



Solar PV on the cow shed

swarm farmer profile

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Paul George is a Cornish dairy farmer who keeps 450 cattle on Nansmerrow farm, near Tresillian. In partnership with an independent private investor Paul has recently had solar panels installed on the roof his cow shed and milking parlour. Paul was spending over £15,000 a year on electricity largely to run the dairy unit and looks forward to seeing the big reductions in his energy bills from now on.



The footprint of the cow shed and milking parlour on Nansmerrow Farm is approximately 2500m², and roughly half of the roof has been covered by solar photovoltaic (PV) panels except for the light spaces which still allow daylight to shine through. The solar PV system has a 126kW peak output and is expected to generate 1000kWhrs per kW installed. The solar panels work literally from sunrise to sunset, they are powered by light from the sun and not heat so an overcast day will still generate electricity. Paul explained that *“Having solar panels on the roof is utilising a wasted space, its ideal!”*



The panels were supplied by Bright Sparks Solar and installed by local firm Moraleco Ltd., and the inverters (pictured to the right) were supplied and installed by ELTEK renewables.

The whole installation process took just three weeks to complete. In April 2013 the inverters were switched on and the solar panels started generating electricity. Ideally, a full 12 months needs to pass before Paul can accurately assess the performance of the solar PV system and quantify the savings he will be making.



The inverters supplied by ELTEK renewables

Paul, working with Tim Dart (Farm and Renewable Energy Adviser) found a private investor who has taken a lot of the hassle out of the whole process and essentially rents the roof space. Solar panels are considered to be a low-risk investment but for Paul they are particularly low because the private investor has taken on the minimal risk and responsibility including the cleaning and maintenance of the panels.



European Agricultural Fund for Rural Development: Europe investing in rural areas.

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The only significant cost to Paul was the legal fees, he explains *“The legal fees to set up this arrangement did cost me a lot but it’s for a 25 year relationship so broken down over 25 years it doesn’t work out too bad, and you wouldn’t want to enter into such a long-term contract without legal advice”* Paul used his usual farm solicitors who are a big firm and are familiar with the renewables industry.

The logistics

As a rule planning permission is not required for mounting solar panels on roofs as they are considered a ‘permitted development’. However there are conditions that need to be met to benefit from permitted development rights such as building regulations that stipulate the existing roof can carry the load of the solar panels. In Paul’s case, the private investor handled all of this.

One of the challenges facing farmers wishing to invest in renewables in the South West is the capacity of the current grid. In Cornwall and Devon in particular there are capacity issues. Paul managed to get in early and it was relatively easy, but this may not be the case now so farmers are advised to check with their local energy providers.

Another limitation of generating your own electricity is the export capacity of a farm or small holding. This varies considerably and is linked to the infrastructure of the local electricity board and to how much the farm already utilizes. Examples of high electricity enterprises are dairies, any farms with cold stores and those with holiday accommodation.

To find out more...

Visit the [Solar PV](#) pages of the SWARM Hub to find out more about the different types of [Solar PV](#) panels, the costs, the regulations, and site considerations.

If you are interested in generating [renewable energy](#) on your farm and are not sure which most suits you visit the [renewables section](#) of the [SWARM Hub](#).

Or if you would like advice on how to better manage your energy, water and inorganic waste, book a FREE on farm visit with a [Resource Efficiency for Farmers \(R4F\)](#) consultant now.