



South East Solar & Electrical Ltd

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Customer No.: SPUK635915

Project Name: SPUK635915 - Paul Winchester

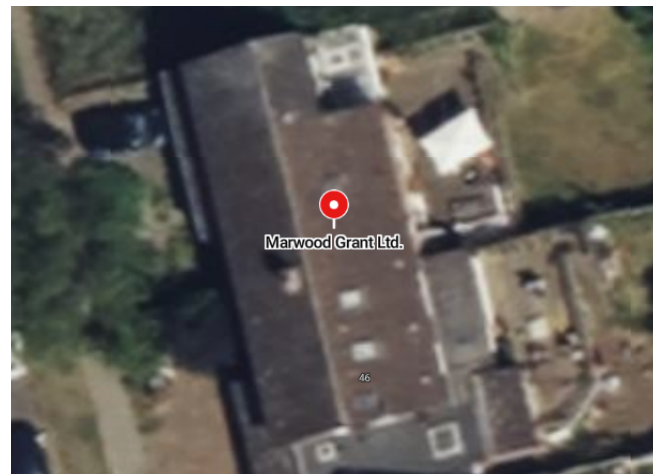
Offer no.: SPUK635915

16/06/2025

Your PV system from South East Solar & Electrical Ltd

Address of Installation

44 Cowslip Hill
Letchworth
SG6 4EZ



Project Description:

Forecasting reports are calculated assuming a rate of inflation slightly below the prevailing rate reported by The Office of National Statistic's Consumer Price Index.

Project Overview



Figure: Overview Image, 3D Design

PV System

3D, Grid-connected PV System with Electrical Appliances and Battery Systems

Climate Data	Bracknell, GBR (2001 - 2020)
Values source	Meteonorm 8.2
PV Generator Output	10.12 kWp
PV Generator Surface	46.0 m ²
Number of PV Modules	23
Number of Inverters	2
No. of battery systems	1

