

YOUR SOLAR QUOTE

Hi Mr&Mrs,King.

Thanks for choosing us to provide a design for a solar PV system at Brownings Lane, SG48PB.

We're delighted to supply the attached proposal for a 8 kW solar array.

We expect your system to generate 6,052 kWh of clean electricity every year, and save 1,285 kg CO₂ of carbon.

There are full details on the following pages. We hope you enjoy the read!

Kind regards,

Gavin Matthews

Gjm Energy Ltd



8.00 kW PV System

8 x 500W & 8 x 500W
panels,
1 x Fox ESS KH 10kW 1ph
Hybrid Inverter



£16,641 inc VAT

Expected payback 9
years. Estimated first
year savings £1,223



6,052 kWh/yr

Annual CO₂ savings
of 1,285 kg

System Overview

Your system comprises **16 Eurener Nexa 500W TOPCon Mono Panel Black** solar panels to collect sunlight and turn it into DC electricity.

The panels will be connected to **1 Fox ESS KH 10kW 1ph Hybrid Inverter** inverter, which converts the DC electricity into mains (AC) electricity.

A **Fox ESS EP11 10.36kWh Li-ion Battery** battery storage system will allow you to store excess energy from sunny days, so that you can use your generated electricity at night too.

We include all the isolators, wiring and meters needed to connect the system safely to your electrical system. Your system will be installed and certified by our trained installation team.

Satellite Image



Solar Panels: Eurener Nexa 500W TOPCon Mono Panel Black x 16
Mono Black panel with 500W power class and 23.1% efficiency.

Model	MEPV 120 _Nexa_ TOPCon
Power	500 watts
Dimensions	1134 x 1909mm



Inverter: Fox ESS KH 10kW 1ph Hybrid Inverter

No description

AC Power	10000 watts
Trackers	4

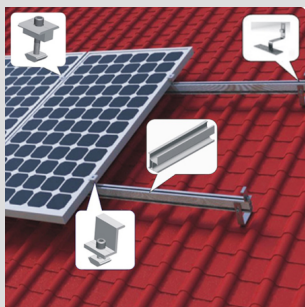
System components



Battery: Fox ESS EP11 10.36kWh Li-ion Battery

No description

Capacity	10.360 kWh
Quantity	2



Mounting: Fastensol pitched roof mounting system

Fastensol are an excellent value, fully MCS accredited choice for pitched roof mounting systems, suitable for the majority of roof types.

Designed for	Plain Tile roofs
Colour	Black

System Performance

We have made an estimate of the annual energy generation of your system. This takes into account the following factors that affect the output of a solar array.

The location of the system

Sunlight is weaker near the poles than near the equator. We use data from a meteorological model of the intensity of sunlight over the course of the year in different locations all over the world.

The orientation of the system

Solar panels that face south receive a little more sunlight than panels that face east or west. However, in diffuse light the orientation of the panels makes little difference, so the effect is less marked than many people imagine.

The degree of shading

If you have trees, neighbouring buildings or nearby high ground that will shade your PV array, the output of the system will be reduced. We have used a 'sunpath diagram' that estimates how often sunlight will be blocked from reaching the panels.

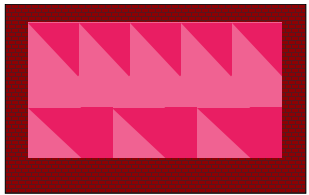
We expect your system to generate
6,052 kWh per year

Installation data	
Installation capacity of PV system – kWp (stc)	8 kWp
Orientation of the PV system – degrees from South	See roof diagrams
Inclination of system (pitch) – degrees from horizontal	See roof diagrams
Postcode region	Zone 1
Performance Calculations	
kWh/kWp (Kk)	See sunpath diagrams
Shade Factor (SF)	See sunpath diagrams
Estimated output (kWp x Kk x SF)	6052 kWh

