

How are Solar Savings / Paybacks Calculated?

Installing Solar PV Panels is no longer helping only the planet, with the government's new payback incentives, it is now an investment vehicle boosting a significant return. This document is intended to explain both the initial outlay and it's potential return in detail.

Initial Outlay - Purchasing a Solar Array Installation

The initial cost of a solar array depends on the both the area of available south facing (SE to SW) roof space and of course the initial capital available. A 1kw rated array typically takes up 6.4m² of roofspace and consists of 4 panels. The '1KWp' rating attached to the system is representative of the total combined power production of the panels at a moment in time when in direct sunlight (ie. at their peak). An array of this size, including labour, mounting and all electrical control gear would cost in the region of £3995 ex vat, with each additional KWp adding roughly £1500 ex vat to this total.



Guaranteed Government Payback – Feed In Tarriff

For a residential installation of up to 4KWp, the government have committed to paying the owner of the panels a rate of 21p per KWh of electricity generated by their panels. The output of the panels is therefore measured by an installed and approved energy meter, the rate is payable regardless of whether the power generated is used or exported back into the grid. A well situated 3KWp solar array is expected to generate 2250 KWh of electricity per year, which would result in payment of roughly £472.50 in the first year. The tariff rates of 21p are linked to the Retail Price Index for the entirety of their 25 year life time, but they are only offered to properties with a valid Energy Performance Certificate (EPC) showing an energy efficiency rating of Category D or better, prior to the solar installation. An EPC survey is quick to arrange and typically costs around £100 ex vat to complete.

Electricity Savings

The solar array produces power which is then primarily used by household appliances, with any surplus electricity exported back out the main power grid. By using the power generated by your solar panels, your appliances aren't using drawing power from your supplier; this in turn results in a significant cost saving on your electricity bill. Assuming you use 90% of the energy generated, which is realistic for a 3KWp array, you are saving the equivalent cost of 2025 units (KWh) of electricity,

which equates to annual savings of £303.75 (at pricing of 15p per kWh). However as electricity prices continue to rise, this saving will be greater year on year.

Export Tariff from Energy Suppliers

This is dependent on your current energy supplier, but typically your energy supplier will be willing to pay you 3 to 4p per KWh for the power which you don't use and instead export to the grid.

Calculations

Using a spreadsheet estimation model, which takes into account the following factors:

- Estimated Electricity Prices Rises
- Tariff Prices based on estimated RPI increases
- The 0.62% degradation of the panels output per year
- Current Installation pricing
- Using 100% of electricity generated
- South facing location without shading.

We have generated the following table below which details the expected generation and subsequent payback/savings to be paid from a range of our solar array packages:

Solar Array Size	Initial Cost	Expected Generation over 25 years	Expected Total of Feed In Tariff Rates over 25 years	Expected Electrical Savings over 25 years	Break Even Year based on Feed In Tariff Payments Alone	Break Even Year when combining Tariff Rates and Savings Made
3KWp	£7,995 ex vat	53,106 KWh	£18,328.13	£13,958.39	Year 14	Year 9
6KWp	£12,295.00 ex vat	106,212 KWh	£29,325.01 *	£27,916.77	Year 14	Year 8
9.8KWp	£17,250.00 ex vat	172,595 KWh	£47653.14 *	£45,364.75	Year 12	Year 8
20KWp	£29,500 ex vat	349,661KWh	£87,335.10*	£91,892.71	Year 11	Year 7

* Tariff Rate is lowered to 16.8p for installs over 4KWp, and 15.2p for 10KWp +