Solar Energy System Proposal

Dear Joe,

Thank you for the opportunity to present your Solar Energy System Proposal.

Best Regards,

JDM Earth Ltd

Recommended System Option

4.15 kW	£1,091	£11,000	£11,000
System Size	Estimated Annual Electricity Bill Savings	Total System Price	Net System Price

Your Solution

Solar Panels

Trina Solar Co., Ltd.
4.150 kW Total Solar Power
10 x 415 Watt Panels (TSM-415DE09R.05)
3,582 kWh per year

PureStorage II Battery 5kWh

2 x PSII-5kWh-BAT
10kWh of Storage
10 Year Performance Warranty

PUREDRIVE ENERGY STORAGE

S5-EH1P(3-6)K-L

3.600kW of Inverter Power
SOLIS - Ningbo Ginlong Technologies
1 x S5-EH1P3.6K-L
5.0 -year Standard Warranty

solis

Universal Clamp 30-46mm with Grounding Black Anodised

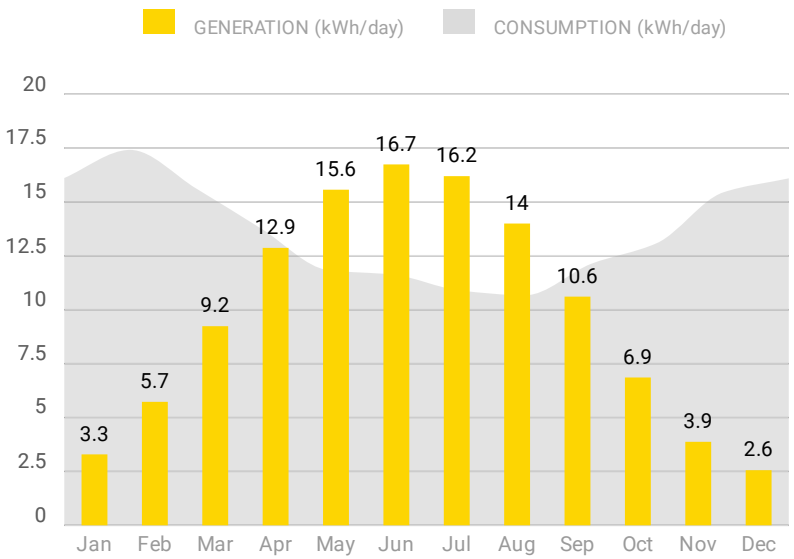
Universal Clamp 30-46mm with Grounding Black Anodised
30 x CLMC-U/30/46-G/BA

Warranties: 15 Year Panel Product Warranty, 25 Year Panel Performance Warranty, 5 Year Inverter Product Warranty, 10 Year Battery Product Warranty

System Performance

72%

Energy From Solar



System Performance Assumptions: System Total losses: 0%, Inverter losses: 0%, Optimizer losses: 0%, Shading losses: 0%, Performance Adjustment: 0%, Output Calculator: MCS. Panel Orientations: 10 panels with Azimuth 160 and Slope 20.

The performance of solar PV systems is impossible to predict with certainty due to the variability in the amount of solar radiation (sunlight) from location to location and from year to year. This estimate is based upon the standard MCS procedure is given as guidance only. It should not be considered as a guarantee of performance. The solar PV self-consumption has been calculated in accordance with the most relevant methodology for your system. There are a number of external factors that can have a significant effect on the amount of energy that will be self-consumed.

Shading will be present on your system that will reduce its output to the factor stated. This factor was NOT calculated using the MCS shading methodology, but we can confirm that the system as quoted, taking into account the shading present, will deliver at least 90% of the energy (in kWh) as set out in this performance estimate.

This system performance calculation has been undertaken using estimated values for array orientation, inclination, or shading. Actual performance may be significantly lower or higher if the characteristics of the installed system vary from the estimated values.

Important Note: The energy performance and benefits of EESS is impossible to predict with certainty due to the numerous functions a system can be programmed to perform. This estimate is based upon the standard MCS proceduce and is given as guidance only. It should not be considered as a guarantee of performance.