Roof diagrams

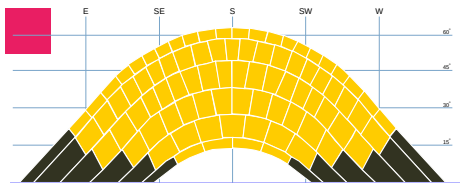


Roof 1 Orientation: -68° Pitch: 38°

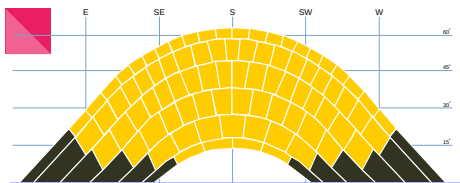


Roof 2 Orientation: 112° Pitch: 45°

Sunpath diagrams



Shade factor: 1.00 Kk: 849



Shade factor: 1.00 Kk: 664

Important note: The performance of solar PV systems is impossible to predict with certainty due to the variability in the amount of sunlight from location to location and from year to year. This estimate is based upon a model that takes account of meteorological data at your location and makes an allowance for losses due to shading of the panels. This is a complex calculation however, and no model can be 100% accurate. It should not be considered a guarantee of performance.

If shading is present on your system that will reduce its output to the factor stated. This factor was calculated using industry standard shading methodology and we believe that this will yield results within 10% of the actual energy estimate stated for most systems.

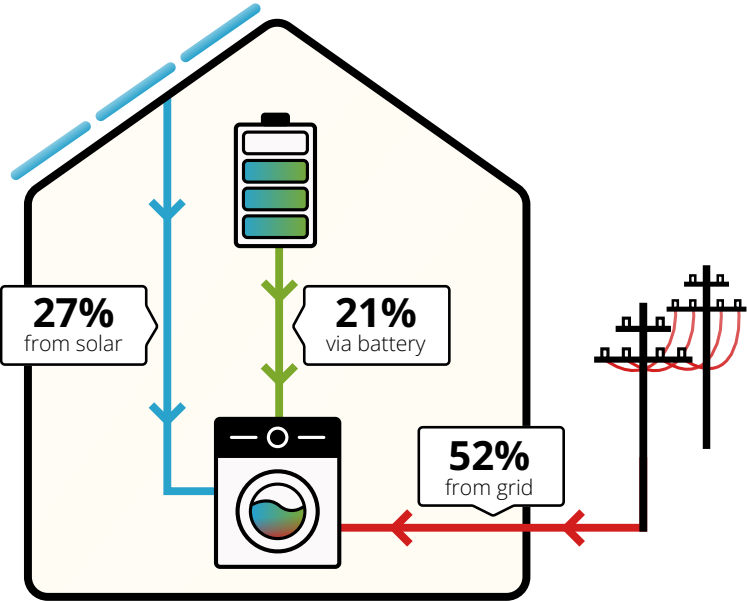
Battery Storage

We have included a 20.7 kWh battery storage unit in this proposal. On sunny days, when your PV array is producing more electricity than you are using in the property, you will be able to store the spare energy and use it at night.

Battery storage systems increase the proportion of electricity generated by a solar PV array that is consumed in the property rather than exported to the grid. Excess solar energy that is not needed during the day can be stored and subsequently used overnight

This leads to financial savings, as you replace expensive imported electricity (at 24.5p per kWh) with free electricity generated by your solar panels.

Where will your power come from?



Annual Power Requirement: 6052 kWh

How battery storage reduces your grid dependence

Including battery storage will reduce your grid dependence by an extra 21% compared with a PV-only system. You should only need to buy around 52% of your power from the grid.

48%
total reduction of grid dependence with battery

Estimated PV self-consumption – PV only	
Assumed occupancy archetype	in half the day
Assumed annual domestic electricity consumption	10264 kWh
Expected solar PV self-consumption (PV Only)	2802 kWh
Grid electricity independence / Self-sufficiency (PV Only)	27%
Estimated PV self-consumption – with EESS	
Assumed usable capacity of electrical energy storage device, which is used for self-consumption	18.65 kWh
Expected solar PV self-consumption (with EESS)	4993 kWh
Grid electricity independence / Self-sufficiency (with EESS)	48%

Important note: Rather than using the MCS calculation model we have used an alternative calculation system provided by Easy PV to determine the likely self consumption of your property. This may be because the estimated system output for this solar PV system is over 6000 kWh annually, or has a battery capacity of over 15.1 kWh, or there are other factors that mean this calculation system will be more accurate for your specific solar PV system. We have assumed that your annual electricity consumption is 10264 kWh.

