Photo Voltaics - could they be for you?

A 2010 Case Study- Well Cottage

Part 1 Economics

Paula and I are intending to install a PV solar panel system on our cottage this spring. Over the next few newsletters we will recount our deliberations and experiences. We had put off buying a system in previous years as the costs were high and the pay back periods were very long. However as set out below, we now think the time is right to go ahead. We have had quotations, chosen our installer and are all set to go.

Until the end of March 2010, there is a maximum grant of £2500 available from the Government's Low Carbon Building Programme. Then from April the Government is committed to introduce a Feed-in Tariff (FIT) scheme lasting for a period of 25 years. They have proposed a level and structure for the tariff but following a public consultation the actual levels have not yet been finalised. During the next three months there is an opportunity to benefit from both the grant and the feed-in tariff by committing to install a system with an approved installer within four months of obtaining the grant.

We are going to install a 3.96KWp system at an estimated cost of £16,000, that is £13,500 after grant. The estimated annual electrical yield is 3200 kwh (units of electricity). Under the proposed FIT of 36.5 pence per unit, this will produce a tax free income of £1168 pa. There is also a payment of 5p for all units exported to the grid. Lets say 50% of the electricity is exported which then generates an income of £80. Finally there is a saving for each unit consumed and not bought from our electricity supplier, Ecotricity full green tariff, at 12p per unit which equates to another £192. The total income and saving is estimated to be £1440 pa. This is a payback of 9 years and the tariff payments are set to continue for another 16 years after this.

One alternative way of financing the cost of the panel installation could be through a mortgage over the 25 year term of the tariff. Installation of panels can add considerably to the value of a house upon resale.

Part 2 Grant and Tariff Updates, Supplier Selection

At the start of February, the Government announced the final details of the Feed-in Tariff (FIT) scheme and closed the old £2500 capital grant scheme to new projects. Fortunately we managed to secure our grant during January. The FIT for new PV installations will be 41.3 p for all units generated plus 3p for any units exported. The FITs will be index linked annually and confirmed as tax free. Details of the full FIT scheme are here: http://www.decc.gov.uk/en/content/cms/news/pn10_010/pn10_010.aspx

We invited four West Country installers of PV systems to quote for our work: Becosolar, Chris Rudge Renewable Power, Solarsense and G R Edwards Ltd (approved installer for SEGEN systems). Two of these companies (Beco and

Solarsense) were selected based on feedback from CCA members who already have PV systems installed. Initially, all were willing to give us a budget estimate based on approximate dimensions provided by us and photographs of our cottage and its roof. Of these estimates, Becosolar was over 10% higher than two which were similarly priced (Solarsense and Chris Rudge), and one, G R Edwardes, which was 10% lower than the other two. We short-listed to Solarsense and Chris Rudge as G R Edwardes had only very limited practical experience. The two short-listed companies performed site surveys and provided us with firm quotations. Interestingly, the site surveys had no effect on the budget prices originally submitted as the job was deemed by both to be uncomplicated. We decided to give the work to Solarsense as they were cheaper than Chris Rudge and had masses of experience in installing PV systems. Our installation is booked for week commencing 6th April.

Part 3: Installation

Our installation was planned for the 6th April. It did not go altogether smoothly. A few days before, Solarsense contacted us to arrange for the scaffolding to be erected. The scaffolding company they used (Castle Scaffolding) were not very domestic customer focussed. When they arrived, they started to treat our lovely flower and shrub border as a building site and were quite rude when asked to walk round a path instead of through the flower bed. Additionally the scaffolders also managed to break several tiles on the roof as they put the scaffold up. After complaining to Solarsense, Solarsense now say they won't be using Castle Scaffolding again, and as a gesture they have sent us some garden gift vouchers and will repair the damaged roof.

The second blip was just before Solarsense were due to install, when they advised us that they were short 5 panels (out of 22). They said their panel supplier, Romag, was very busy and had let them down. They wanted to delay until all 22 were in stock or alternatively put up 22 other panels of Taiwanese origin (Solarcentury make). However we had specifically ordered UK produced panels with a black frame to match our slate tiled roof and reduce the carbon footprint of our installation. Solarsense came on the contracted date and put up 17 panels and all the electrics within 8 hours using 2 electricians and 2 pv installers. It was very efficient and there were no problems. The other 5 panels were due to be installed two weeks later. As our system is two parallel strings of 11 panels, if they are not balanced electrically apparently the output is reduced, so it was only possible to have one string of 11 switched on. The 11 panels worked brilliantly during the lovely sunny weather and then on the 20th April the fitters came to attach the remaining 5 panels to the roof and they switched on all 22 panels.

The electrical equipment installed comprises an inverter, a total generation meter and an export meter. The inverter is in the roof space, the total generation meter is neatly placed in the house beside our fuse system and the export meter is outside in our electricity meter cupboard. With all 22 panels working we have been producing around 25 units a day during this current spell of sunny weather. We are not yet signed up to receive the feed-

in tariff as we have some paperwork to complete and send to our electricity supplier Ecotricity. We are unsure about how the combination of export meter, total generation meter and mains meter are working as our analogue electricity import meter which is over 20 years old is running backwards as we produce! Ecotricity have told us that they will get a digital import meter fitted in due course which will correct the situation.

Part 4 Update on Performance and FIT payments

As recounted in part 3, our 22 panel 3.96 KWp PV system was commissioned on the 20th April and has now been generating electricity for a little over 6 months, through a beautiful summer and a reasonably sunny autumn. We are delighted with the performance so far. The output has exceeded our expectations. Already 3000KWh of electricity has been produced against a forecasted annual production of 3200KWh. Our best week's output was 174 units in the last week of May, whilst our lowest week was 65 units during the last week of August. We are exporting close to 80% of our production even though we are at home most days and have changed our habits to use our electrical appliances during the day wherever possible.

We have received one Feed-in Tariff payment so far, and another is due in November. To get the FIT payment we had to register our system with an electricity supplier, in our case Ecotricity. We had to provide Ecotricity with our MCS Installer Certificate which proved that both our installer and the solar panels were approved by the Government. Then Ecotricity registered us with Ofgem, the electricity industry regulator and provider of tariff payments. This paperwork only took about a month to come through and was very simple to do.

In an earlier part of this case study we looked at the theoretical economics of installing PV. Now we have some firm data ! Up to the 29th September we generated 2576 units and exported 2033 of them. This will have produced an income of £1064 from the generation tariff and £61 from the export tariff, a total of £1125. We have also used 543 units of our electricity which would have cost us £67 on an electricity bill. So the total benefit to date is £1192. Our system cost`£16000, so we have seen a 7.5% annual return based on less than 6 months performance. You can't equal that in any bank or building society account.

Our recommendation if you are thinking of having PV installed is to go ahead as quickly as possible and start to reap the benefits. The Government has confirmed in the spending review that the FIT scheme will continue as planned and they will not look at it again until 2013, which is what was originally planned at the outset. The schemes where you rent your roof to a company and have panels fitted for free do not seem to us and independent advisors like the Consumer Association to be good value, so if you can afford the investment or can get a low interest loan, have panels installed yourself.

Reference: http://www.which.co.uk/news/2010/09/free-solar-panels-not-such-a-great-deal-231808/