ONE LEISURE ST IVES

Ansley Way 68, St. Ives, PE27 6SN, United Kingdom | 9 Jan 2025

Drakes RENEWABLES



SYSTEM OVERVIEW

120 PV modules | 1 Inverter | 60 Optimizers

FINANCIAL OVERVIEW

Net Payments	Lifetime Bill Savings (NPV)	System Profit (NPV)	Internal Return Rate (IRR)	Payback Period
£ 49,293	£ 219,010	£ 169,717	23.2 %	4.6 years

SIMULATION RESULTS

Installed DC Power	Max Achieved AC Power	Annual Solar Energy Production	Annual CO2 Emission Saved	Annual Equivalent Trees Planted
54.00 kWp	33.30 kW	51.15 MWh	9.89 t	454

ANNUAL CONSUMPTION AND PRODUCTION RESULTS

Production 51.68 MWh



- To Building 20.82 MWh (40%)
- To Grid 30.33 MWh (59%)
- Clipped Energy 0.53 MWh (1%)

Consumption 145.76 MWh



- From Solar 20.82 MWh (14%)
- From Grid 124.94 MWh (86%)

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PV MODULES

# Module	Model	Peak power	Racking type	Orientation	Azimuth	Tilt
60	Longi Solar, LR5-54HTH-450M Scientists	27 kWp			88°	18°
60	Longi Solar, LR5-54HTH-450M Scientists	27 kWp			268°	18°
Total: 120		54 kWp				



ESTIMATED BILL SAVINGS YEAR 1

Annual

Current Annual Bill	Annual Bill with SolarEdge	Net Bill Annual Savings	Bill Offset
£ 43,990.97	£ 34,067.78	£ 9,923.19	22.56 %

Estimated Net Lifetime Bill Savings

£ 219,010

Utility Provider: **Eon** | Utility Rate: **HDC at St Ives (0.3018 £/kWh)**

Export Rate: **Scottish Power (0.12 £/kWh)**

Feb	1,832	1,595	237	-	17,754	1,595	16,159
Mar	3,831	2,360	1,471	-	15,540	2,360	13,180
Apr	6,194	2,206	3,988	20	9,355	2,206	7,149
May	7,258	1,941	5,317	182	6,702	1,941	4,761
Jun	7,774	1,918	5,856	144	5,570	1,918	3,652
Jul	7,387	1,858	5,529	147	5,713	1,858	3,855
Aug	6,105	1,841	4,264	39	7,016	1,841	5,175
Sep	4,725	2,101	2,624	-	10,067	2,101	7,966
Oct	2,737	1,876	861	-	15,272	1,876	13,396
Nov	1,354	1,214	140	-	15,457	1,214	14,243
Dec	875	864	12	-	16,957	864	16,093

