

# Your Solar Proposal

Powering your Future with ES Holdings Group Ltd



Thank you for considering solar and battery storage for your home! This proposal is tailored to help you maximize savings, reduce reliance on the grid, and take control of your energy future. Inside, you'll find a detailed breakdown of your system, expected benefits, and how this setup will work for you.

If you have any questions, feel free to reach out—I'm happy to help!

Best regards,  
  
Lewis

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This proposal is for:



TR16



Valid for

30 days



12 kW PV System



£9,023.50 inc VAT: Expected  
payback 5 years. Estimated first  
year savings £1,037



9,939 kWh/yr: Annual CO<sub>2</sub> savings  
of 2,058 kg



11.5 kWh battery storage



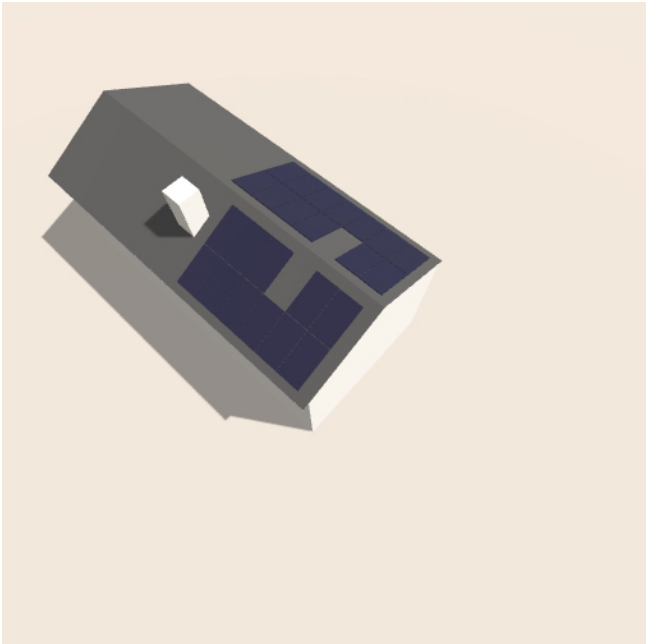
# System Overview

Your system comprises **24 Aiko Neostar 2S+ 500W Dual Glass All Black ABC N-Type Mono 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**, which converts the DC electricity into mains (AC) electricity.

**A Fox ESS 11.5kWh 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.



## Solar Panels: Aiko Neostar 2S+ 500W Dual Glass All Black ABC N-Type Mono × 24

Aiko's Neostar 2S+ Dual-Glass 500W panels are a result of cutting-edge technology, boasting an impressive efficiency of up to 22.6%.

|            |               |
|------------|---------------|
| Model      | Neostar       |
| Power      | 500 watts     |
| Dimensions | 1134 × 1954mm |



## Inverter: Fox ESS KH 10kW 1ph Hybrid

Flexible configuration, plug and play set-up. Expand your system easily by simply adding additional batteries.

|          |             |
|----------|-------------|
| AC Power | 10000 watts |
| Trackers | 4           |



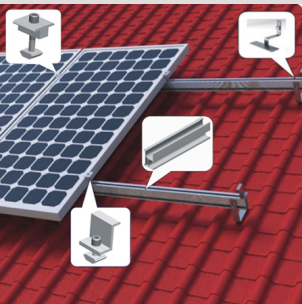
# System Components



**Battery: Fox ESS EC2900 2.88kWh Li-ion**

The Fox ECS battery series is a high-performance, scalable battery storage offering. The modular design allows for maximum flexibility, making it suit...

|          |                                         |
|----------|-----------------------------------------|
| Capacity | Primary: 2.880 kWh, Secondary 2.880 kWh |
| Quantity | 1 × Primary, 3 × Secondary              |



**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 | Natural Slate 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.