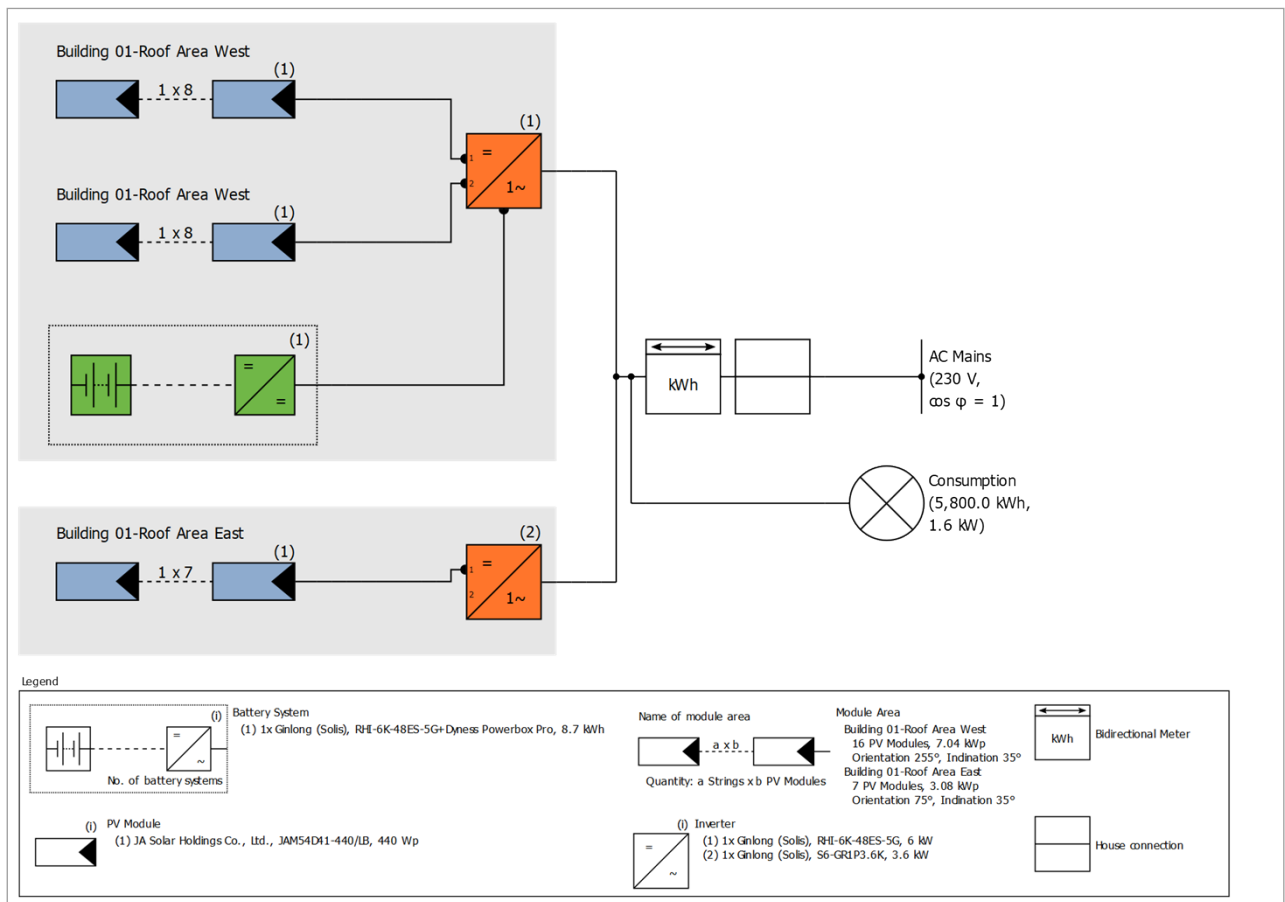


Figure: Schematic diagram

Production Forecast

Production Forecast

PV Generator Output	10.12 kWp
Spec. Annual Yield	850.43 kWh/kWp
Performance Ratio (PR)	89.80 %
Yield Reduction due to Shading	2.1 %
PV Generator Energy (AC grid) with battery	8,295 kWh/Year
Direct Own Use	3,853 kWh/Year
Clipping at Feed-in Point	0 kWh/Year
Grid Export	4,441 kWh/Year
Own Power Consumption	46.4 %
CO ₂ Emissions avoided	1,830 kg / year
Level of Self-sufficiency	66.4 %

Financial Analysis

Your Gain

Total investment costs	11,416.00 £
Internal Rate of Return (IRR)	13.34 %
Amortization Period	8.0 Years
Electricity Production Costs	0.0551 £/kWh
Energy Balance/Feed-in Concept	Surplus Feed-in

The results have been calculated with a mathematical model calculation from Valentin Software GmbH (PV*SOL algorithms). The actual yields from the solar power system may differ as a result of weather variations, the efficiency of the modules and inverter, and other factors.

Set-up of the System

Module Areas

1. Module Area - Building 01-Roof Area West

PV Generator, 1. Module Area - Building 01-Roof Area West

Name	Building 01-Roof Area West
PV Modules	16 x JAM54D41-440/LB (v1)
Manufacturer	JA Solar Holdings Co., Ltd.
Inclination	35 °
Orientation	West 255 °
Installation Type	Roof parallel
PV Generator Surface	32.0 m ²

