

It's all in the monitoring

Solar power provides an opportunity for social housing associations and landlords to improve the long-term energy prospects of tenants by alleviating fuel poverty and greatly reducing their carbon emissions. And, despite cuts to feed-in tariffs (FITs), some of which have already taken effect, the benefits of subsidies for landlords and discounted electricity bills for tenants offered by renewable energy will continue to transpire as inflation continues to rise and utility companies increase their prices. However, there are other measures that photovoltaic (PV) installation owners and their tenants can put in place to achieve the greatest benefits.



Mark Elliott, Director

In the following, Mark Elliott, Director of energy monitoring specialist Energeno, explains how monitoring technology and smart meters hold the key to unleashing the full potential of PVs, and how Energeno's range of equipment can help landlords and tenants alike combat fuel poverty.



Realising the potential of solar power in social housing...

- Exporting electricity
- Below average usage
- Your average usage
- Above average usage

As industry reports have stated, the full benefits of renewable energy can only be achieved if they are supported by efforts to encourage people to be energy efficient. Installations are often out of sight, out of mind, especially in social housing and commercial environments, so encouraging the behavioural change needed to achieve the true benefits of solar power has been difficult in the past.

Landlords and tenants alike need to gain true insight into energy use in their building, which will give them control to reduce their own electricity bills – a key goal shared in social housing renewable energy strategies and something we incorporate into our offering of energy monitoring technology.

The benefits of energy monitoring – introducing Wattson Solar Plus

Energy monitoring improves the financial and environmental performance of domestic and commercial buildings, and this has always been at the heart of what we do. An update to our Wattson Classic monitor – that shows electricity being generated in any building, whether it uses renewable energy or not – is the Wattson Solar Plus, which literally gives PV users the green light to use free electricity. Connected to an installation, it fits onto a shelf or even next to the TV and shows, in real time, how much electricity is being generated by an installation, how

much energy is being used around the house and the carbon emissions being produced by energy use.

When an installation has generated surplus power, the monitor glows green, telling people when they can use free electricity or sell it back to the grid. Giving tenants transparency in this way enables them to shift from using high energy consuming items, such as washing machines, when it is most costly to do so (i.e. when an installation is not generating at full capacity) to a time when it is free. Not only does this aid with the ever present issue of fuel poverty facing many tenants by helping to reduce their electricity consumption by up to 60%, but it can also increase the profitability of an installation for the property owner.

Householder Sefton Owens champions low-carbon living and turned to the Wattson Solar Plus to measure the effects of solar PV. Owens explains: "Combining solar power with the Wattson Solar Plus has enabled me to get maximum efficiency out of my installation, and in the 12 months I've combined the two, I've managed to reduce my electricity consumption by over 60%. At any time I can see exactly how much energy is being produced and as soon as I'm in negative territory (i.e. generating more than I'm using) it is the time to switch on any electrical items I might need.

"If a few hundred watts are being generated, I'll make sure that any

electrical device that needs charging, i.e. laptops, phones, batteries etc., are all charged for free. When it's generating up to 3-4kWh, it's on with the washing machine, dishwasher, vacuum cleaner and generally larger energy consuming items.

"The Wattson has also engaged the rest of the family in energy saving. It allows us to control the energy we use and its visual impact positively encourages people to look at it. I firmly believe that this type of product will have a significant impact on not only reducing the CO₂ we all produce in our households, but, as I've proved, can save some serious money."

The Solar Plus system also uses multiple transmitters so that one monitoring system can tie together energy consumption generated in different buildings to where the PV system is installed – something that appealed to Professor Ian McLean and his family. Professor McLean explains: "A key reason for investing in a PV system was to benefit from the FIT and make use of the free electricity we were going to generate. However, when the PV originally went in, the inverter was installed in a different building, so it was impossible to see what was happening and the energy being generated from the house.

"Wattson Solar Plus provided the ideal solution because it gives us all the information we need on a single monitor. And it copes with the fact that our PV is on a separate building to the one where we use the energy."

This solution can also be used in schools, libraries and other buildings fitted with solar PV and using their own energy.

Providing a detailed analysis of energy use

While our monitors provide immediacy for users, i.e. they can make a decision to turn off the lights or turn on the washing machine, depending on their energy consumption at that moment in time, Wattson Anywhere is our online portal that provides a

breakdown of energy use in a building and how much free electricity has escaped. This shows users where and when they have consumed and saved the most electricity, which can help them make decisions and plan their energy use over a period of time. It can be accessed remotely via the internet and also encompasses an online community, so tenants can share their experiences and ideas on energy saving with each other.

We know that using energy monitoring technology is a real game changer and our products provide visibility of energy use and generation, consistently reminding people of the potential their rooftop holds. After all, seeing is believing for most people.

Building on behavioural change with Energeno's smart meters

We have demonstrated how our products can change people's attitudes towards energy use; however, we wanted to bring something else to the market that would assist users in their mission to become completely energy efficient and reduce their outgoings.



Using 'free electricity' becomes easy with monitoring technology, and many of our users have become experts. However, this is only the case if you are at home at the same time as the energy is generated. Our latest innovation is Optiplug, a smart socket that listens to the Wattson system and learns how much power

appliances use around a building. It then automatically diverts enough energy to power an appliance, when free energy is available.

In addition to this, we also supply Optimmersion, which converts surplus free electricity into hot water. This device works in a similar way to Optiplug, switching surplus energy to immersion heaters. It is installed between the immersion tank and the consumer unit and supplies variable power for hot water, depending on the excess energy being generated. Typical savings for Optimmersion users are around £55 per year for a gas boiler and £80 for electrically heated water.

The use of surplus energy to heat hot water brings another dimension to energy efficiency and we are confident this type of product will fast become a mainstream add on to any installation.

We're seeing more and more renewable installations fitted as standard on new housing. However, we know that the biggest driver for installations is the financial benefits. When landlords invest in solar PV, they are freeing tenants from utility companies, enabling them to secure their own energy use, and in some cases, lifting them out of fuel poverty.

But when they combine this with the right monitoring technology and smart metering, the results can be far greater than they had hoped.

To find out more about Energeno's range of products, please visit our website.



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