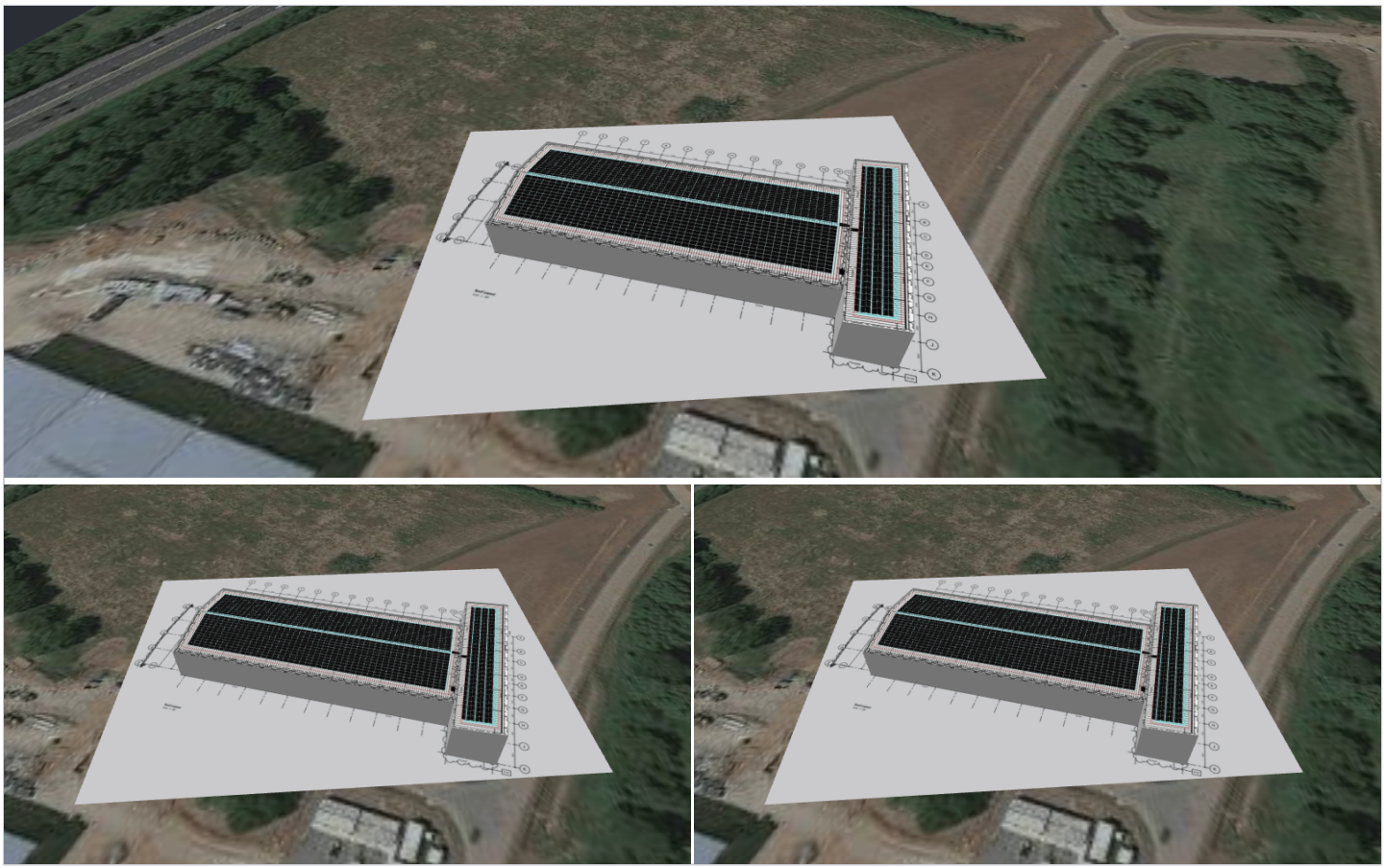
IONOS WORCESTER V6

Worcester, WR4 0AD, United Kingdom | Richard Williams | 29 Apr 2021



SYSTEM OVERVIEW

1399 PV modules | 5 Inverters | 700 Optimizers

SIMULATION RESULTS

Installed DC Power	Max Achieved AC Power	Annual Energy Production	CO2 Emission Saved	Equivalent Trees Planted
524.63 kWp	381.20 kW	441.22 MWh	123.98 t	5,694

Max Achieved DC Power	DC/AC Oversizing	Max Active AC Power	Performance Ratio	Performance Index
457.68 kW	120 %	381.20 kW	89 %	841 kWh/kWp

