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.

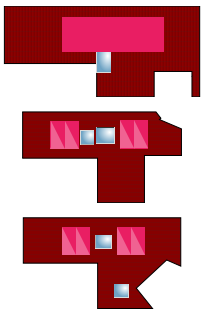
The orientation of the system

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.

Roof diagrams

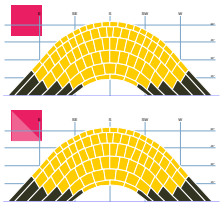


Roof South East
Orientation: -35° Pitch: 22°

Roof South East
Orientation: -35° Pitch: 23°

Roof South East
Orientation: -34° Pitch: 22°

Sunpath diagrams



Shade factor: 1.00
Kk: 929

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Kk: 929

We expect your system to generate

7,999 kWh per year

Installation data

Installation capacity of PV system – kWp (stc)	9 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)	7999 kWh

Estimated PV self-consumption

Assumed annual electricity consumption	14000kWh
Expected solar generation consumed in property	3794kWh

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.

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.

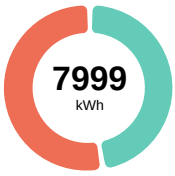
Smart Export Guarantee (SEG) information

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

Where your electricity comes from in a typical year

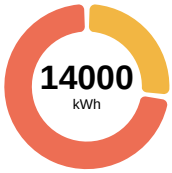
Based on an electricity usage of 14,000 kWh per year, the graph below shows how much electricity used in the property is expected to come directly from the solar panels (orange) and how much is expected to be imported from the grid (red).