A. Installation data		
Installed capacity of PV system - kWp (stc)	4.15	kWp
Orientation of the PV system - degrees from South	Group 1: 10 panels with Orientation: 20 °	°
Inclination of system - degrees from horizontal	Group 1: 10 panels with Tilt: 20°	°
Postcode region	10	
B. Performance calculations		
kWh/kWp (Kk) from table	Group 1: 863	kWh/kWp

Shade Factor (SF)	1.00	
Estimated annual output (kWp x Kk x SF)	3,582	kWh
C. Estimated PV self-consumption - PV Only		
Assumed occupancy archetype	In Half Day	
Assumed annual electricity consumption, kWh	5,000.00	kWh
Assumed annual electricity generation from solar PV system, kWh	3,582	kWh
Expected solar PV self-consumption (PV Only)	1,074.48	kWh
Grid electricity independence / Self-sufficiency (PV Only)	21.49	%
D. Estimated PV self-consumption - with EESS		
Assumed usable capacity of electricity energy storage device, which is used for self-consumption, kWh	9.00	kWh
Expected solar PV self-consumption (with EESS)	2,972.70	kWh
Grid electricity independence / Self-sufficiency (with EESS)	59.0%	%

Environmental Benefits

Solar has no emissions. It just silently generates pure, clean energy.