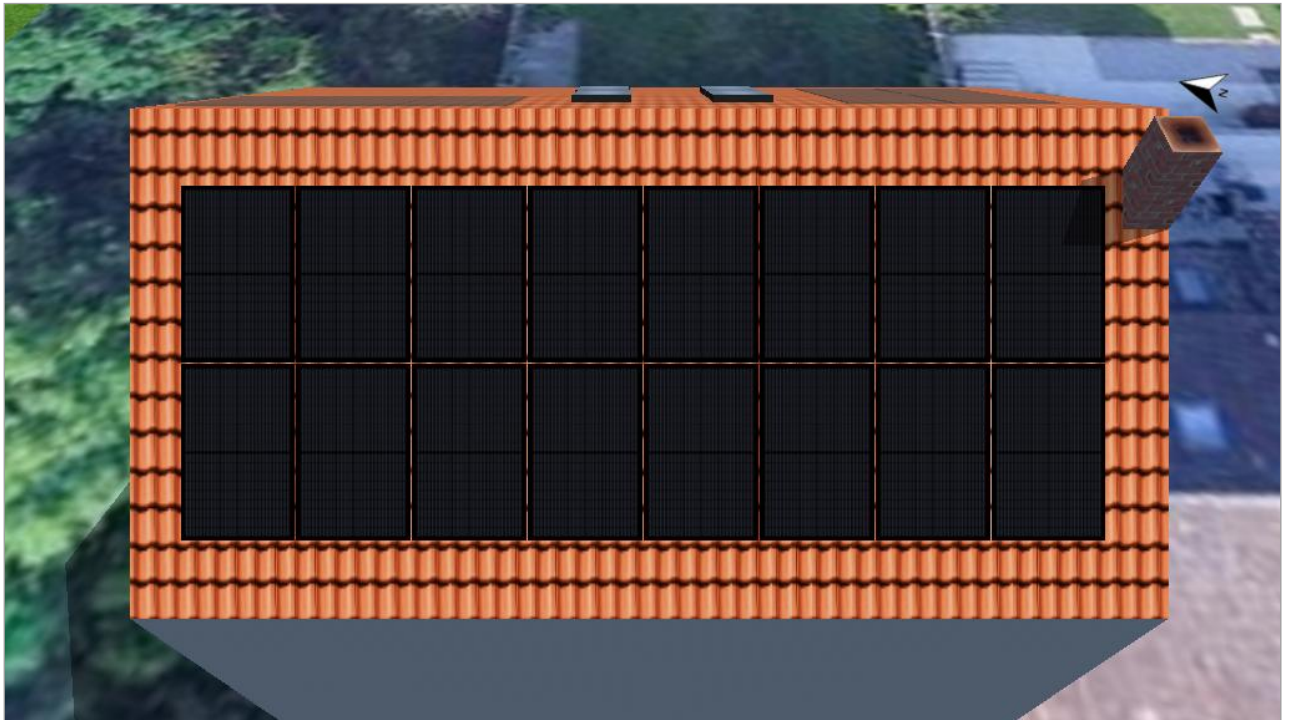


Figure: 1. Module Area - Building 01-Roof Area West

2. Module Area - Building 01-Roof Area East

PV Generator, 2. Module Area - Building 01-Roof Area East

Name	Building 01-Roof Area East
PV Modules	7 x JAM54D41-440/LB (v1)
Manufacturer	JA Solar Holdings Co., Ltd.
Inclination	35 °
Orientation	East 75 °
Installation Type	Roof parallel
PV Generator Surface	14.0 m ²