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 given as guidance only. It should not be considered as a guarantee of performance.

Your energy explained

In addition to the MCS calculation of system output we have run a more detailed model of your system to estimate how much of the electricity generated by the system you are likely to use yourself and how much will go to the grid.

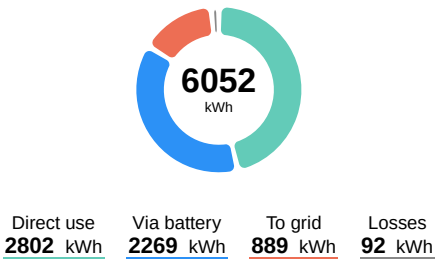
Smart Export Guarantee (SEG) information

The savings illustrations provided include Smart Export Guarantee (SEG) payments which you receive for any export of energy to the grid, subject to the utility company criteria and requirements. We have included a SEG rate of 15p for illustrative purposes and is widely available in the marketplace at the time of preparing your quotation. We strongly recommend that all customers carry out their own research into SEG payments and tariffs available as these vary from supplier to supplier and you may need to change provider to receive this rate. These rates may also change during the lifespan of your solar system. Not registering for SEG will mean you do not receive the export payments detailed above.

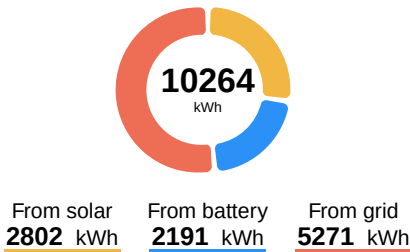
Where your electricity will come from in a typical year

Based on an electricity usage of 10,264 kWh per year, the graph below shows how much electricity used in the property is expected to come directly from the solar panels (blue), how much is expected to come from battery storage (green), and how much is expected to be imported from the grid (red).

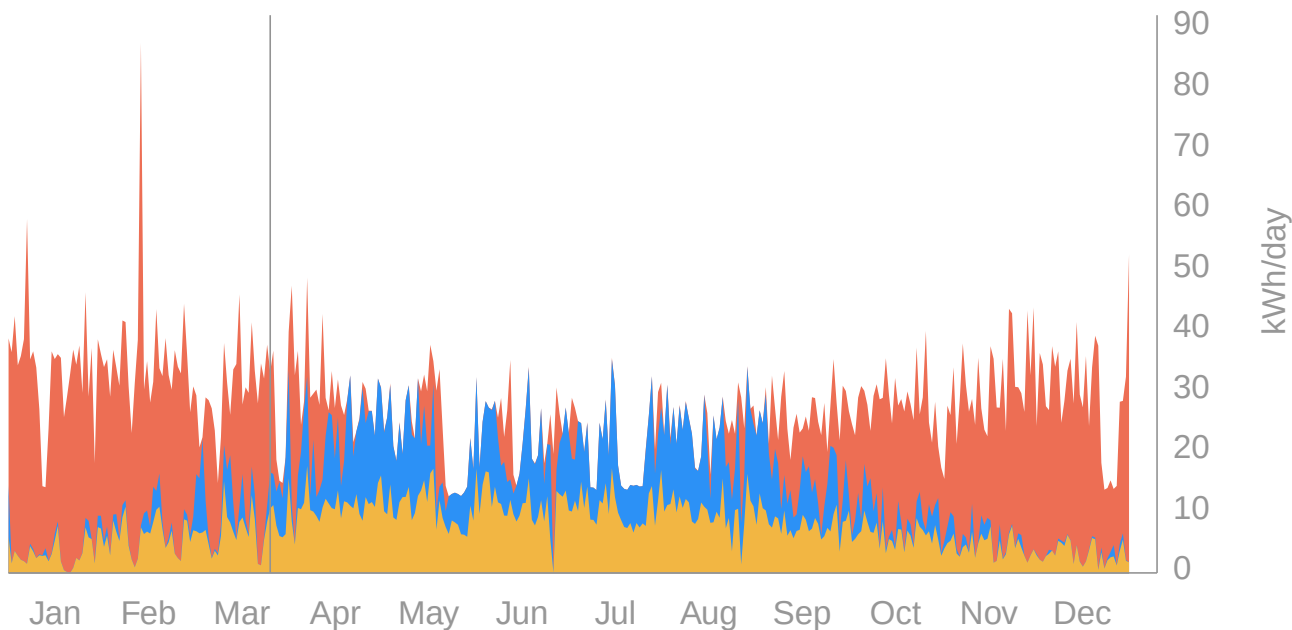
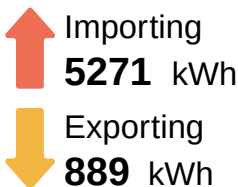
Annual Generation



