

Prepared by: Mark Gale
01276300222
mark@ark-group.co.uk

For: Noemi Ripert
The Queens Hall, High Street, Cuckfield

Quote #: 3835159
Valid until: 13th May 2024



Proposed Solar Energy System

Dear Noemi,

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

On the following pages, you will see your bespoke system design and cost benefits. We have not only chosen a system that we feel will perform best now, but one that will last and out perform others.

Should you wish to look at other more cost effective options, then please let us know.

We offer flexible finance solutions for all customers.

Best Regards

ARK Charge



System Cost Benefits

£7,341

Estimated Annual
Electricity Bill Savings

3 Years
10 Months

Payback

29.7%

Rate of Return on
Investment

£290,112

Lifetime Electricity Bill
Savings



Proposed Solar Components

Solar Panels

Jinko Solar Co., Ltd.
21.750 kW Total Solar Power
50 x 435 Watt Panels (JKM435N-54HL4R-B)
22,558 kWh per year

Inverter

Fox Ess
20.000 kW Total Inverter Rating
 1 x H3-Pro-20.0

End Cap RIGHT / LEFT (black) 50x37

End Cap RIGHT / LEFT (black) 50x37
 12 x 920043

FoxESS ECS4800

23.3kWh of Battery Storage
Fox Ess
1 x ECS4800-H5



Middle clamp+

Middle clamp+
 88 x 420082

End clamp+

End clamp+
 24 x 420081

VS+ Mounting rail 41 x 35 x 3300 mm

VS+ Mounting rail 41 x 35 x 3300 mm
 37 x 400524

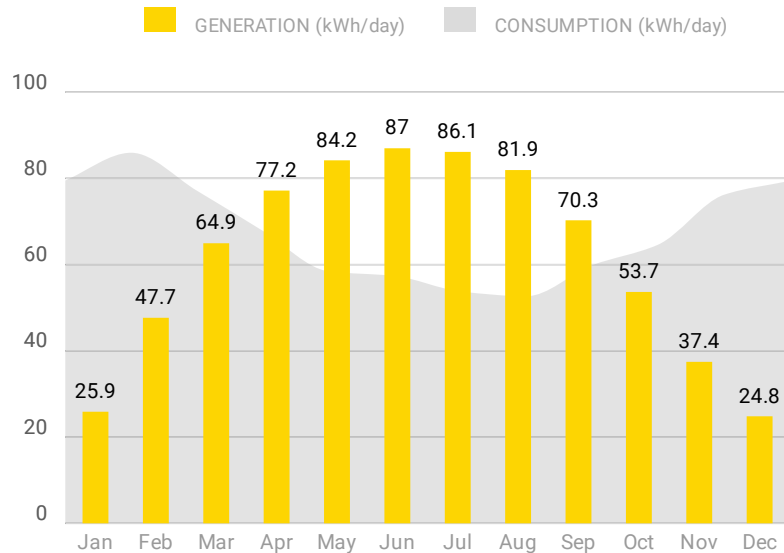
VS+ Rail connector 41 x 35

VS+ Rail connector 41 x 35
 30 x 400531

Warranties: 25 Year Panel Product Warranty, 30 Year Panel Performance Warranty

System Performance

91%
Energy From Solar



System Performance Assumptions: System Total losses: 0%, Inverter losses: 0%, Optimizer losses: 0%, Shading losses: 1.1%, Performance Adjustment: 0%, Output Calculator: MCS. Panel Orientations: 45 panels with Azimuth 189 and Slope 47, 4 panels with Azimuth 195 and Slope 32, 1 panels with Azimuth 192 and Slope 36.

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.

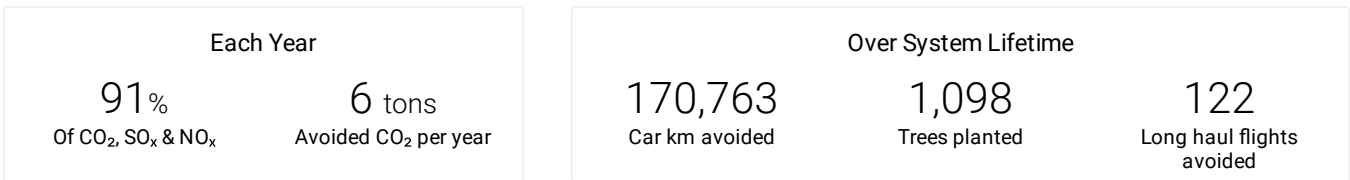
Important Note: The energy performance and benefits of EESS is impossible to predict with certainty due to the numerous functions a system can be programmed to perform. This estimate is based upon the standard MCS procedure and is given as guidance only. It should not be considered as a guarantee of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