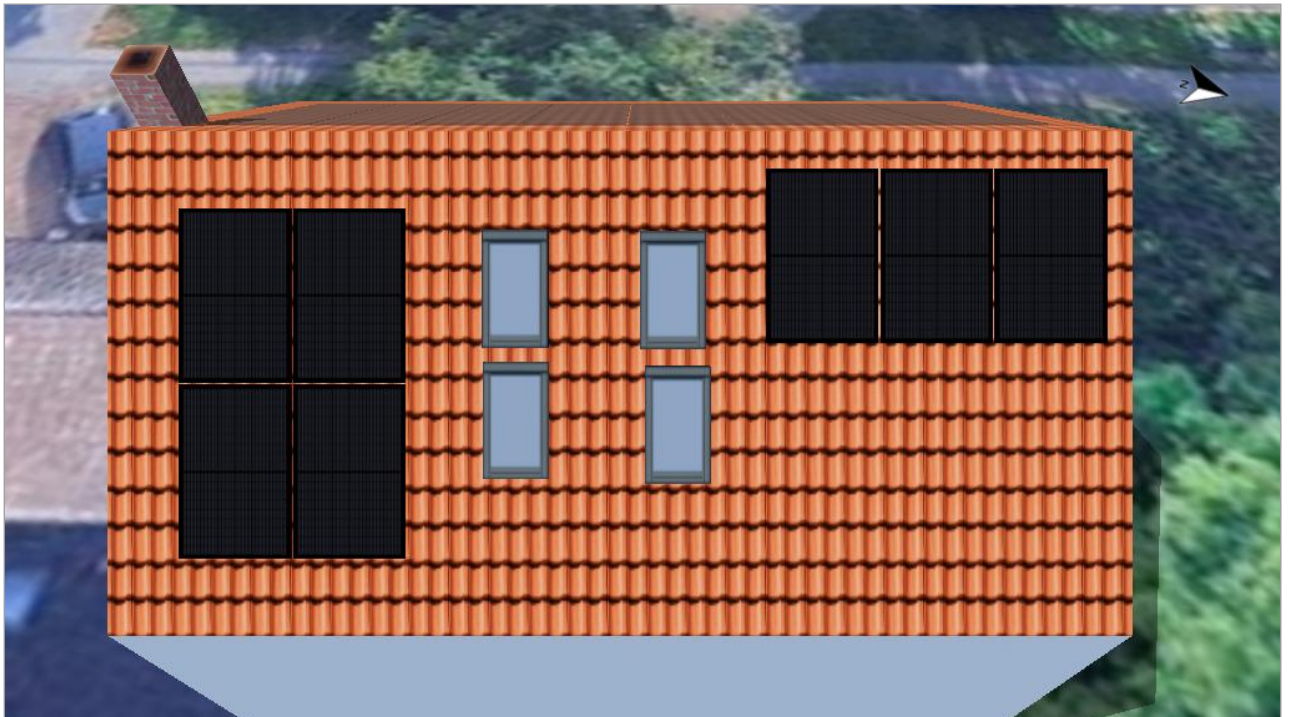


Figure: 2. Module Area - Building 01-Roof Area East

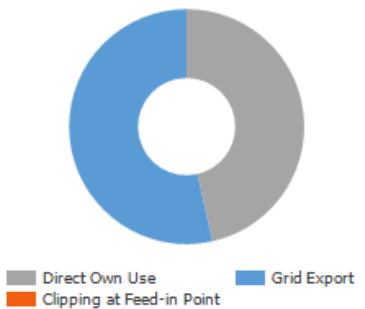
Simulation Results

Results Total System

PV System

PV Generator Output	10.12 kWp
Spec. Annual Yield	850.43 kWh/kWp
Performance Ratio (PR)	89.80 %
Yield Reduction due to Shading	2.1 %
PV Generator Energy (AC grid) with battery	8,295 kWh/Year
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Grid Export	4,441 kWh/Year
Own Power Consumption	46.4 %
CO ₂ Emissions avoided	1,830 kg / year

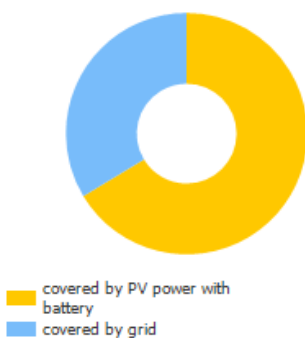
PV Generator Energy (AC grid) with battery



Appliances

Appliances	5,800 kWh/Year
Standby Consumption (Inverter)	10 kWh/Year
Total Consumption	5,810 kWh/Year
covered by PV power with battery	3,853 kWh/Year
covered by grid	1,955 kWh/Year
Solar Fraction	66.4 %