Annual Consumption



Annual Import/Export



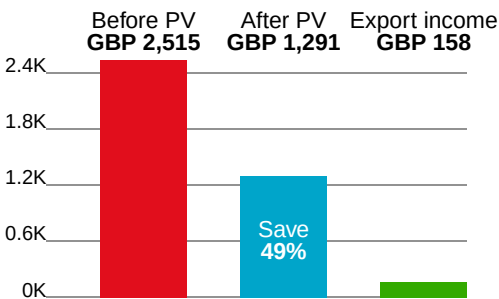
Financial Benefits

Based on our model we expect you to self consume 4,993 kWh of the 6,052 kWh of electricity the system should generate - providing 49% of the annual electricity consumption of 10,264 kWh in the property.

At an electricity tariff of £0.24/kWh, that's a saving of **£1,223** on your electricity bill - down from £2,515 at present! Your new bill could be just **£1,291** per year.

1,056 kWh of excess solar energy will be exported to the grid. If you are paid by your supplier at £0.15 per kWh, you will receive an additional **£158** in income from them.

Overall, your savings and benefits are expected to be around £1,382 in the first year after the system is installed.

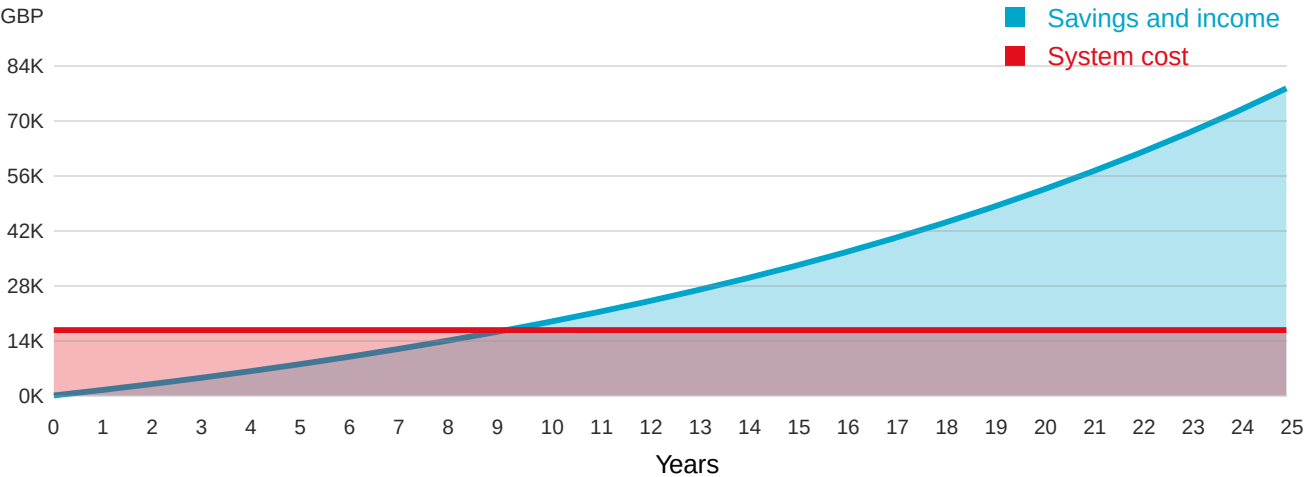


Payback

Using a more detailed model that also takes account of longer term factors such as inflation and gradual degradation in panel output over time, **we expect the system to pay for itself in 9 years.**

Over a projected 25 year lifetime, we expect the system to have a **Net Present Value of £61,528**. A positive net present value is a good indication that an investment is financially worthwhile.

