Smart phones, Internet create smart energy revolution

By Fiona Grahma, BBC News

Alan Woodham is enjoying an enviable retirement.

Aged 60 he and his wife like to travel as much as possible. In the mean time their home is left empty — which in the winter could mean burst pipes, and an insurance nightmare to return home to.

Not exactly the après ski experience they look forward to.

All this changed, says Woodham, when he joined a field trial for a new smart home energy system called PassivEnergy.

"The benefit to us is that I can control it remotely.

"While we're travelling in Australia or something like we were last winter when the winter was very hard, then clearly being able to check occasionally that the house is OK, the heating system is functioning and checking what the temperature is inside the house is pretty good."

Andy Woodham Andy Woodham on PassivEnergy: "You just touch the icon, it loads the application, and it just automatically links through."

The system lets you to control your heating and hot water from a touchscreen interface at home, online or from an app on your smartphone.

First you set a few basic rules. Then the system will learn how long your home takes to heat up and cool down, when you are most likely to need hot water, and act accordingly.

Passiv Systems founder Colin Calder says the platform has been

designed with a simple interface, on top of a back end that can be adapted to manage all energy needs including air-conditioning, solar installations, and heat pumps.

He started the company in 2008 while building a zero carbon home.

"I stood back and thought, this is completely unmanageable.

"If we've got the Kyoto treaty driving us towards a zero carbon house, how can we possibly expect consumers to manage those homes efficiently if we've got all these different systems and they're not integrated.

"If you can't find the solution on the market, go and create it."

Company research found 47 percent of people have no idea how their heating works. Calder decided making his system accessible from ordinary consumer devices could help.

"Almost everyone has a mobile device. People like to be able to control things with that mobile device.

"So if you're going to be home late because you're going to be out for a meal then you can control your energy consumption on the phone."

Data is sent to company servers — the cloud — every 10 minutes, for analysis and to help with grid and supply balancing.

The intelligence behind the system stays behind.

"To do proper control in the home then the intelligence needs to be in the home.

"We firmly believe that the home can go offline, there are all sorts of security issues, it would be dangerous for people to be in the home when the temperature goes below a certain

level."

Critics point to the fact that data held on systems like this could potentially allow hackers to work out when your are most likely to be away from home, leaving it vulnerable to thieves.

But Calder says data is fully encrypted, and as inaccessible to prying eyes as possible. He also says the system can slice up to 23% off your energy bills.

"It's the sort of — why wouldn't I want that? I'm better off, I'm more comfortable and I've got control."

He's not alone in harnessing consumer devices, cloud computing and the internet to create smart energy products.

Across the Atlantic iPod designer Tony Fadell found himself having a similar moment of clarity while designing a green home in Lake Tahoe.

Read the whole story