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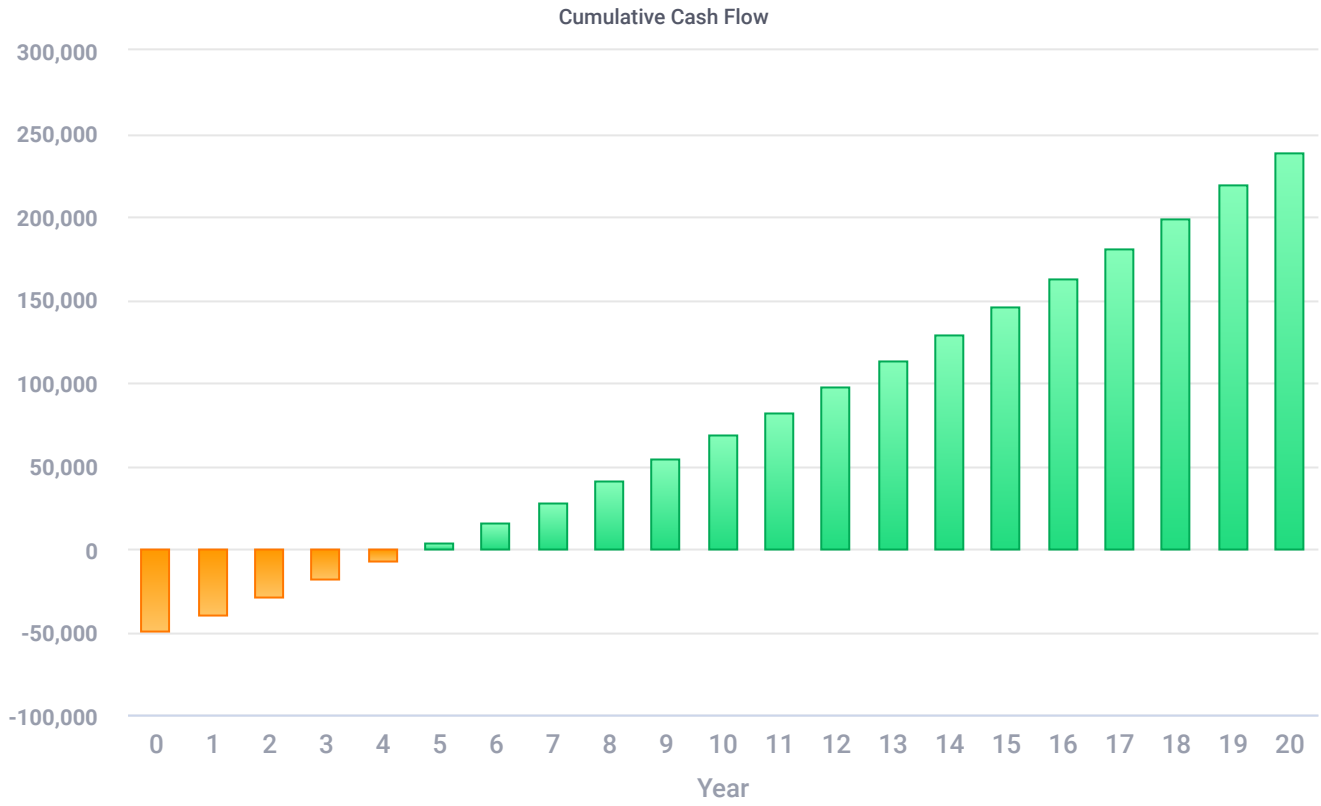
DETAILED FINANCIAL ANALYSIS

System Price	Maintenance Cost (NPV)	Returns from Incentives (NPV)	Net Payments	Lifetime Bill Savings (NPV)
£ 49,293	£ N/A	£ N/A	£ 49,293	£ 219,010

System Profit (NPV)	Internal Return Rate (IRR)	Return Of Investment (ROI)	Levelized Cost Of Energy (LCOE)	Payback Period
£ 169,717	23.2 %	344.3 %	£/kWh 0.065	4.6 years



YEARLY CASH FLOW

# Year	System Price	Net Bill Savings	Annual Cash Flow	Cumulative Cash Flow
0	£ -49,293.00	£ 0.00	£ -49,293.00	£ -49,293.00
1		£ 9,923.19	£ 9,923.19	£ -39,369.81

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Drakes RENEWABLES

YEARLY CASH FLOW (CONTINUED)

# Year	System Price	Net Bill Savings	Annual Cash Flow	Cumulative Cash Flow
2		£ 10,281.96	£ 10,281.96	£ -29,087.85
3		£ 10,656.12	£ 10,656.12	£ -18,431.72
4		£ 11,046.40	£ 11,046.40	£ -7,385.32
5		£ 11,453.60	£ 11,453.60	£ 4,068.28
6		£ 11,878.53	£ 11,878.53	£ 15,946.81
7		£ 12,321.94	£ 12,321.94	£ 28,268.75
8		£ 12,784.77	£ 12,784.77	£ 41,053.52
9		£ 13,267.96	£ 13,267.96	£ 54,321.48
10		£ 13,772.39	£ 13,772.39	£ 68,093.87
11		£ 14,299.02	£ 14,299.02	£ 82,392.89
12		£ 14,848.92	£ 14,848.92	£ 97,241.81
13		£ 15,423.22	£ 15,423.22	£ 112,665.03
14		£ 16,022.97	£ 16,022.97	£ 128,688.00
15		£ 16,649.41	£ 16,649.41	£ 145,337.42
16		£ 17,303.86	£ 17,303.86	£ 162,641.27
17		£ 17,987.62	£ 17,987.62	£ 180,628.89
18		£ 18,702.12	£ 18,702.12	£ 199,331.01
19		£ 19,448.85	£ 19,448.85	£ 218,779.86
20		£ 20,229.32	£ 20,229.32	£ 239,009.18
Total:		£ 288,302.18	£ 239,009.18	

