

Solar Installation at Woodpecker Cottage. Summer 2022.

The VillageArena.org Editor asked for some details of the Solar Installation here at Woodpecker Cottage as an interesting story as well as in the hope that it would help others considering the same or a similar step.

Why Do It?

For some time now I have been conscious of the need to reduce my “carbon footprint”. I have investigated alternative forms of heating, insulation options, lifestyle changes etc. I have made several changes, but the next logical step seemed to be solar panels. When I decided that this was the right way to go (before the Russian incursion into Ukraine, so before the fuel and energy price rises we have just seen) it was not with the expectation of “getting my money back” on the investment, but rather to reduce my monthly outgoings while at the same time reduce my carbon emissions. As things have turned out I may well recoup my investment sooner than I thought!

What Has Been Done?

I have 12 Solar PV (Photo-Voltaic) Panels on the Music Room roof.



These feed into an Inverter/Control Unit and then the electricity the supply either powers appliances in the house, charges up a 10kWhour Battery or feeds into the

grid. In addition, I have a sophisticated Car Charging station in the Car Port to charge the EV (Electric Vehicle) I expect to take delivery of in the Autumn.

When I spoke to a variety of Solar system suppliers, I was disappointed with quite a few of them as they either failed to listen to what I wanted or in some cases did not really know what they were talking about. E.g., when I asked about battery capacity 2 or 3 of the salesmen quoted the capacity in kW rather than kWhour. When challenged they clearly did not understand the difference. (Having been a Physics teacher I found this irritating and disappointing) For those of a less technical persuasion kW (kilowatt) is a measure of power i.e., how much energy per second – how fast the energy is used. The capacity of a battery is a measure of the Total Energy it can store and then deliver. So, a 10kWhour battery can power 10 1 bar electric fires for 1 hour. I was pleased to find one supplier (Oakwood Energy Ltd [Oakwood Energy – All Your Corporate Energy Needs Under One Roof \(oakwoodenergygroup.co.uk\)](http://oakwoodenergygroup.co.uk)) who proved to be extremely professional with an attention to detail that was very reassuring.



The low slope on the Music Room roof was also an issue. The most usual process of installing the panels is to fit support brackets that are screwed directly on to the rafters (bending round and through the tiling). This proved to be unworkable in this case as it would be hard to ensure that the panels were secure enough in windy weather; instead, we elected to remove the tiles and replace them with an integrated solar roof.



During installation a few problems were encountered due to the way previous occupants had covered the roof and the decision to install an integrated solar roof was more than vindicated.

The large battery (it weighs 120kg) also presents a few issues. Its size obviously restricted the choices of location, but also its weight limited the walls that it could be mounted on. Some of the older walls in the cottage (built around 1846) were too soft to carry the load. In the event, everything except the charger is in the Utility room. It all looks very tidy.



The whole of the Micro Generation system (the posh name for it!) has its own consumer unit, Fire service approved Isolators and is a fully compliant installation

Living With It

So far, I have only experienced sunny weather, but it is astonishing to see the system start generation electricity before the direct sun reaches the roof. The battery is usually fully charged before lunchtime, and currently I am sending more to the grid than I am using. The Feed In Tariff is derisory but marginally better than giving it away!

I have an app on my tablet that shows what is going on which I checked far to often in the first few days, but it is gratifying to see the system functionality displayed so clearly. I have already given guided tours to interested groups and I am happy to show others what has been done.

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