A. Installation data		
Installed capacity of PV system - kWp (stc)	21.75	kWp
Orientation of the PV system - degrees from South	Group 1: 45 panels with Orientation: 10 ° Group 2: 4 panels with Orientation: 15 ° Group 3: 1 panels with Orientation: 10 °	°
Inclination of system - degrees from horizontal	Group 1: 45 panels with Tilt: 47° Group 2: 4 panels with Tilt: 32° Group 3: 1 panels with Tilt: 36°	°
Postcode region	2	

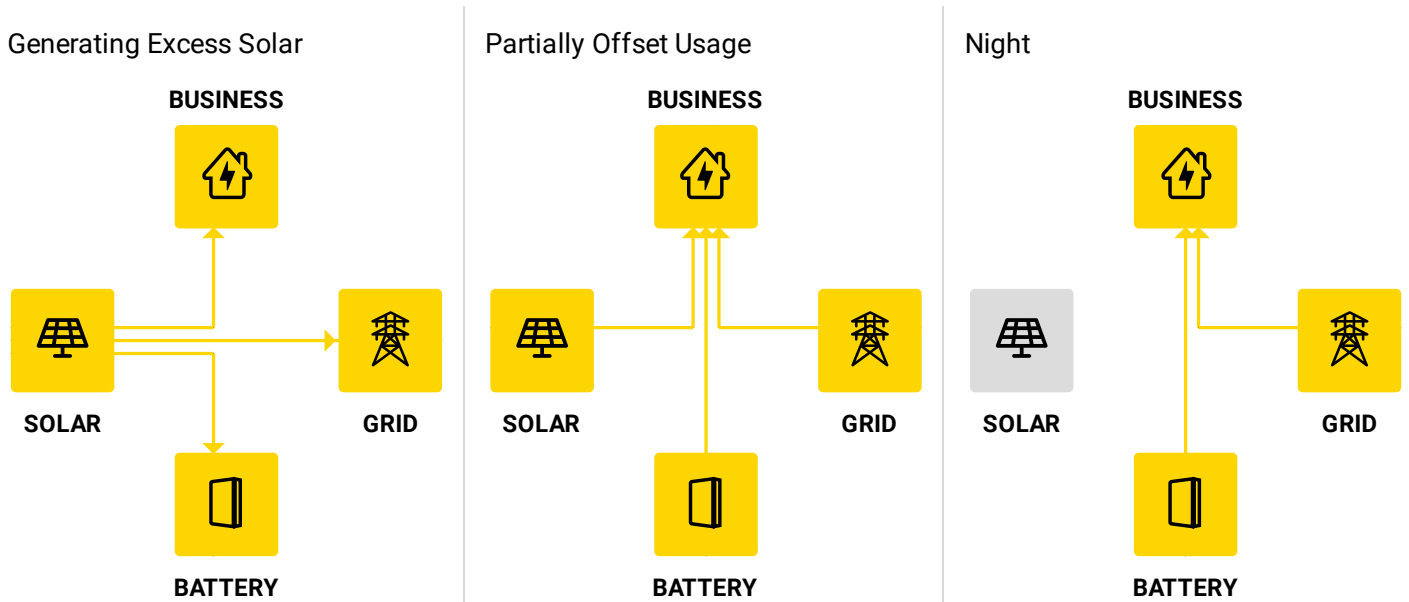
B. Performance calculations		
kWh/kWp (Kk) from table	Group 1: 1119 Group 2: 1118 Group 3: 1127	kWh/kWp
Shade Factor (SF)	0.98	
Estimated annual output (kWp x Kk x SF)	22,558	kWh
C. Estimated PV self-consumption - PV Only		
Assumed annual electricity consumption, kWh	24,676.49	kWh
Assumed annual electricity generation from solar PV system, kWh	22,558	kWh
Expected solar PV self-consumption (PV Only)	15,796.40	kWh
Grid electricity independence / Self-sufficiency (PV Only)	64.01	%
D. Estimated PV self-consumption - with EESS		
Assumed usable capacity of electricity energy storage device, which is used for self-consumption, kWh	20.97	kWh
Expected solar PV self-consumption (with EESS)	18,468.23	kWh
Grid electricity independence / Self-sufficiency (with EESS)	75.0%	%