Total Consumption



Battery System

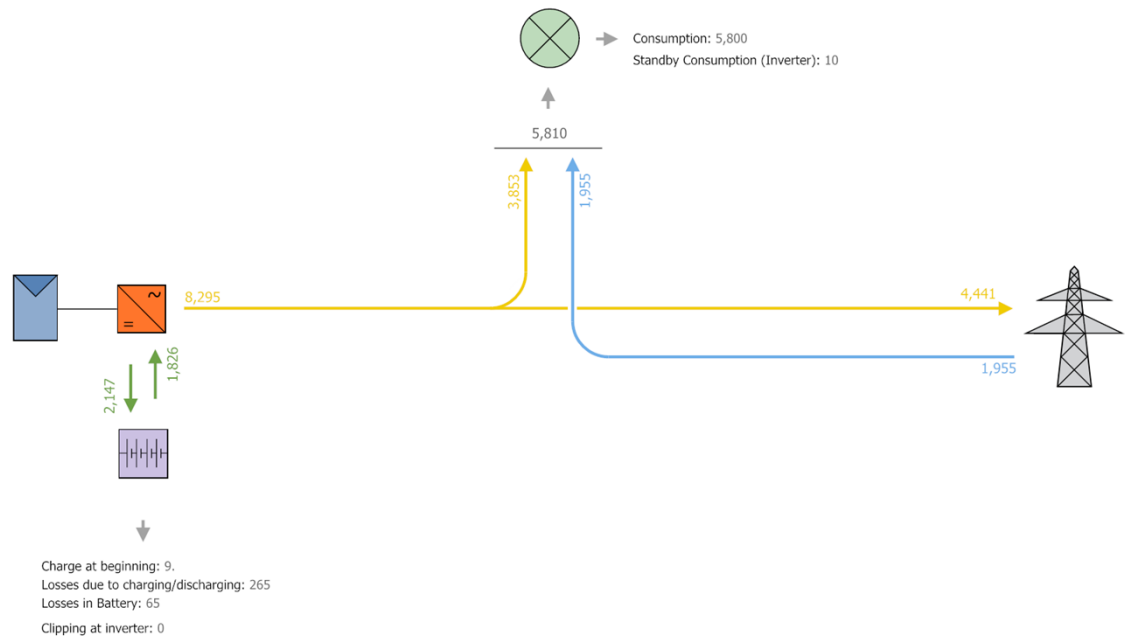
Charge at beginning	9 kWh
Battery Charge (PV System)	2,147 kWh/Year
Battery Energy for the Covering of Consumption	1,826 kWh/Year
Battery discharge into the grid	0 kWh/Year
Losses due to charging/discharging	265 kWh/Year
Losses in Battery	65 kWh/Year
Cycle Load	6.5 %
Service Life	15 Years

Level of Self-sufficiency

Total Consumption	5,810 kWh/Year
covered by grid	1,955 kWh/Year
Level of Self-sufficiency	66.4 %

Energy Flow Graph

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All values in kWh
Small deviations in the totals can occur due to rounding
created with PV*SOL

Figure: Energy flow

Financial Analysis

Overview

System Data

Grid Export in the first year (incl. module degradation)	4,441 kWh/Year
PV Generator Output	10.1 kWp
Start of Operation of the System	20/05/2025
Assessment Period	25 Years
Interest on Capital	0 %

Economic Parameters

Internal Rate of Return (IRR)	13.34 %
Accrued Cash Flow (Cash Balance)	37,644.27 £
Amortization Period	8.0 Years
Electricity Production Costs	0.0551 £/kWh

Payment Overview

Specific Investment Costs	1,128.06 £/kWp
Investment Costs	11,416.00 £
One-off Payments	0.00 £
Incoming Subsidies	0.00 £
Annual Costs	0.00 £/Year
Other Revenue or Savings	0.00 £/Year

Remuneration and Savings

Total Payment from Utility in First Year	244.23 £/Year
First year savings	1,038.16 £/Year

SEG - Octopus Energy - Outgoing Fixed - SEG eligible

Validity	01/01/2020 - 31/12/2039
Specific feed-in / export Remuneration	0.055 £/kWh
Feed-in / Export Tariff	244.2342 £/Year

