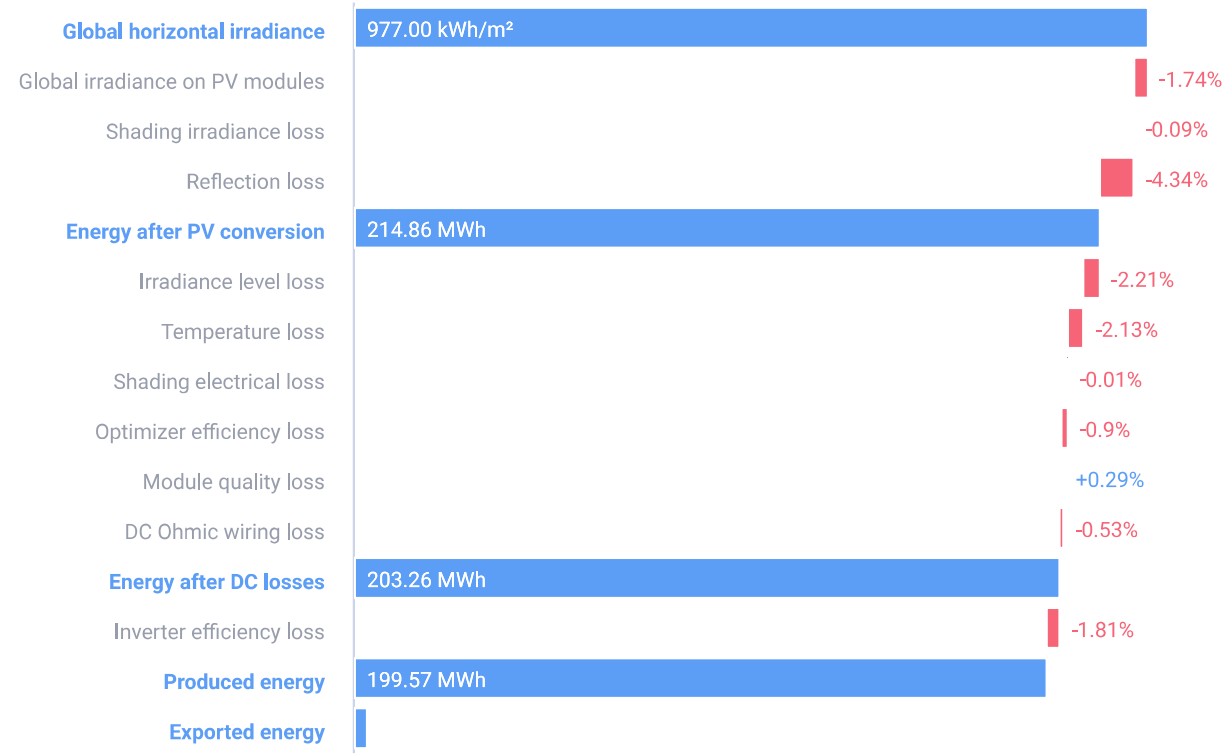
ELECTRICAL DESIGN (CONTINUED)

Inverters & Storage	Strings per inverter	Optimizers per string	PV modules per string
1 xSE90K Manager 82.88kW | 92% Oversizing			
	Center Unit		
	1 x string	20 x P850 (2:1)	40
	1 x string	19 x P850 (2:1)	38
	Left Unit		
	2 x strings	19 x P850 (2:1)	38
	Right Unit		
	1 x string	20 x P850 (2:1)	40
	1 x string	19 x P850 (2:1)	38

SYSTEM LOSS DIAGRAM



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SIMULATION PARAMETERS

LOCATION & GRID

Time zone	GMT (London)
Weather station	Greenwich (24.83 km away)
Station altitude	11 m
Station data source	Meteonorm 7.1
Grid	400V L-L, 230V L-N

LOSS FACTORS

Near shading	Enabled
Albedo	0.20
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%