Each Year

72% Of CO_2, SO_x & NO_x

907 kg Avoided CO_2 per year

Over System Lifetime

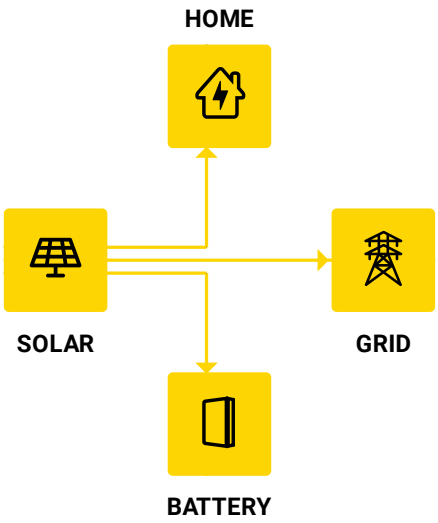
26,733 Car km avoided

172 Trees planted

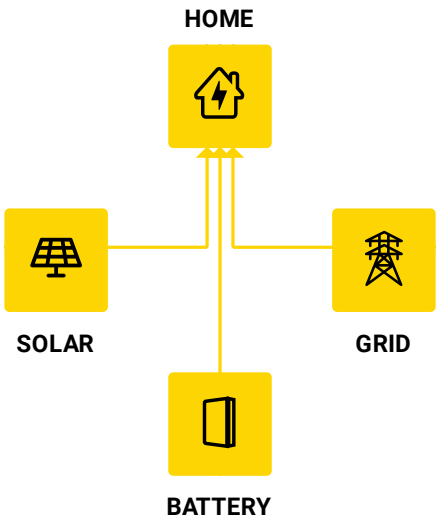
19 Long haul flights avoided

How your system works

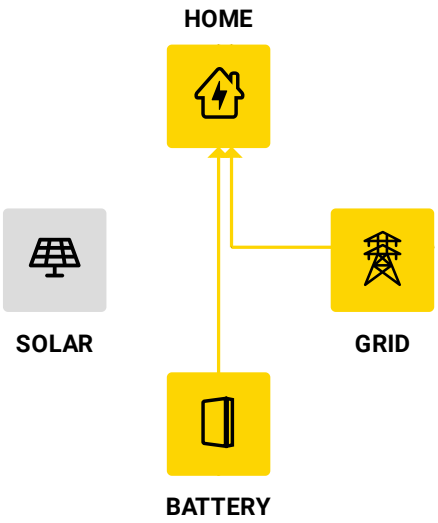
Generating Excess Solar



Partially Offset Usage

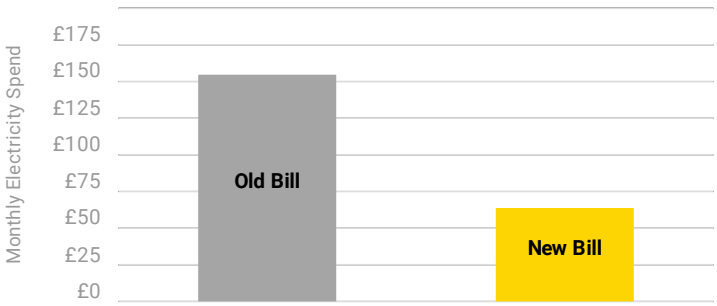


Night

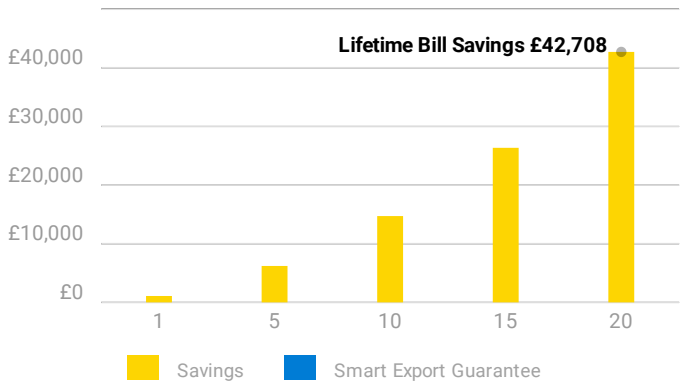


Electricity Bill Savings

First Year Monthly Bill Savings



Lifetime Bill Savings



Month	Solar Generation (kWh)	Electricity Consumption before solar (kWh)	Utility Bill before solar (£)	Utility Bill after solar (£)	Estimated Savings (£)
Jan	102	499	182	133	49
Feb	160	488	178	110	68
Mar	286	484	177	66	111
Apr	386	412	153	22	131
May	483	367	138	21	117
Jun	502	349	132	21	111
Jul	502	338	128	21	108
Aug	434	331	126	20	106
Sep	318	364	137	24	113
Oct	213	406	151	68	83
Nov	116	463	170	118	52
Dec	79	499	182	141	41

Your projected energy cost is calculated by considering a 7.0% increase in energy cost each year, due to trends in the raising cost of energy. This estimate is based on your selected preferences, current energy costs and the position and orientation of your roof to calculate the efficiency of the system. Projections are based on estimated usage of 5000 kWh per year, assuming Octopus Intelligent Electricity Tariff.

Your electricity tariff rates may change as a result of installing the system. You should contact your electricity retailer for further information.

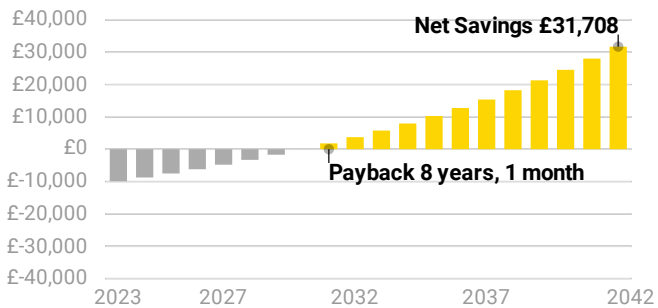
Proposed Tariff Details - Octopus Energy Octopus Intelligent	
Energy Charges	
Summer Peak Usage Charge *5am-11pm from 31 May to 30 Aug*	£0.39 / kWh
Summer Off-Peak Usage Charge *11pm-5am from 31 May to 30 Aug*	£0.07 / kWh
Winter Peak Usage Charge *5am-11pm from 31 Aug to 30 May*	£0.39 / kWh

Winter Off-Peak Usage Charge *11pm-5am from 31 Aug to 30 May*	£0.07 / kWh
Fixed Charges	
Fixed Charge	£16.41 / month

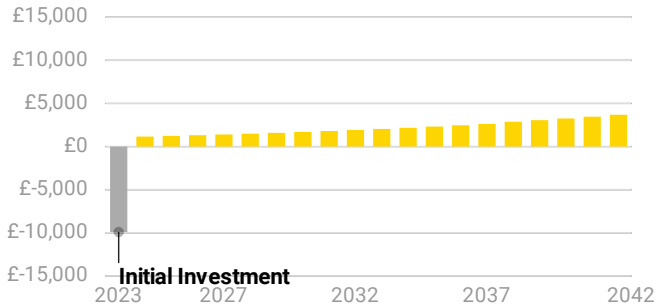
Net Financial Impact Cash

£42,708 Utility Bill Savings − £11,000 Net System Cost = £31,708 Estimated Net Savings