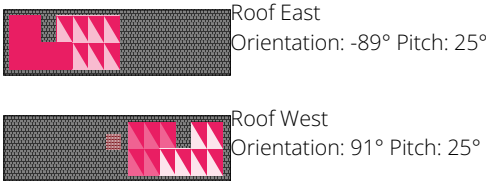
### The degree of shading

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.

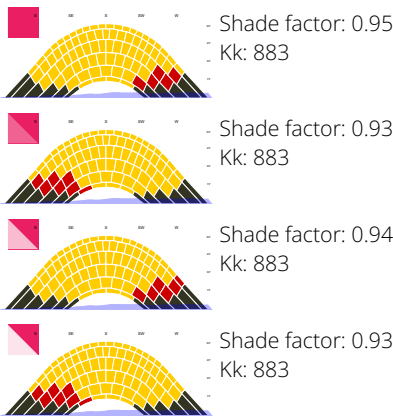
We expect your system to generate  
**9,939 kWh per year**

|                                                         |                      |
|---------------------------------------------------------|----------------------|
| Installation data                                       |                      |
| Installation capacity of PV system – kWp (stc)          | 12.0 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 4               |
| Performance Calculations                                |                      |
| kWh/kWp (Kk)                                            | See sunpath diagrams |
| Shade Factor (SF)                                       | See sunpath diagrams |
| Estimated output (kWp x Kk x SF)                        | 9939 kWh             |

## Roof diagrams



## Sunpath diagrams



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.

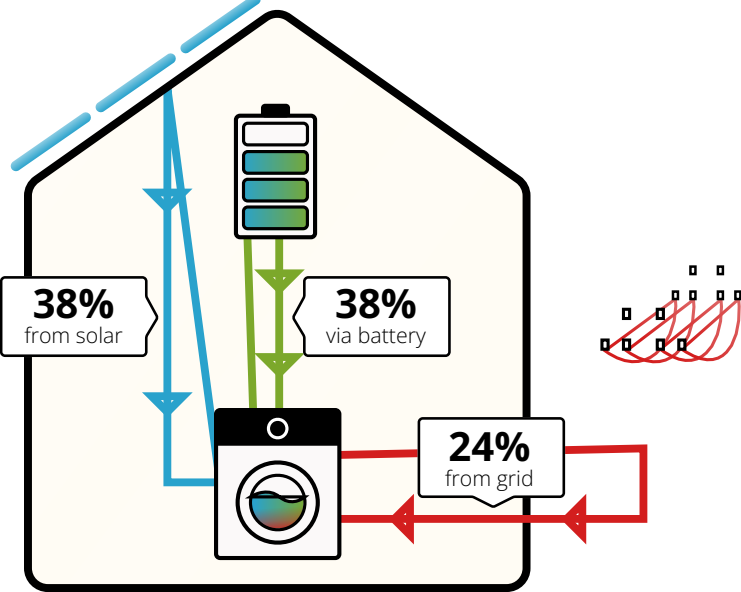
# Battery Storage

We have included 11.5 kWh of battery storage 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 with electricity generated by your solar panels.

## Where will your power come from?



Annual Power Requirement: 9939 kWh

## How battery storage reduces your grid dependence

Including battery storage will reduce your grid dependence by an extra 38% compared with a PV-only system. You should only need to buy around 24% of your power from the grid.

 **76%**  
total reduction of grid dependence with battery

|                                                                                                 |                   |
|-------------------------------------------------------------------------------------------------|-------------------|
| Estimated PV self-consumption – PV only                                                         |                   |
| Assumed occupancy archetype                                                                     | Home half the day |
| Assumed annual domestic electricity consumption                                                 | 5818 kWh          |
| Expected solar PV self-consumption (PV Only)                                                    | 2211 kWh          |
| Grid electricity independence / Self-sufficiency (PV Only)                                      | 38%               |
| Estimated PV self-consumption – with EESS                                                       |                   |
| Assumed usable capacity of electrical energy storage device, which is used for self-consumption | 10.37 kWh         |
| Expected solar PV self-consumption (with EESS)                                                  | 4445 kWh          |
| Grid electricity independence / Self-sufficiency (with EESS)                                    | 76%               |

Important note: We have used a model of your system running at high resolution over the course of a year to determine the likely self-consumption of your property and performance of the battery system. The energy performance and benefits of battery systems are impossible to predict with certainty due to the numerous functions battery systems 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.