Disclaimer: Nothing in life is certain. Cloudy periods, growing trees, and even pigeon droppings can affect the output of your array. No-one really knows how electricity tariffs will change in the future, or what inflation will be in 10 years time. We have based our calculations on an inflation rate of 7.04%, electricity price that increases with inflation, an import electricity tariff of 25p/kWh, and export payments of 15p/kWh. Returns are not guaranteed.



Environmental Benefits

Your new PV system will supply your property with clean, green electricity - and in sunny periods some will also be exported back to the grid.

Overall you'll be making a big contribution to reducing CO₂ not just by lowering the carbon intensity of your own electricity, but by putting low-carbon electricity back in the grid for others to use too.

Your current electricity supply produces

2,179 kg CO₂
each year

49% will be supplied by solar, saving

1,077 kg CO₂
each year

981 kWh will be exported, saving

208 kg CO₂
each year

Total savings

1,285 kg CO₂
each year

**Your yearly CO₂
reduction of 1,285 kg
is equal to...**



**a car ride of 4,589
miles**



**CO₂ absorbed by 59
trees**

Disclaimer: We calculate and compare the likely annual CO₂ emissions for your home based on your generation and usage with the solar PV system detailed in this document versus estimates for a property like yours using energy from the grid. Your actual CO₂ emissions will depend on lots of factors, like how much energy your solar panels generate, how much of this energy you use directly and how much energy you continue to use from the grid. To calculate what these savings equate to in miles driven, we base this on the CO₂ emissions of an average sized diesel car as outlined in the UK government's 'Greenhouse gas reporting: conversion factors 2022' (<https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2022>). To calculate what these savings equate to as the average amount of CO₂ absorbed by trees, we base this on a rate of 25kg per tree per year. Trees absorb anywhere between 10 and 40kg of CO₂ per year on average, depending on a whole host of factors including the species, location, planting density, and age.

Quote



Mr&Mrs,King
Brownings Lane
SG48PB

Quote reference: 966486
Quote date: 19/09/2024
Quote by: Gavin Matthews
Quote validity: 30 days

Description of goods and services	Price
Goods	
16x Eurener Nexa 500W TOPCon Mono Panel Black solar panel	
Fox ESS KH 10kW 1ph Hybrid Inverter inverter	
NET Emlite Bi-directional Meter ECA2.n*	
Label sheet	
Fox ESS EP Junction Box	
2x AC isolator - IMO - 63A 4-pole	
2x Fox ESS EP11 10.36kWh Li-ion Battery	
2x K&N DC isolator - KG20-4	
4x MC4 4mm Connector Pair	
50m reel of 4mm2 solar cable	
8x Fastensol end clamp (30mm black)	
34x Fastensol black universal clamp	
20x Fastensol black end cap	
52x Fastensol portrait flat tile roof hook	
52x Hookstop protector	
52x Genius flat tile	
8x Fastensol rail splice	
2x BB200evo Reinforced BirdBlocker (30m)	
16x Fastensol black rail 3550mm	

Services

Full Installation
MCS,DNO,HIES,Part P Regisration
Sundry Material Items
Scaffolding
Bird Protection
Delivery

Special offer 2 free solar panels

Estimates do not include replacement costs of equipment not covered by a warranty.

Components may need replacement after their warranty period'

Total before VAT £16,641.00

VAT at 0% £0.00

Total including VAT £16,641.00

Order form

To proceed with this order please sign below to acknowledge that you have read and accept the information contained within this quote document and our terms and conditions.

Customer signature

Customer name

Date
