

Are you maximising your energy usage from your current PV system?

There are many ways in which you can do this from ensuring they are clean and not being over shadowed, to maximising the amount of electricity you are using within your home... More information is below;

Keeping your solar panels clean

The operating efficiency of a solar PV panel is dependent on the amount of sunlight that hits it, so if your panels are covered in dirt, they are going to produce less electricity. It is suggested to wash your solar panels 2-3 times per year for maximum efficiency. It is also worth checking from time to time that the panels are not being overshadowed by anything that may not have been there at the time of the install.

Using more of the electricity in your home

It is best to use the electricity you produce from your solar PV array in your home, since that means you don't need to buy it at approximately 17p per kWh from the electricity company. If you're not already on a great feed in tariff, selling the electricity back to the grid means you are eligible for the export tariff which is 5.5p/kWh.

There are several ways of ensuring that the maximum amount of energy generated is used within your home;

- **Solar Diverters**

One way to do this is with a solar diverter. These send excess energy that isn't being used by your appliances to your immersion heater instead, helping to heat your water. Depending on the product you have installed, the units cost from £20 to over £350 and take just a couple of hours to install. The key difference between the price of the systems is whether they have a display and you can see how much is being diverted.

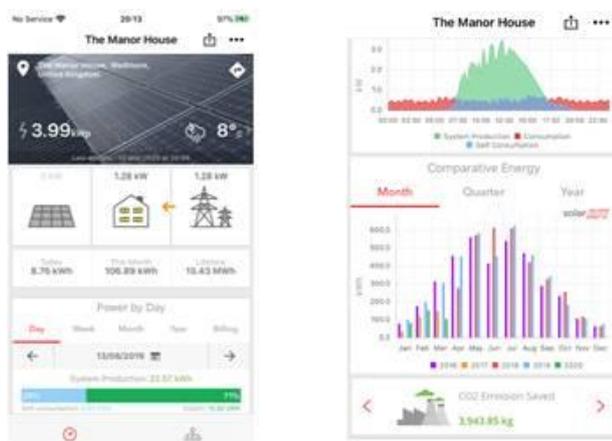


- **Monitoring**

You can obviously make behavioural changes to ensure that you are using as much of your self-generated energy as possible. For example, it is better to run washing machines and dishwashers during the day – so set them to start as you leave for work. The best way of ensuring that you are using your energy when you are actually generating it, is to have great monitoring.

Monitoring is vital, especially when trying to promote green credentials but more importantly from a system verification point of view. If you have a SolarEdge inverter and were to get a Watt Node meter installed, you would be able to monitor your total export and import of energy on a real time basis. If you have something like this installed, you would be able to decide if you need a solar diverter, as you may find that you're using all of the solar energy you are generating by charging your electric vehicle for example!

If you have a SolarEdge inverter with a watt node meter, the monitoring system is fantastic for providing monitoring for your solar array, I have it for my system and I have to say that it is invaluable. Here are a couple of screen shots from my iPhone;



The system also allows you to view all the same data from your smartphone, tablet or laptop, meaning you can access your systems performance output from where ever you are in the world. You can find loads of information on the SolarEdge website; <https://www.solaredge.com/uk/products/pv-monitoring#/>

The cost of installing a Watt Node meter including labour is £290 plus VAT. You might want to consider getting this done first and then making a decision on the immersion solution depending on the results of your monitoring. If you had the monitoring installed, you could probably go for the cheaper option of the SOLiC system because it wouldn't really matter that there was no display as you would be able to see how much was being diverted by the monitoring system.

Another fantastic monitoring solution is the Smappee; The Smappee allows for monitoring at an appliance level so is second to none when it comes to monitoring for performance.



Smappee units cost from around £500 and take up to 3 hours to install.

- **Storage**

The other way to use all the electricity you produce is by incorporating batteries into your solar PV array. Batteries will increase the upfront cost of your array and will require maintenance, but can be really worthwhile in the long run. Any electricity you produce during the day can be stored in the batteries and then used as and when you require it. Solar storage benefits include;

Power when you need it – make sure the energy you generate is the energy you use. A battery will store energy the PV system generates throughout the day, for use when you get home from work or once the sun's gone down.

Energy security – ensures you still have access to electricity even if the grid is down.

Lower energy bills – timely use of PV generate energy means homes will be drawing less electricity from the grid, protecting them from rising energy prices.

Environmentally friendly – energy generated using photovoltaic technology creates less pollution than fossil fuels during their comparative lifetime uses.

Visibility – energy consumption monitoring allows end users to see where and how much they could save.

Future proofing - as we start to see the introduction of electric vehicles, future proof your home to ensure its ready to cope with new technologies

The level of difficulty associated with adding a battery to your existing array depends on whether your solar panel system was designed with the intention of adding energy storage later on. If you have a “storage ready” solar system, you already have an inverter that can easily integrate a battery into your solar panel system. In this situation, a battery is relatively simple to install, and the installation process won't require much additional equipment.

If your solar panel system was not originally designed with the ability to add storage later, the installation will be slightly more complicated. In this scenario, you have two options: an “AC coupled” solution, or an inverter replacement.

Batteries range in price from the most cost effective around £3,000 to The Tesla Powerwall, which is seen as the market leader as it offers the ability to go completely off grid, at £8,000. Depending on how battery ready your existing array is, installation will take from a few hours to a couple of days. Please let me know if you would be interested in receiving a full quote.