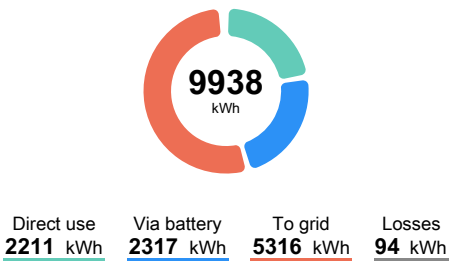
## Smart Export Guarantee (SEG) information

The Smart Export Guarantee (SEG) enables Generators to receive payments from electricity suppliers for the electricity they export back to the National Grid, providing specific criteria are met. Your installation will be MCS accredited, which means that you should be able to apply for SEG payments from your electricity supplier. Further details on the SEG and its eligibility requirements, including how to apply, can be found online at [ofgem.gov.uk](https://www.ofgem.gov.uk)

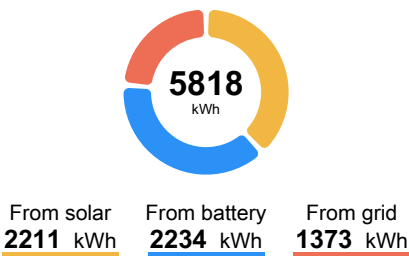
## Where your electricity comes from in a typical year

Based on an electricity usage of 5,818 kWh per year, the graph below shows how much electricity used in the property is expected to come directly from the solar panels (orange) , how much is expected to come from battery storage (blue), and how much is expected to be imported from the grid (red).

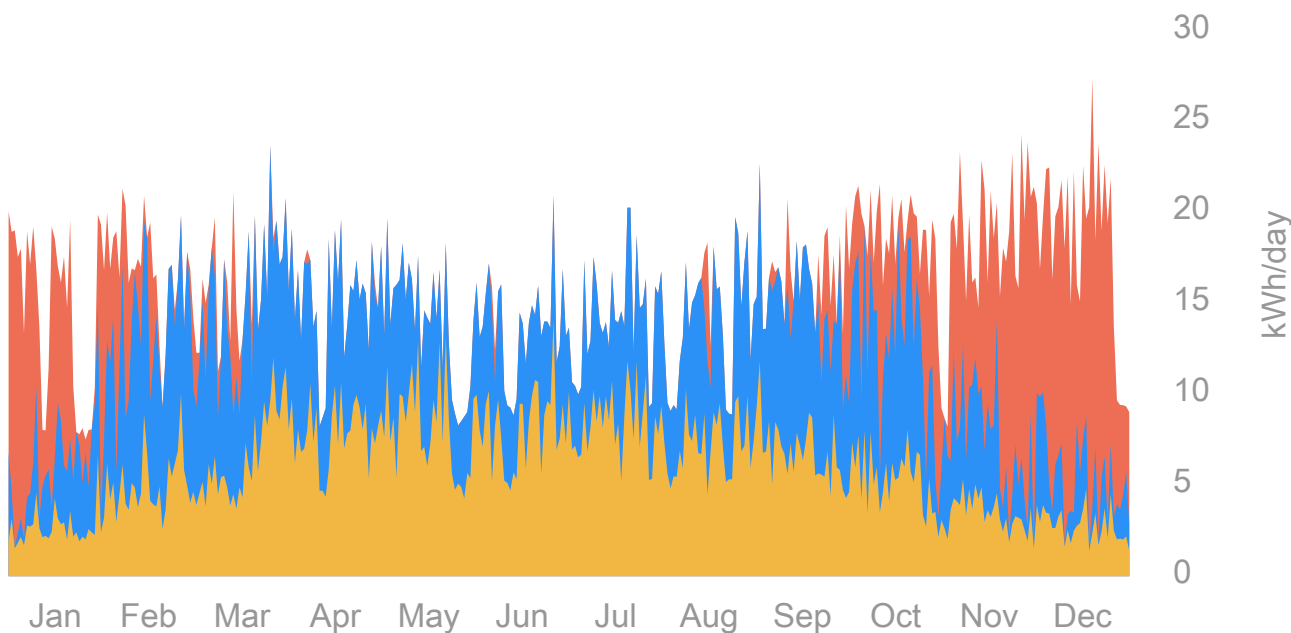
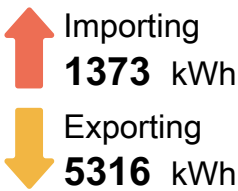
## Annual Generation