Environmental Benefits

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

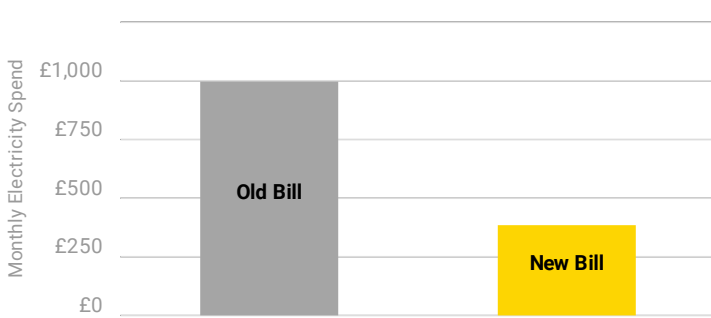


How your system works

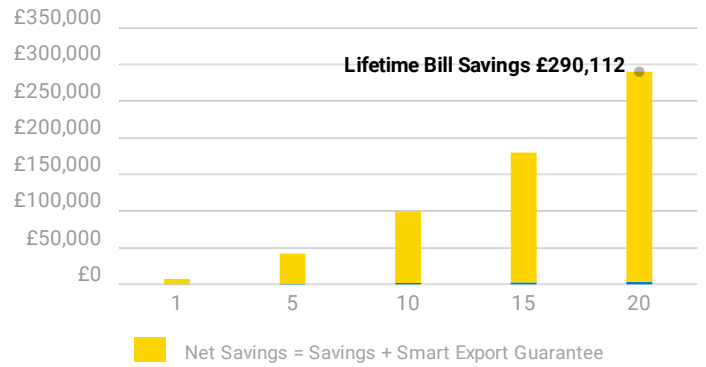


Electricity Bill Savings

First Year Monthly Bill Savings



Cumulative Bill Savings



Month	Solar Generation (kWh)	Electricity Consumption before solar (kWh)	Electricity Imported after solar (kWh)	Electricity Exported after solar (kWh)	Export Credit (£)	Utility Bill before solar (£)	Utility Bill after solar (£)	Estimated Savings (£)
Jan	802	2,465	1,662	0	0	1,175	914	261
Feb	1,335	2,406	1,073	0	0	1,174	741	433
Mar	2,013	2,391	403	0	0	1,142	498	644
Apr	2,315	2,035	3	251	13	989	207	782
May	2,610	1,812	0	780	39	883	33	850
Jun	2,609	1,721	0	876	44	847	26	821
Jul	2,670	1,667	0	993	50	818	23	796
Aug	2,540	1,633	0	895	45	803	27	775
Sep	2,108	1,796	0	295	15	881	55	826
Oct	1,663	2,003	344	0	0	969	431	538
Nov	1,123	2,286	1,163	0	0	1,102	738	365
Dec	769	2,462	1,693	0	0	1,174	924	250

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 24676 kWh per year, assuming Tekmar Project Commercial Rate Electricity Tariff.

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

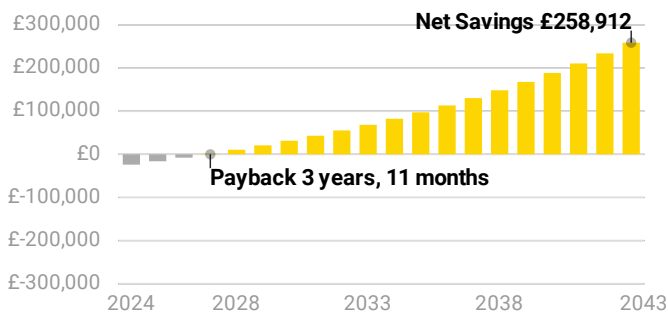
Proposed Tariff Details - Npower (UK) Tekmar Project Commercial Rate	
Energy Charges	
Day <i>8am-10pm from 30 May to 29 Aug & 30 Aug to 29 May</i>	£0.28 / kWh
Night <i>10pm-8am from 31 Dec to 30 Dec</i>	£0.25 / kWh
BSUoS	£0.01 / kWh

<i>All Day</i>	
Operational charge Forecast Passthrough invoiced @ NBP <i>All Day</i>	£0.00 / kWh
RO <i>All Day</i>	£0.03 / kWh
FIT Charge <i>All Day</i>	£0.01 / kWh
Electricity Climate Change Levy <i>All Day</i>	£0.01 / kWh
Smart Export Guarantee	
FiT <i>All Day</i>	£0.05 / kWh
Demand Charges	
TNUoS <i>All Day</i>	£44.68 / kW
Fixed Charges	
Capacity charge based on 860 kVA	£0.00 / day
Fixed Charge	£0.00 / day
Other Network Charges	£2.33 / day
DC/DA	£0.00 / day
MOP	£0.00 / day
Forecast CM Obligation Levy charge	£0.00 / month