Annual Generation



Direct use	To grid	Losses
3794 kWh	**4205** kWh	**0.00** kWh

Annual Consumption

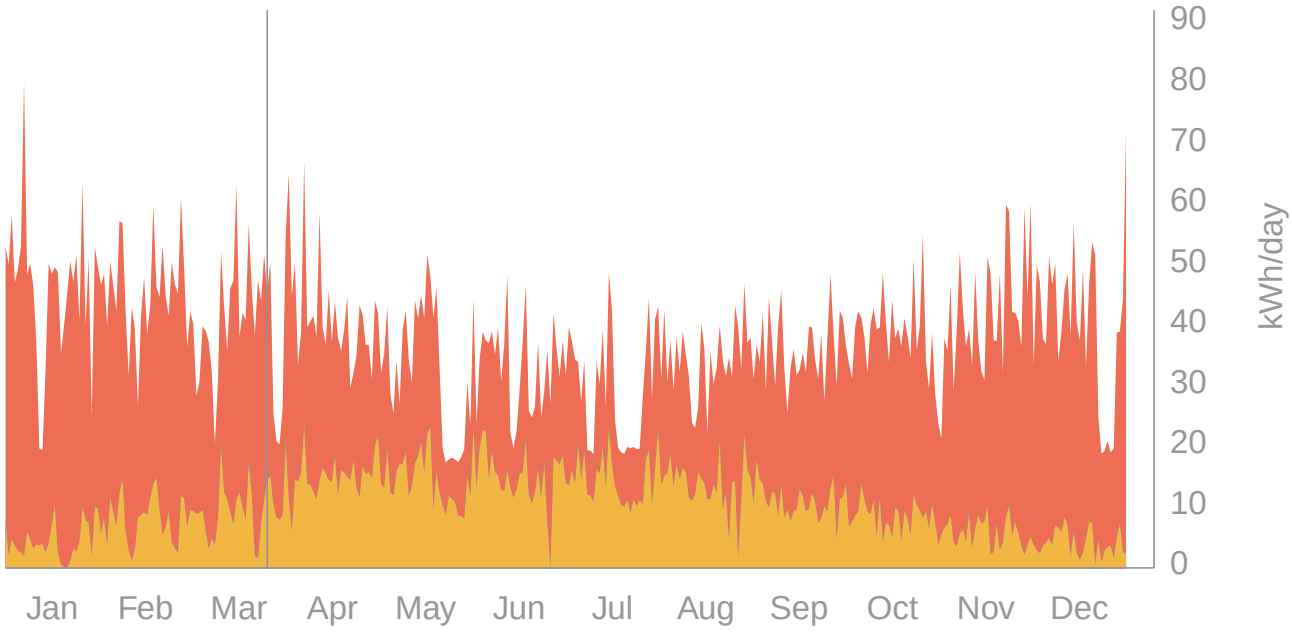


From solar	From grid
3794 kWh	**10206** kWh

Annual Import/Export

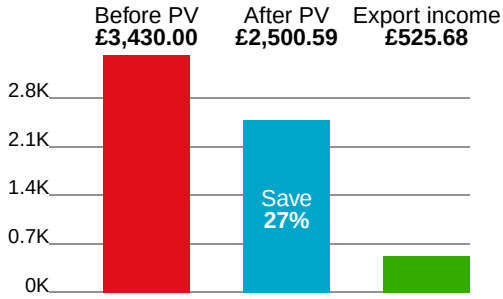
Importing
10206 kWh

Exporting
4205 kWh



Financial Benefits

Based on our model we expect you to self consume 3,794 kWh of the 7,999 kWh of electricity the system should generate - providing 27% of the annual electricity consumption of 14,000 kWh in the property.



At an electricity tariff of 24.50 p/kWh that's a saving of **£929.41** on your electricity bill - down from £3,430.00 at present! Your new bill could be **just £2,500.59 per year.**

4,205 kWh of excess solar energy will be exported to the grid. If you are paid by your supplier at 12.50 p/kWh **you will receive an additional £525.68 in income from them.**

Overall, your savings and benefits are expected to be around £1,455.10 in the first year after the system is installed.

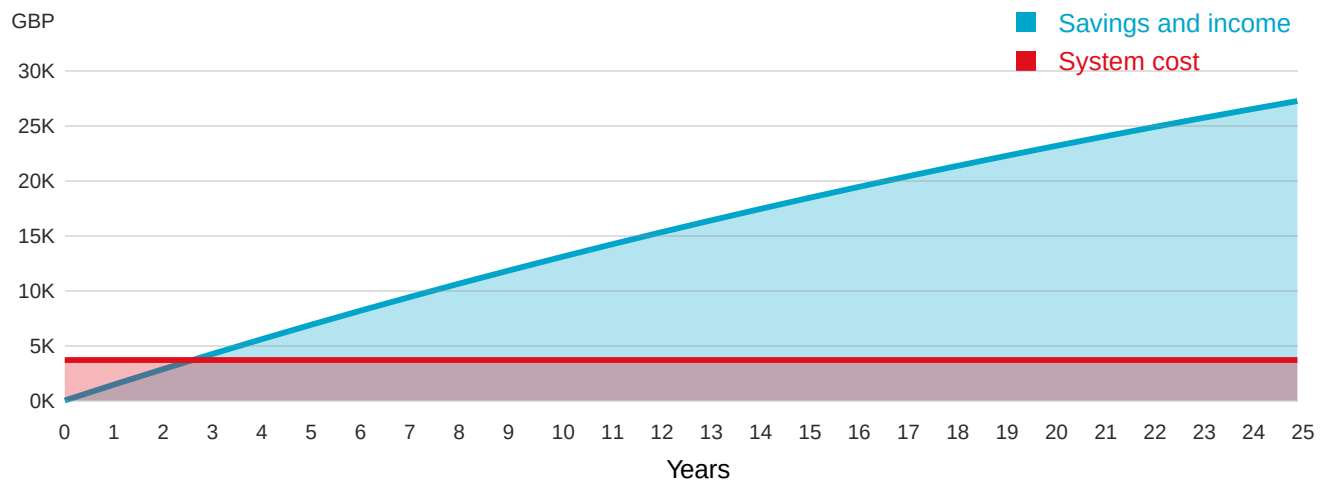
Payback

Using a more detailed model that also takes account of longer term factors such as inflation , gradual degradation in panel output over time and financial discount rates[1], **we expect the system to pay for itself in 3 years.**

Over a projected 25 year lifetime, we expect the system to have a **Net Present Value of £23,544.54.** 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 2%, electricity price that increases with inflation, a discount rate[1] of 4%, an import electricity tariff of 24.50 p/kWh, and export payments of 12.50 p/kWh. Returns are not guaranteed.

[1] Financial discounting is a method used to calculate the worth of future money in today's terms.



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_2 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

2,899 kg CO_2 each year

27% will be supplied by solar, saving

785 kg CO_2 each year

4,205 kWh will be exported, saving

871 kg CO_2 each year

Total savings

1,656 kg CO_2 each year

Your yearly CO_2 reduction of 1,656 kg is equal to...

a car ride of 5,915 miles

CO_2 absorbed by 76 trees

Disclaimer: We calculate and compare the likely annual CO_2 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_2 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_2 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_2 absorbed by trees, we base this on a rate of 22kg per tree per year. Trees absorb anywhere between 10 and 40kg of CO_2 per year on average, depending on a whole host of factors including the species, location, planting density, and age.