Cumulative Savings From Going Solar



Annual Savings From Going Solar



Estimates do not include replacement costs of equipment not covered by a warranty. Components may need replacement after their warranty period. Financial discount rate assumed: 6.75%

Quotation

Payment Option: Cash

10 x TSM-415DE09R.05 415 Watt Panels (Trina Solar Co., Ltd.) 1 x S5-EH1P3.6K-L (SOLIS - Ningbo Ginlong Technologies) 2 x PSII-5kWh-BAT (Puredrive Energy) 30 x CLMC-U/30/46-G/BA	
Total System Price	£11,000.00 Excluding £0.00 VAT
Purchase Price	**£11,000.00** Including £0.00 VAT

Price excludes Retailer Smart Meter should you want us to install your Smart Meter it will be an additional cost.
This proposal is valid until 26th November 2023.

Quote Acceptance

I have read & accept the terms and conditions.

Signature _____

Name _____ Date _____

S5-EH1P(3-6)K-L

Solis Energy Storage Inverters

>> Models:

S5-EH1P3K-L

S5-EH1P3.6K-L

S5-EH1P4.6K-L

S5-EH1P5K-L

S5-EH1P6K-L

360° View

Features:

- Max. string input current **15A**
- Uninterrupted power supply, 20ms reaction
- 5kW backup power to support more important loads
- With shifting and peak shaving capabilities friendly to grid
- Multiple working modes to make maximize self-consumption, increase benefit
- Higher charge-discharge efficiency, improving the economic benefits
- AFCI protection, proactively reduces fire risk
- Compatible with lithium & lead-acid batteries, increased more choice in different markets
- Fanless design, long lifespan
- Intelligent EMS function, improving battery's reliability
- With high-frequency isolation technology, making system safer and long lifespan
- 24-hour fully intelligent energy management, Real-time grasp of PV plant status
- Remotely control & upgrade function, making digital power plant maintenance at your fingertips

DATASHEET

S5-EH1P(3-6)K-L

Models	3K	3.6K	4.6K	5K	6K
Input DC (PV side)					
Recommended max. PV power	4.8 kW	5.7 kW	8 kW	8 kW	8 kW
Max. input voltage	600 V				
Rated voltage	330 V				
Start-up voltage	120 V				
MPPT voltage range	90-520 V				
Max. input current	15 A / 15 A				
Max. short circuit current	22.5 A / 22.5 A				
MPPT number/Max. input strings number	2/2				
Battery					
Battery type	Li-ion / Lead-acid				
Battery voltage range	42 - 58 V				
Battery capacity	50 - 2000 Ah				
Max. charge / discharge power	3 kW		5 kW		
Max. charge / discharge current	62.5 A		100 A		
Communication	CAN				
Output AC (Back-up)					
Rated output power	3 kW		5 kW		
Max. apparent output power	4.5 kVA, 10SEC		7 kVA, 10SEC		
Back-up switch time	<20 ms				
Rated output voltage	1/N/PE, 220 V / 230 V				
Rated frequency	50 Hz / 60 Hz				
Rated output current	14 A / 13.5 A		23 A / 22 A		
THDv (@linear load)	<2%				
Input AC (Grid side)					
Input voltage range	187-265 V				
Max. input current	20.5 A / 20 A	25 A / 23.5 A	31.5 A / 30 A	34.5 A / 33 A	34.5 A / 33 A
Frequency range	45-55 Hz / 55-65 Hz				
Output AC (Grid side)					
Rated output power	3 kW	3.6 kW	4.6 kW	5 kW	6 kW
Max. apparent output power	3.3 kVA	4 kVA	4.6 kVA	5.5 kVA	6.6 kVA
Operation phase	1/N/PE				
Rated grid voltage	220 V / 230 V				
Rated grid frequency	50 Hz / 60 Hz				
Rated grid output current	13.7 A / 13.1 A	16.4 A / 15.7 A	20.9 A / 20 A	22.8 A / 21.7 A	27.3 A / 26.1 A
Max. output current	15 A	18.5 A	21 A	25 A	30 A
Power factor	>0.99 (0.8 leading - 0.8 lagging)				
THDi	<2%				
Efficiency					
Max. efficiency	>97.1%				
EU efficiency	>96.5%				
Protection					
DC reverse-polarity protection	Yes				
Short circuit protection	Yes				
Output over current protection	Yes				
Surge protection	DC Type II / AC Type II				
Ground fault monitoring	Yes				
Integrated AFCI (DC arc-fault circuit protection)	Yes (1)				
Protection class/Over voltage category	I/II				
General Data					
Dimensions (W*H*D)	333*505*249 mm				
Weight	18.3 kg				
Topology	High frequency isolation (for battery)				
Operating ambient temperature range	-25 ~ +60°C				
Ingress protection	IP65				
Cooling concept	Natural convection				
Max. operation altitude	3000 m				
Grid connection standard	G98 or G99, VDE-AR-N 4105/VDE V 0124, EN 50549-1, VDE 0126/UTE C 15/VFR:2019, RD 1699/RD 244/UNE 206006/ UNE 206007-1, CEI 0-21, C10/11, NRS 097-2-1, EIFS 2018.2, IEC 62116, IEC 61727, IEC 60068, IEC 61683, EN 50530, MEA, PEA				
Safety/EMC standard	IEC/EN 62109-1/-2, EN 61000-6-2/-3				
Features					
DC connection	MC4 connector				
AC connection	Quick connection plug				
Display	7.0"LCD color screen display				
Communication	RS485, Optional: Wi-Fi, GPRS				