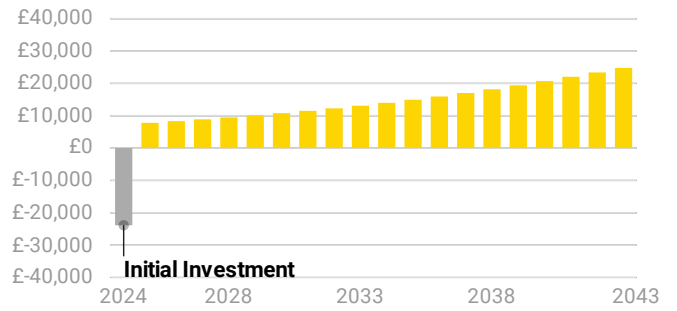
Net Financial Impact Cash

$$\begin{array}{rcl}
 \pounds 290,112 & - & \pounds 31,200 & = & \pounds 258,912 \\
 \text{Utility Bill Savings} & & \text{Net System Cost} & & \text{Estimated Net Savings}
 \end{array}$$

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

50 x JKM435N-54HL4R-B 435 Watt Panels (Jinko Solar Co., Ltd.) 1 x H3-Pro-20.0 (Fox Ess) 1 x ECS4800-H5 (Fox Ess) 4 x 920043, 4 x 420082, 8 x 420081, 4 x 400524, 2 x 920043, 4 x 420081, 1 x 400524, 6 x 920043, 84 x 420082, 12 x 420081, 30 x 400531, 32 x 400524	
Total System Price	£31,200.00 Excluding £0.00 VAT
Purchase Price	£31,200.00 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 13th May 2024.

Quote Acceptance

I have read & accept the terms and conditions.

Signature

Name

Date



This proposal has been prepared by ARK Charge using tools from OpenSolar. Please visit www.opensolar.com/proposal-disclaimer for additional disclosures from OpenSolar.

Fox ESS ECS BATTERY STORAGE SYSTEM



HIGH VOLTAGE BATTERY FROM FOX ESS

The ECS is a high-performance, scalable battery storage system. The modular design allows for maximum flexibility, making it suitable for a broad range of storage applications.

Additional batteries can be installed in series, allowing for a maximum storage capacity of 32.61 kWh. Installation is easy, with a plug and play solution that can save valuable time for installers.

- 4.66kWh capacity
- Scalable to 32.61 kWh
- 90% Depth of Discharge
- Large temperature tolerance
- Easy installation
- CAN communication
- High voltage



High Voltage



Simple Installation



High Efficiency



Expandable System



90% DoD

Fox ESS

ECS SERIES

ECS4800-H2/H3/H4/H5/H6/H7

Model	ECS4800 -H2	ECS4800 -H3	ECS4800 -H4	ECS4800 -H5	ECS4800 -H6	ECS4800 -H7
ELECTRICAL CHARACTERISTICS						
Battery Type	LiFePO4 Prismatic Cell					
Battery Module	1*CM4800 1*CS4800	1*CM4800 2*CS4800	1*CM4800 3*CS4800	1*CM4800 4*CS4800	1*CM4800 5*CS4800	1*CM4800 6*CS4800
Nominal Capacity [Wh]	9320	13980	18640	23300	27960	32610
Nominal Voltage [V]	89.6	134.4	179.2	224	268.8	313.6
Operating Voltage [V]	81.2 ~ 103	121.8 ~ 154.5	162.4 ~ 206	203 ~ 257.6	243.6 ~ 309.1	284.2 ~ 360.6
Recommend Discharge Current [A]	30					
Max. Charge/Discharge Current [A]	50					
Peak Discharge Current [A]	65 @60sec					
Battery Pack Round-Trip Efficiency [%]	>95					
Depth of discharge [%]	90					
Cycle Life *1	≥6000					
Communication	CAN					
Display	CS: LED*1, CM: LED*6					
Scalability	Max. 7 Modules in Series					
OPERATING CONDITIONS						
Installation Location	Outdoor/ Indoor (Stand)					
Operating Temperature [°C]*2	Charge: 0 ~ 55 Discharge: -10 ~ 55					
Storage Temperature [°C]	-10 ~ 35					
Cooling method	Natural Convection					
Humidity [%]	5 ~ 95 (No Condensing)					
Altitude [m]	Max. 2,000					
MECHANICAL CHARACTERISTICS						
Dimensions (W*H*D) [mm]	570*386*380	570*524*380	570*662*380	570*800*380	570*938*380	570*1076*380
Weight [kg]	83.5	122.5	161.5	200.5	239.5	278.5
CERTIFICATES						
Safety	IEC 62619					
EMC	EN IEC 61000-6-1/2/3/4					
Transportation	UN38.3					
Ingress Protection	IP65					

*1, 25°C, @90% DOD, 0.3C charging/discharging.

*2, Charge derating will occur between 0°C and +15°C.