## Annual Consumption



## Annual Import/Export



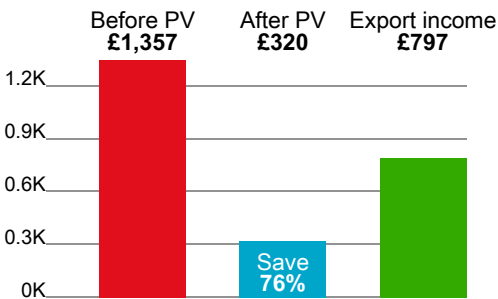
# Financial Benefits

Based on our model we expect you to self consume 4,445 kWh of the 9,939 kWh of electricity the system should generate - providing 76% of the annual electricity consumption of 5,818 kWh in the property.

At an electricity tariff of 23.33 p/kWh that's a saving of **£1,037** on your electricity bill - down from £1,357 at present! Your new bill could be just **£320** per year.

**5,316 kWh of excess solar energy will be exported to the grid.** If you are paid by your supplier at 15.00 p/kWh you will receive an additional **£797** in income from them.

**Overall, your savings and benefits are expected to be around £1,835 in the first year after the system is installed.**



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.

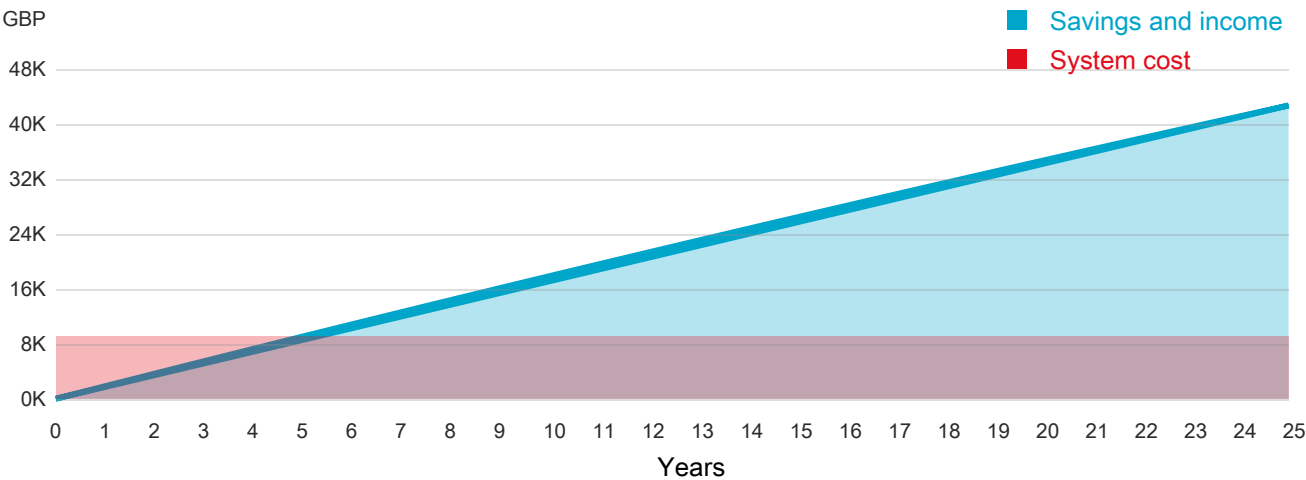
We have based our calculations on an inflation rate of 4%, electricity price that increases with inflation, a discount rate<sup>1</sup> of 4%, an import electricity tariff of 23.33 p/kWh, and export payments of 15.00 p/kWh. Returns are not guaranteed.

