Switching to Solar PV

Insulation First!

We moved to Alnwick from mid Wales in December 2018, swapping an 1830s stone cottage for a 1970's bungalow. Thanks to cavity wall insulation and double glazing the bungalow already had an EPC rating of D with the potential to move to a C rating with a few improvements.

Between 2019 and 2022, getting suppliers as best we could during the Covid lockdowns, we set about improving the insulation. The attic now has insulation 18 inches deep with the boarded section raised on stilts so as not to compact the air in the rockwool. The difference in the core temperature of the bungalow was immediate - during the last winter the temperature inside the house never dropped below 14C - even when it was freezing outside.

The next task was to eliminate all draughts and reduce the condensation and mould. We replaced the wooden kitchen back door, patio doors and windows throughout the house with new double-glazed units, argon gas filled, and with the highest rating Pilkington glass available. The new doors and window have trickle vents to improve airflow – but they can be closed to retain heat when needed. Condensation is now a thing of the past.

ASHP, Solar or Both?

As gas and electricity prices ramped up in 2022, we started to look at greener ways of keeping the house warm. The spur was the government's announcement of a £5,000 grant towards an ASHP and the removal of VAT on an installation.

Following a Google search and a trawl through Trustpilot reviews we identified several heat pump installers with 5-star ratings and invited them to visit. The process for each visit was thorough and we learned something more each time, figuring out the questions we needed to ask the next engineer. I kept track of the data and costs in a spreadsheet, as we were soon getting information overload.

The final step was to calculate how much additional electricity a heat pump would consume and whether it would make financial sense, given our current annual outgoings on gas and electricity. We did the sums, and once we knew that it was going to cost at least another £200 pa we knew it wasn't the right thing to do. We deferred the decision until the cost of ASHP units decreases and energy prices drop.

While talking to the ASHP engineers, we were also getting quotes for Solar PV. It had become clear that to make an ASHP viable, we need to generate our own electricity and store it. Installing solar PV now would enable us to charge our e-bikes and a car in the garage in future. As soon as the PV system was up and running, we could export any excess electricity we generated back to the grid and start earning the Smart Export Guarantee [SEG] payment for every kW exported.

Opting for Solar

As we had the roof space and the available funds, we decided to go for the largest system we could

afford. We opted for a 16 panel-array and 6kW slimline, wall mounted battery storage in the garage. The inverter is sited above the battery and close to the electricity meter and fuse box. This keeps everything tidy and easy to access when we need to take readings.

Our installer, asked for a £1,000 deposit, a subsequent part-payment of £7,000, with the balance of £4,300 payable on completion of the installation and activation of the system. There was no VAT which made a huge difference to the cost. The time between placing the order and the installation was less than 3 weeks. The whole install was completed in an afternoon and the system was up and running by 7.00pm.

Essential Paperwork & Certificates

Our installer gave us a hard copy Handover Pack and also sent a copy by email. It includes the operating instructions, guarantees, and required regulatory certificates. One of these is the Flexi-Orb Certificate (like the alternative MSC Certificate) which we need to apply for the Smart Export Guarantee (SEG) Tariff with our preferred supplier, Octopus Energy. Octopus will pay 15p for every kW we export. We have applied and are waiting to receive confirmation of when we can start.

A Reduction in Our Energy Bills

Was it worth it? A definite yes! In March our joint fuel bill was £136 per month. In April it reduced to £115 and at the start of May it fell again to £106. I expect it to fall further. In fact, it reduced so quickly that the British Gas Chatbot insisted that I double and triple check the last meter reading as it must be wrong. Sorry British Gas AI – I was right! Once we start receiving the SEG payments we should start making further savings.

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