



Home Energy Case Study

Retrofitting a semi-detached family home with solar panels

About the home

A traditional Edwardian semi-detached south-west garden facing house in central Berkhamsted.



What motivated the retrofit?

To reduce the carbon footprint of the home and contribute to the reduction of CO2 emissions in the UK.

To reduce utility bills.

Solar panels

A 3.5 kWh 14 panel solar panel roof array installed in 2012 has generated nearly 30,000 kWh over 10 years.

The panels are connected to an inverter located in the loft and wired via the outside of the house to the incoming electricity supply in the hall.

There is a meter and monitor that shows how much the system is generating and how much electricity the home is using, net of the solar generated power.

What measures were installed?

A 3.5 kWh solar panel installation comprising 14 panels was installed in 2012 by a local supplier.

Double glazing and loft insulation were installed 15 years ago by local suppliers.

All light bulbs converted to LED bulbs in 2017.

What impact has the retrofit made?

The loft insulation and double glazing made a dramatic reduction in the winter bills.

The solar panels have helped the family home save about 1,100kg CO2 per annum and provide electricity for the home; any excess is exported to the national grid.

LED bulbs use around 90% less energy and last up to five times longer than incandescent bulbs. This home is saving about 100kg CO2 per year by using LED bulbs throughout the house.

The EPC Rating for the property has been raised from an F to a C.. The house has solid walls and to reach a B requires additional wall insulation.

At a glance...

CO2 savings from the solar panels equates to 10 return flights to New York or 3,000 Big Macs. This is equivalent to the CO2 stored in 53 mature trees



The owner says: "On their own these panels will not save the world but collectively domestic solar panels can make a big impact on the UK's carbon emissions"

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