

The Sheffield Solar Farm

Micro-Generation Database

September 2012, Report 16



Update on the Ipad App

Back in May we ran an article on a project which some of our students have been undertaking. David and Jamie have been working on an app for the Apple iPad which they hope will help educate people on the benefits of combining PV technology with batteries.

“The app will allow users to enter information about their PV installation along with some information about their electricity consumption.” Jamie said. “It will then display a typical years' worth of generation and consumption data on a graph, along with the amount of PV being exported at a given time.

“The user can then introduce a battery into the system and observe how the size of the battery will impact on the amount of PV energy they export. Using more of the energy you generate in your home benefits your pocket as well as the environment. Reducing the amount you need to import lowers your electricity bills while smoothing your demand makes the grid more efficient.”

David said “First of all we'd like to thank everyone who responded to our our call for help a few months ago when our summer project was just getting off the ground.

“A lot has happened since our last update and the app is now functional and in the qualified hands of an app designer who is building its front so that it looks and feels the way we want it to. We are hoping this will be completed before Christmas so that it can be thoroughly tested and available on the app store in the new year.

“Once the app is available, it would be great for Microgen Database donors to use it and give us feedback on their experience.”

How to use the site...

If you think any part of the site is hard to use, [email us](#) and we will include an article here.

Csv importer

Some of you have noticed that the csv importer is no longer available. This feature is used to send data files in directly to the database, so you don't need to enter each data point manually. It was removed from the site as so many people had difficulty with it. Since removing it we have been surprised by the number of emails from people asking where it is. It seems that more people have been using it than we've been aware of.

We do not intend to put the link back on the website until we've improved the tool so it is easier to use, however for those of you who have used it in the past, or want to have a go at using it, you can still do so.

You can use the tool by logging in, then following [this link](#). If you do have any queries on using the tool, you can [email us](#). It's best if you include as much detail as possible, and a copy of the data file you are trying to import.

Reporting table for September

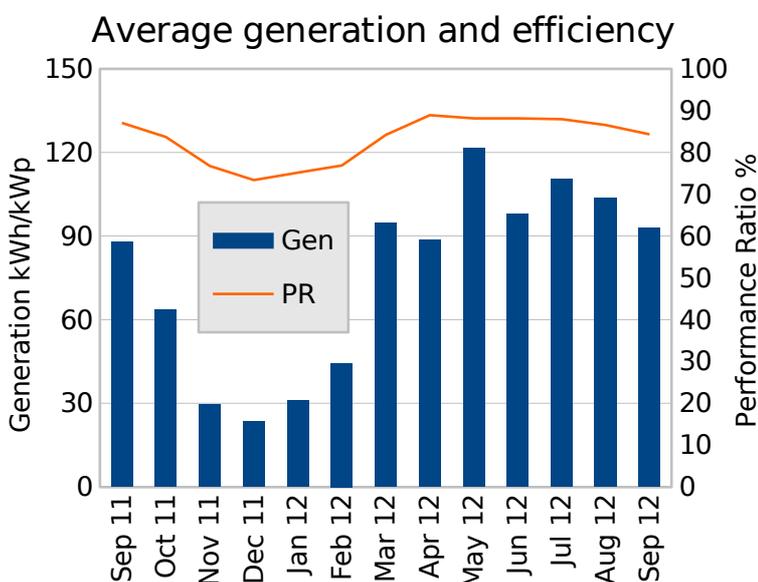
There are no changes to the reporting table this month. There was a good amount of positive feedback on the changes to the reporting tables and graphs, for which we are grateful.

Some did ask us to 'unprotect' the data sheets in the reporting tables, but we are unable to do this at this time. These tables have been protected so that they cannot be cut and pasted, and we have taken this measure as there is now a significant amount of data. We are happy for you, our donors to use this data to determine the performance of your systems, but we don't want the data used for commercial or other research purposes, unless agreed with us beforehand.

If you do wish to use the data in this way then drop us an email and we will be happy to discuss possible uses of the data.

Generation and performance

The average generation for September this year was 5kWh/kWp higher than last September, causing a slight increase in average generation to 905kWh/kWp.



Featured Installation

Down in Kent, John and Penny installed a 3.92 kW system on their new build home last July. There are a number of unusual features of the house as John explains.

“We wanted to build a modern house but also pick up some more unusual building materials. The house walls are constructed with **hemp lime**, the roof and some cladding is zinc and there is rather a lot of glazing. It is in some ways a typical white box, mid life crisis house. We completed it two years ago.

“Some of the services were unusual and included full Mechanical Ventilation and Heat Recovery incorporating an earth tube for tempering the inlet air (a 30 metre long underground duct), a grey water recycling system to take shower water and use it to flush WCs and a rainwater harvesting system for all garden and outside tap water supply. We also installed an evacuated tube solar hot water system.

“The main heating system is pretty conventional being a condensing boiler with a 300 litre pressured tank, underfloor heating on ground and first floor split into three zones with wireless room thermostats in most rooms. All the lighting is low energy, the vast majority being LED down-lighters, which are brilliant (excuse the pun). We are also in EDF’s smart meter trial so we can see our gas and electricity usage in real time.

“The house is quite large (285 square metres) and so far the energy usage is reasonable. The gas usage is running at 13,500 to 14,000 kWh per year (49 kWh/m²) and the electricity net of the PV input at around 3,800 kWh (13 kWh/m²). In carbon terms allowing for 1800 kWh of PV export displacing grid electricity, our carbon footprint is about 15 kgCO₂/m² for all energy use, not just regulated. With the feed in tariff income we are comfortably in negative fuel bill territory at the moment.

“Of all the technologies the PV is the least visible and easiest to live with. I might have to go on to the roof and give the panels a clean once a year as they are pretty flat but that isn’t a big deal. Full marks to the PV.”

For more details on the PV system see URN818 in the database.



John and Penny's house



A view of the 3.92kW system

Forums

The forums have again seen some interesting discussions.

Rick M has roof damage from his PV installation, and has been looking for a surveyor to assess the damage. This should be of interest to most people with PV installations as UK rafters tend not to be thick enough to cope with some commonly used screw sizes. PhilR provided some very technical information about the problem.

There has been a good deal of discussion on the requirements for informing Distribution Network Operators for larger sub 4kW systems, over two threads, [here](#) and [here](#). Look out for an article on this in next month's report.

Visit our micro-generation website at: www.microgen-database.org.uk
and our testing operations site at: www.sheffieldsolarfarm.group.shef.ac.uk