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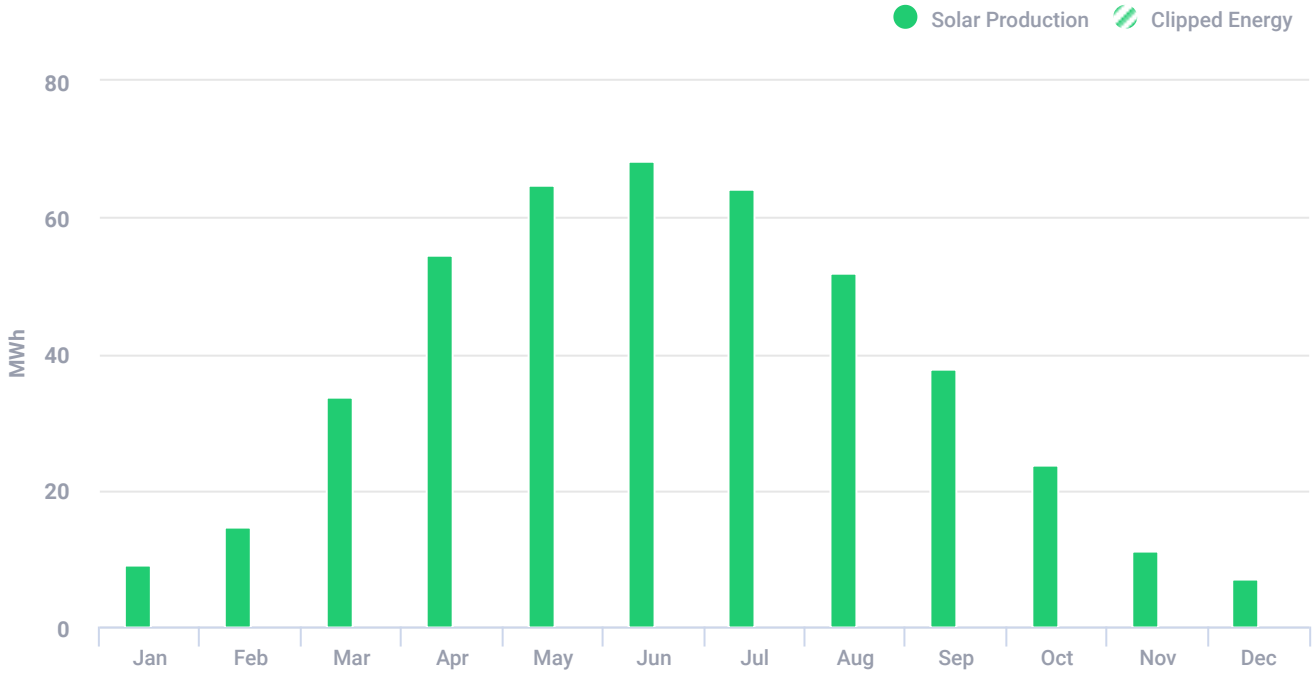
ESTIMATED MONTHLY ENERGY



Total clipped energy: 0.07%

Month	Solar Production (kWh)	Consumption (kWh)	Self-consumption (kWh)	Clipped Energy (kWh)
Jan	9,175	-	-	-
Feb	14,738	-	-	-
Mar	33,584	-	-	-
Apr	54,523	-	-	101
May	64,863	-	-	3
Jun	68,359	-	-	197
Jul	64,138	-	-	7
Aug	51,934	-	-	-
Sep	37,916	-	-	1
Oct	23,877	-	-	-
Nov	11,153	-	-	-
Dec	6,955	-	-	-

PV MODULES

# Module	Model	Peak power	Racking type	Orientation	Azimuth	Tilt
598	Longi Solar, LR4-60HPH-375M	224.3 kWp			195°	10°

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PV MODULES (CONTINUED)

# Module	Model	Peak power	Racking type	Orientation	Azimuth	Tilt
87	Longi Solar, LR4-60HPH-375M	32.6 kWp			285°	15°
116	Longi Solar, LR4-60HPH-375M	43.5 kWp			104°	6°
598	Longi Solar, LR4-60HPH-375M	224.3 kWp			15°	10°
Total: 1399		524.6 kWp				

BILL OF MATERIALS (BOM)

Items	Quantity
SE82.8K	4
SE50K	1
P801	700
Longi Solar, LR4-60HPH-375M	1399

ELECTRICAL DESIGN

Inverters & Storage	Strings per inverter	Optimizers per string	PV modules per string
1 x SE82.8K 99.87kW | 121%	Primary unit		
	1 x string	15 x P801 (2:1)	30
	2 x strings	16 x P801 (2:1)	32
	Secondary unit 1		
	1 x string	15 x P801 (2:1)	30
	2 x strings	16 x P801 (2:1)	32
	Secondary unit 2		
	1 x string	15 x P801 (2:1)	30
	2 x strings	16 x P801 (2:1)	32

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ELECTRICAL DESIGN (CONTINUED)