<sup>1</sup> Financial discounting is a method used to calculate the worth of future money in today's terms.

## Payback

Using a more detailed model that also takes account of longer term factors such as inflation , gradual degradation in panel output over time and financial discount rates<sup>1</sup>, we expect the system to pay for itself in 5 years.

Over a projected 25 year lifetime, we expect the system to have a **Net Present Value of £33,627**. A positive net present value is a good indication that an investment is financially worthwhile.



# 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 CO<sub>2</sub> 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**

1,205

kg CO<sub>2</sub>  
each year

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**78% will be supplied by solar, saving**

938

kg CO<sub>2</sub>  
each year

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**5,411 kWh will be exported, saving**

1,120

kg CO<sub>2</sub>  
each year

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**Total savings**

2,058

kg CO<sub>2</sub>  
each year

**Your yearly CO<sub>2</sub> reduction of 2,058 kg is equal to...**



**a car ride of 7,350 miles**

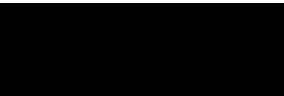


**CO<sub>2</sub> absorbed by 94 trees**

Disclaimer: We calculate and compare the likely annual CO<sub>2</sub> 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 CO<sub>2</sub> 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 CO<sub>2</sub> emissions of an average sized diesel car as outlined in the UK government's 'Greenhouse gas reporting: conversion factors 2024' (<https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2024>). To calculate what these savings equate to as the average amount of CO<sub>2</sub> absorbed by trees, we base this on a rate of 22kg per tree per year. Trees absorb anywhere between 10 and 40kg of CO<sub>2</sub> per year on average, depending on a whole host of factors including the species, location, planting density, and age.



# Quote



TR16 

Quote reference: 



Quote validity: 30 days

| Description of goods and services                                           | Price |
|-----------------------------------------------------------------------------|-------|
| <b>Goods</b>                                                                |       |
| 24 x Aiko Neostar 2S+ 500W Dual Glass All Black ABC N-Type Mono solar panel |       |
| 60 x Fastensol black universal clamp                                        |       |
| 24 x Fastensol black end cap                                                |       |
| 60 x Fastensol portrait flat tile roof hook                                 |       |
| 60 x Genius speedflash                                                      |       |
| 8 x Fastensol rail splice                                                   |       |
| 2 x BB125evo Reinforced BirdBlocker (30m)                                   |       |
| 17 x Fastensol black rail 3550mm                                            |       |
| Fox ESS KH 10kW 1ph Hybrid inverter                                         |       |
| Fox ESS CM2900 2.88kWh Li-ion - Master                                      |       |
| 3 x Fox ESS CS2900 2.88kWh Li-ion - Slave                                   |       |
| 2 x AC isolator - IMO - 63A 4-pole                                          |       |
| 4 x IMO 25A DC Isolator 4-pole 2-string                                     |       |
| 8 x MC4 4mm Connector Pair                                                  |       |
| 100m reel of 4mm2 solar cable                                               |       |
| **NET** Emlite Bi-directional Meter ECA2.n*                                 |       |
| Label sheet                                                                 |       |
| BirdBlocker 125mm evo for Solar Panels                                      |       |
| Fox ESS 3ph CHINT Meter                                                     |       |
| Fox ESS LAN Dongle (Not For H3 Pro Series)                                  |       |
| Battery Hazard Warning Label Pack                                           |       |