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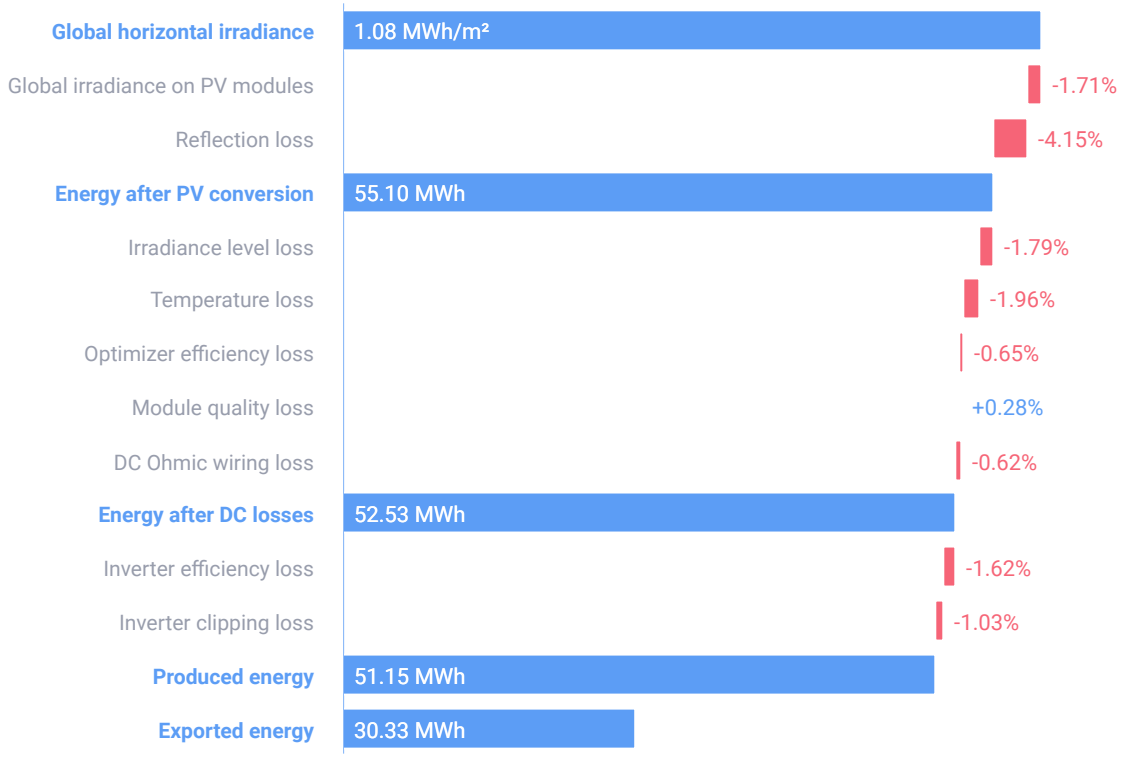
ELECTRICAL DESIGN

Inverters & Storage	Strings per inverter	Optimizers per string	PV modules per string
1 xSE33.3K 45.56kW | 137% Oversizing	4 x strings	15 x P850 (Waiver conditions apply) (2:1)	30

SYSTEM LOSS DIAGRAM



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SIMULATION PARAMETERS

LOCATION & GRID

Time zone	GMT (London)
Weather station	Cambridge (24.01 km away)
Station altitude	15 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%