(1) Activation required.

PUREDRIVE
ENERGY STORAGE

PURESTORAGE-II BATTERY 5KWH

PROTECT YOUR PLANET, PROPERTY AND POCKET

MODULAR	FUTURE PROOFED	BEST BATTERY
Modular up to 25kWh	Market leading technology designed and manufactured in Britain	'Best on the market' – Solar Guide comparison site

PUREDRIVE
ENERGY STORAGE

Modular

up to 25kWh (5-stack)

Self-balancing technology makes it easy to increase your home storage capacity in the future

APPROVED WITH LEADING BATTERY INVERTERS

Solis DC Hybrid

Victron

Solis AC inverter / Charger

Imeon Hybrid

PUREDRIVE
ENERGY STORAGE

Future Proofed Technology

'BEST ON THE MARKET' - Solar Guide comparison site

- **Modular -** can add more capacity now or in the future (up-to 25kWh)
- **1C rating -** maximising charge and discharge rates
- **10,000 Cycles –** lasts 3 times longer than leading brands
- **45 MWh of throughput guaranteed –** best on the market
- **Integrated DC isolator –** saves time and money when installing
- **IP65 –** weather and waterproof
- **Protects against power cuts –** seamless change over within 20ms
- **90% DoD**
- **Backed and approved by best inverter suppliers on the market**

PUREDRIVE
ENERGY STORAGE

PureStorage II Hybrid 5kWh

PureStorage II Hybrid 5kWh uses the safest and highest performing lithium-iron-phosphate battery cells, with 1C operation, 10,000 cycles and a high charge and discharge rate capability. It is compatible with leading inverters on the market, including Solis, Victron and Imeon. Comparison Sites describe it as the best hybrid solution on the market when combined with a Solis inverter.

It incorporates a modular design, allowing a 5 of 5kWh batteries to be connected together, providing a high level of capacity flexibility from 5kWh to 25kWh. It is water proof at IP65 and can be installed indoors or outdoors. Its elegant and simple design is aesthetically pleasing and provides a very quick and simple installation.

General	
Indoor/Outdoor	Both
Dimensions (w x h x d) mm:	386.40 x 737 x 150.30
Weight:	59 kg
Software updates	Free
Ongoing technical support	Yes
Battery	
Capacity	5 kWh
Battery technology	LiFePO4 50V 200Ah
Battery Cycles	10,000
Battery management system	High/low voltage Max discharge Cell balancing
Max charge voltage	57V
Discharge cut off voltage	46V
Max charge current	100A
Continuous discharge current	100A
Max discharge current	350A (3 sec)
Operating temperatures	Discharge: -5°C to 60° C Charge: 0°C to 55°C
Compliance	CE, UN38.3, ROHS, MSDS
Warranty	10 years

Puredrive Energy Ltd

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