27p/kW (EDF Energy)

Energy Price	0.27 £/kWh
Base Price	14 £/Month
Inflation Rate for Energy Price	4 %/Year

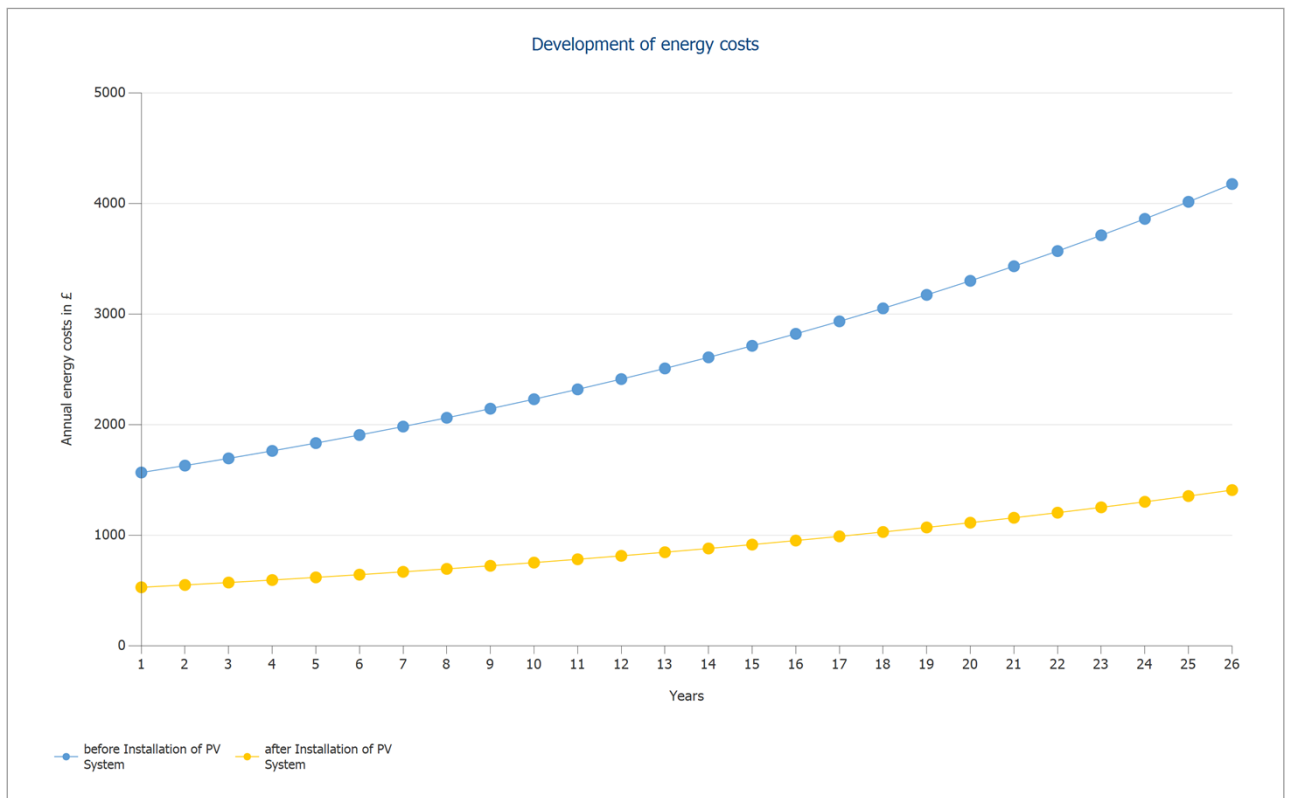


Figure: Development of energy costs

Cash flow

Cash flow

	Year 1	Year 2	Year 3	Year 4	Year 5
Investments	-£11,416.00	£0.00	£0.00	£0.00	£0.00
Feed-in / Export Tariff	£219.30	£244.23	£244.23	£244.23	£244.23
Electricity Savings	£1,008.67	£1,079.68	£1,122.87	£1,167.79	£1,214.50
Annual Cash Flow	-£10,188.02	£1,323.92	£1,367.11	£1,412.02	£1,458.73
Accrued Cash Flow (Cash Balance)	-£10,188.02	-£8,864.10	-£7,497.00	-£6,084.98	-£4,626.24