Inverters & Storage	Strings per inverter	Optimizers per string	PV modules per string
1 x SE82.8K 101.78kW | 123%	Primary unit		
	1 x string	18 x P801 (2:1)	36
	2 x strings	19 x P801 (2:1)	38
	Secondary unit 1		
	3 x strings	19 x P801 (2:1)	38
	Secondary unit 2		
	1 x string	18 x P801 (2:1)	36
	2 x strings	19 x P801 (2:1)	38
1 x SE82.8K 96.14kW | 116%	Primary unit		
	3 x strings	18 x P801 (2:1)	36
	Secondary unit 1		
	1 x string	15 x P801 (2:1)	30
	1 x string	17 x P801 (2:1)	34
	1 x string	19 x P801 (2:1)	38
	Secondary unit 2		
	1 x string	14 x P801 (2:1)	28
	1 x string	14 x P801 (2:1), 1 x P801 (1:1)	29
	1 x string	18 x P801 (2:1)	36
1 x SE82.8K 99.69kW | 120%	Primary unit		
	1 x string	15 x P801 (2:1)	30
	1 x string	16 x P801 (2:1)	32
	1 x string	19 x P801 (2:1)	38
	Secondary unit 1		
	1 x string	15 x P801 (2:1)	30
	1 x string	16 x P801 (2:1)	32
	1 x string	19 x P801 (2:1)	38
	Secondary unit 2		
	1 x string	16 x P801 (2:1)	32
	1 x string	18 x P801 (2:1)	36
	1 x string	19 x P801 (2:1)	38

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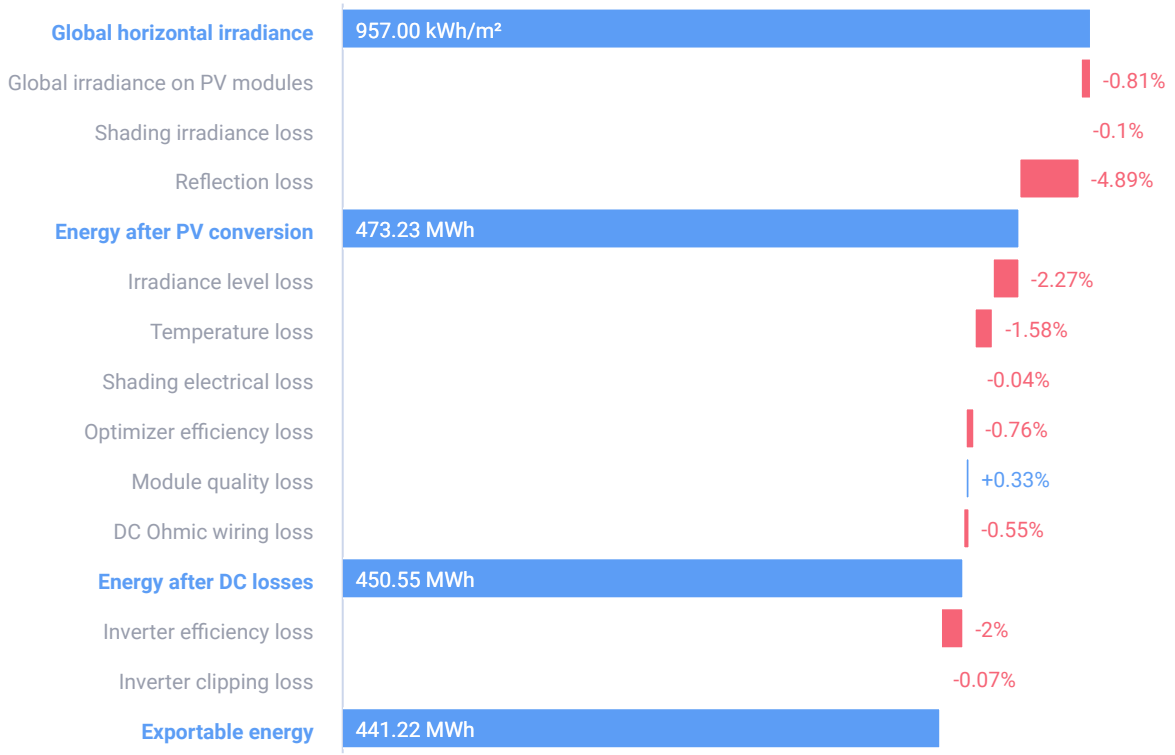
ELECTRICAL DESIGN (CONTINUED)

Inverters & Storage	Strings per inverter	Optimizers per string	PV modules per string
1 x SE50K 60.2kW | 120%	Primary unit		
	3 x strings	14 x P801 (2:1)	28
	Secondary unit 1		
	2 x strings	14 x P801 (2:1)	28
	1 x string	15 x P801 (2:1)	30

SYSTEM LOSS DIAGRAM



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SIMULATION PARAMETERS

LOCATION & GRID

Time zone	BST (London)
Weather station	Worcester (4.69 km away)
Station altitude	27 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%