

CASE STUDY

Can you run electric radiators from solar panels?



Electric Radiators powered by Solar panels will reduce your heating bills during the colder months, whether using solar or wind, some households and commercial properties have the potential to generate enough power for your heating needs for most of the year, essentially providing them with warmth at no cost that's completely carbon neutral.



REAL-TIME ENERGY USE READOUT



TOTALLY MAINTENANCE FREE



CHILD PROTECTION



VISUAL POWER DISPLAY



ADVANCED START UP CONTROL



BOOST

Karen and Mike R. in Cambridgeshire wanted to save energy as well as the planet and with the help of C.R.C Electrical & Renewables, a long-serving family run business panels with 1000s of Pv Solar installed on domestic and commercial roofs across Norfolk and Suffolk that we can trust, opted for a new electric heating system from Intelliheat and Solar PV installation. including our iSense wi-fi controlled electric radiators.

Solar Photovoltaic (PV) panels are installed on the roof of our homes and use the energy from the sun to power our electrical appliances, including our iSense wi-fi controlled electric radiators. Karen and Mike were fortunate enough to have the resources and the vision of the future, therefore made the sensible decision to go green with the help of self-generated energy, Crc services and Intelli heat.

The energy generated from the 12 KW photovoltaics installed by Christian is paired with the 9.5 Kw of iSense wifi electric radiators.

Intelliheat systems are ideal to meets todays' energy saving targets and save you money and C02 emissions.

The solar inverter converts the DC electricity and generates it into AC which is then fed back into the mains of your home, fundamentally, an inverter accomplishes the DC-to-AC conversion by switching the direction of a DC input back and forth very rapidly, as a result, a DC input becomes an AC output. This green energy can then be used to run your electric radiator to heat your home at no cost.

CRC Electrical provided the Solar PV installations as follow:

- Inverter: Solax X3 G4 Hybrid 10kw inverter.
- Batteries: 17.4 kwh of battery storage.
- Solar panels: 32x Eurener 375w all black mono crystalline solar panels = 12kW.
- Fastensol roof mounting system
- Electric Heating System: Seven iSense wi-fi electric radiators.

Solar panels can power Intelli Heat electric radiators, along with any other electric appliance, providing your home with self-sustaining, carbon neutral energy.

On sunny days, the 12kW PV System can generate up to 50kWh, with a minimum of 15kWh generated on cloudy days. Karen’s and Mike’s property doesn’t need much heating but we’re planning to run our electric radiators for around 6 hours a day. If you’re trying to work out whether it’s worth it to buy solar panels, as an indication a 12 kw solar system for any home or business should save around £78000 over the course of its expected 25 year lifetime, that’s of course based on grid electric costing £0.34/ kWh.

The following iSense wi-fi radiators were installed in the property:

- 1 x 1000w, installed in the hallway,
- 1 x 1000w, installed in the landing
- 2 x 1250w, installed in the Kitchen
- 2 x 1500w installed in the L. room
- 1 x 2000w installed in conservatory

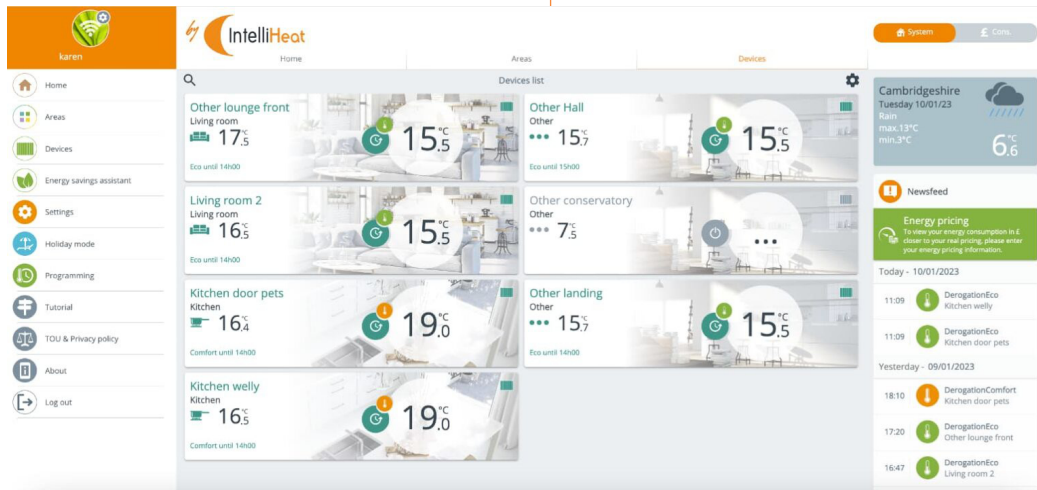
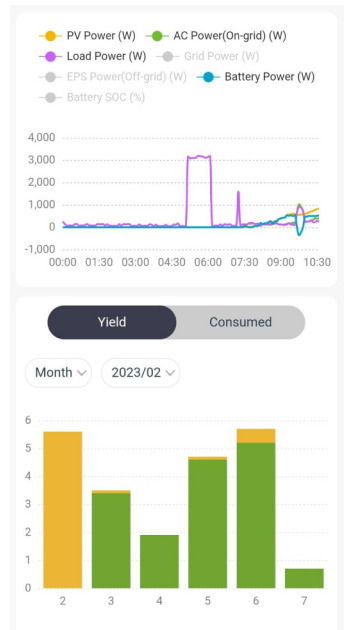
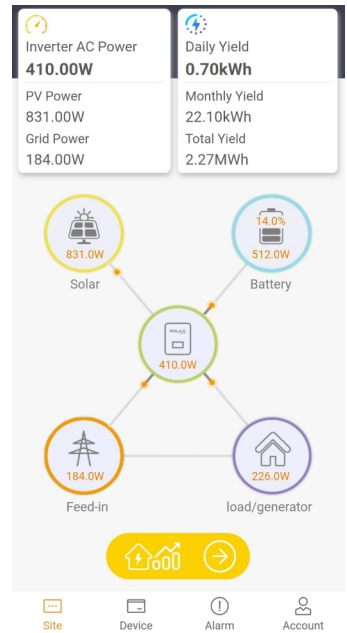
With a Total kWh output of 9.5kWh

To calculate how much energy these radiators would use per kilowatt hour (kWh), their wattage needs to be converted into kW and then multiply that by the number of hours we plan to use them. In this well insulated property built after 1986, double glazing and cavity walls, the power output requirement per m3 is 30w.

Due to the precise temperatures set point, the Dual energy optimisation, Opti Power, high thermal output and many more energy saving features like Zoning, Self-learning mode, Real-time energy consumption monitoring, Presence detection, The Intelli Heat system, with the Heating Management App, will use on average 6 to 7Kw / hour maximum, due to the Heating Management App and the build in Eco-design, energy saving features. The iSense can be used in virtually any building with a solar PV system, whether that’s a home, a commercial or a public building.

Heating Management system

The efficiency of Karen and Mike’s heating system is greatly increased by dividing the home into distinct heating zones covering different heating needs. In this case, the iSense installation is controlled with the dedicated cloud-based Electric Heating Management Application reducing Co2 emissions helping Karen & Mike to be greener and save on energy consumption.



Karen and Mike’s will have total control over every individual radiator or zone, select the exact set-point temperature desired by family members and lifestyle, keep the kitchen radiator at a lower temperature avoiding too much heat while cooking, or have the bathroom a little warmer for luxurious bath times with a glass of wine and favourite magazine.

Karen and Mike’s
Cambridgeshire 2023