Cash flow

	Year 6	Year 7	Year 8	Year 9	Year 10
Investments	£0.00	£0.00	£0.00	£0.00	£0.00
Feed-in / Export Tariff	£244.23	£244.23	£244.23	£244.23	£244.23
Electricity Savings	£1,263.08	£1,313.60	£1,366.15	£1,420.79	£1,477.62
Annual Cash Flow	£1,507.31	£1,557.84	£1,610.38	£1,665.03	£1,721.86
Accrued Cash Flow (Cash Balance)	-£3,118.93	-£1,561.10	£49.28	£1,714.31	£3,436.16

Cash flow

	Year 11	Year 12	Year 13	Year 14	Year 15
Investments	£0.00	£0.00	£0.00	£0.00	£0.00
Feed-in / Export Tariff	£244.23	£244.23	£244.23	£244.23	£240.06
Electricity Savings	£1,536.73	£1,598.20	£1,662.12	£1,728.61	£1,797.75
Annual Cash Flow	£1,780.96	£1,842.43	£1,906.36	£1,972.84	£2,037.82
Accrued Cash Flow (Cash Balance)	£5,217.13	£7,059.56	£8,965.92	£10,938.76	£12,976.57

Cash flow

	Year 16	Year 17	Year 18	Year 19	Year 20
Investments	£0.00	£0.00	£0.00	£0.00	£0.00
Feed-in / Export Tariff	£222.03	£222.03	£222.03	£222.03	£222.03
Electricity Savings	£1,869.66	£1,944.45	£2,022.23	£2,103.12	£2,187.24
Annual Cash Flow	£2,091.70	£2,166.48	£2,244.26	£2,325.15	£2,409.27
Accrued Cash Flow (Cash Balance)	£15,068.27	£17,234.75	£19,479.01	£21,804.16	£24,213.43

Cash flow

	Year 21	Year 22	Year 23	Year 24	Year 25
Investments	£0.00	£0.00	£0.00	£0.00	£0.00
Feed-in / Export Tariff	£222.03	£222.03	£222.03	£222.03	£222.03
Electricity Savings	£2,274.73	£2,365.72	£2,460.35	£2,558.76	£2,661.11
Annual Cash Flow	£2,496.76	£2,587.75	£2,682.38	£2,780.80	£2,883.15
Accrued Cash Flow (Cash Balance)	£26,710.20	£29,297.95	£31,980.33	£34,761.13	£37,644.27

Degradation and inflation rates are applied on a monthly basis over the entire observation period. This is done in the first year.

Plans and parts list

Circuit Diagram

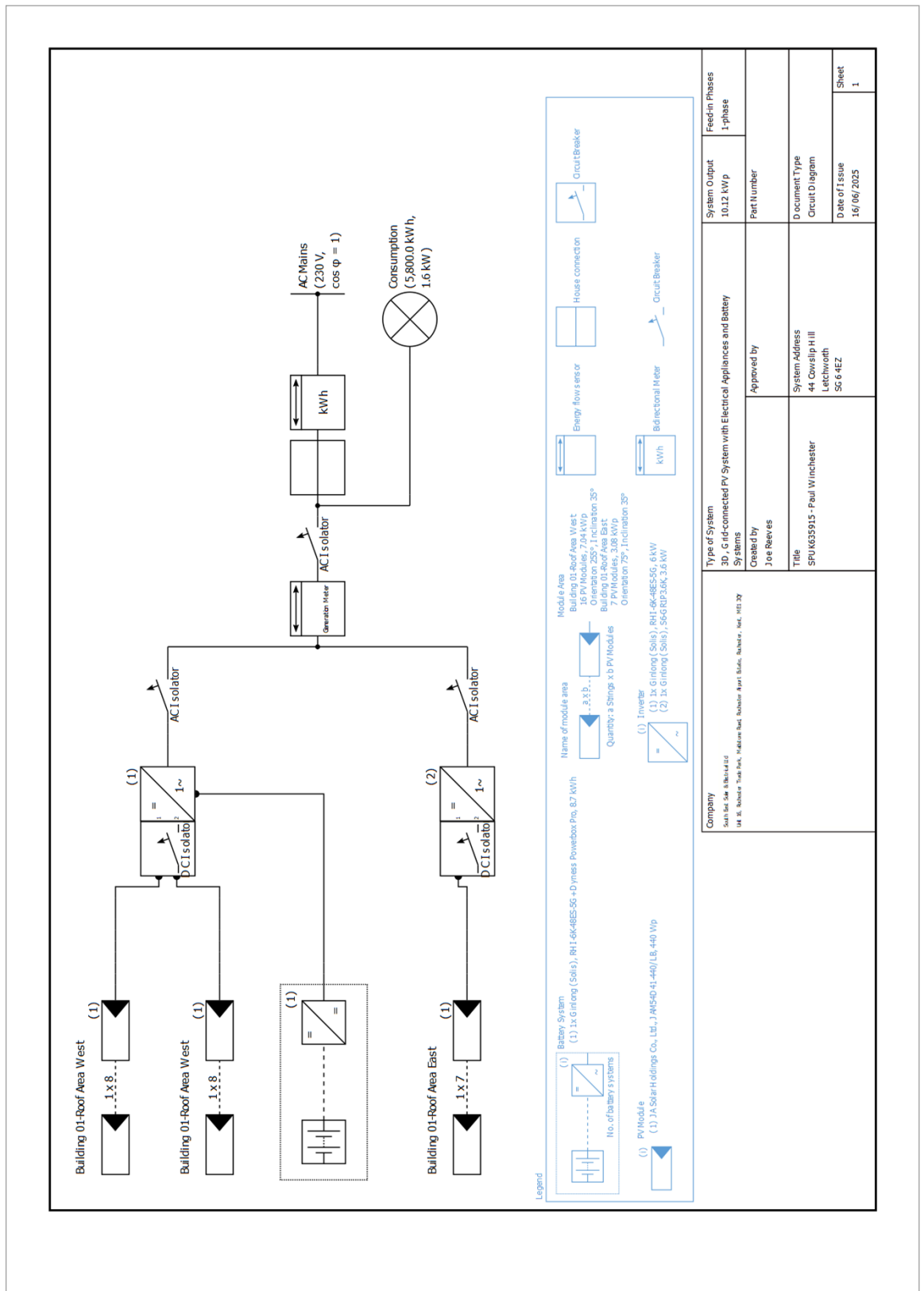


Figure: Circuit Diagram

Parts list

Parts list

#	Type	Item number	Manufacturer	Name	Quantity	Unit
1	PV Module		JA Solar Holdings Co., Ltd.	JAM54D41-440/LB	23	Piece
2	Inverter		Ginlong (Solis)	RHI-6K-48ES-5G	1	Piece
3	Inverter		Ginlong (Solis)	S6-GR1P3.6K	1	Piece
4	Battery System		Ginlong (Solis)	RHI-6K-48ES-5G+Dyness Powerbox Pro	1	Piece
5	Components			Energy flow sensor Generation Meter	1	Piece
6	Components			Circuit Breaker AC Isolator	1	Piece
7	Components			House connection	1	Piece
8	Components			Bidirectional Meter	1	Piece
9	Components			Circuit Breaker AC Isolator	2	Piece
10	Components			Bird Mesh	23	Piece

Screenshots, 3D Design Environment



Figure: Screenshot01