

Everything you ever wanted to know about Energy monitors (and more...)

What is an energy monitor?

An energy monitor is a device that households can use to monitor their electricity consumption at a point in time - for example it can tell you how much power you are using at that moment, or work out how much last week's energy consumption cost you in pounds and pence.

How does an energy monitor work?

Typically, an energy monitor comes in two parts. An 'induction clamp' clips around the supply cable coming from your electricity meter - the alternating current in the cable generates an electromagnetic field which in turn generates a current in the clamp (don't worry - it's all quite safe!) - the clamp measures this current to work out how much power you are using. It then transmits this reading every few seconds.



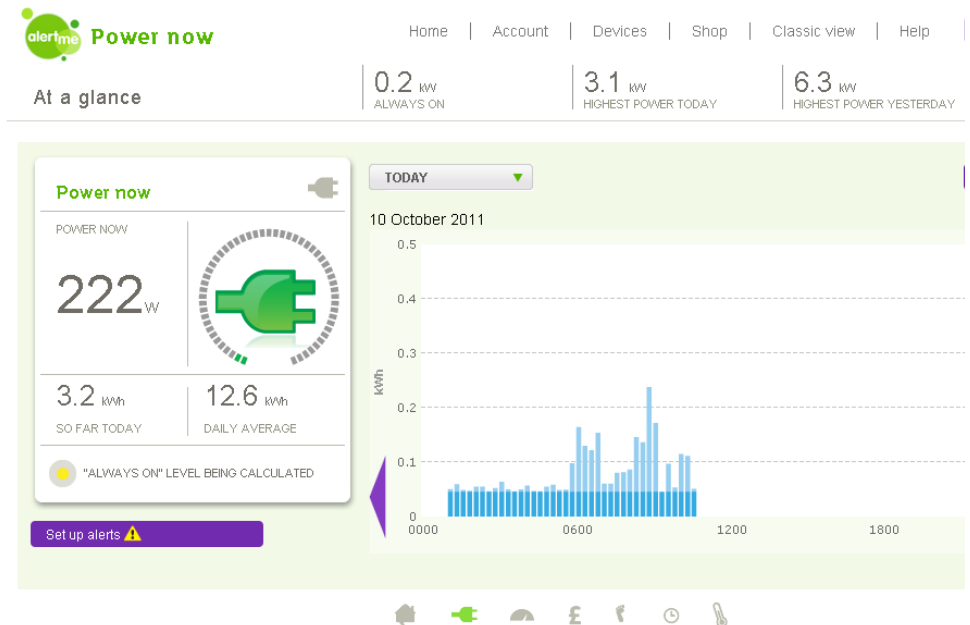
The second bit is the desktop display - this unit receives the transmitted reading, and pops it up onto an LCD display in real time. If you turn the kettle on, you can see the reading shoot up within a few seconds on the display. Often, the desktop display will also record basic information on how much energy you have used and store it in its memory for as a number of weeks or even months - this means you can keep an eye on how much electricity you are using over time, and hopefully watch the numbers come down.



Are all energy monitors much the same?

You get what you pay for - simple monitors all have similar functions in as much as they all tell you how much power you are using at any point in time, and how much it is costing you. Some of the more expensive models such as Current Cost have a PC connection, allowing you to upload data at regular intervals and record it, or even publish your data onto the internet in real time... if that's your kind of thing!

More recently, systems have started to appear that are designed to link directly to the internet. The Alertme Energy Monitoring system plugs into your broadband router and sends the data to the Alertme servers - this system allows you to monitor consumption over any web browser anywhere, or even on the go using an iPhone app. In addition, you can add wireless plug-in monitors to log the power consumption of individual devices.



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Why would I want to use one?

Studies have shown that increasing householders' awareness of the energy they are using can help them to reduce their consumption by around 5-10%. Homeowners often have a limited understanding of how much power is used by different appliances, lighting etc - devices such as this can help people to learn what uses the most electricity, and adapt their behaviour either to use them less wastefully, or switch to a more efficient alternative.



As soon as an energy monitor has been installed it's not uncommon for homeowners to go around the house switching things on and off to work out which appliances are most power-hungry. You may also find yourself turning everything off to see how low you can get the reading (although see 'What else do I need to be aware of?')

Should I buy one?

Anecdotally, households tend to get the most out of energy monitors in the first couple of weeks of using one - in this time people learn which appliances are the worst culprits, and tackle the standby "vampires" which draw a small amount of energy 24/7.

Many local authorities have cottoned on to this observation, and now lend out energy monitors at their local libraries - Eastleigh Borough Council is one such authority. This makes a lot of sense if you're not inclined to spend £30 on a device which you may only use in earnest for a few weeks.

Energy monitors with more features such as Alertme tend to be more useful if you're interested in monitoring your consumption in detail over a long period. The Alertme system costs £50 (with a desktop display), and there are no ongoing subscription fees.

What else do I need to be aware of?

Energy monitors aren't 100% accurate - they give a good estimation of your energy consumption, however as the power draw decreases they tend to become increasingly inaccurate and over-read. Therefore if, for example, you are trying to get your standby consumption down towards zero, you should take any readings with a pinch of salt.

Accuracy also varies somewhat between monitors - consumer magazine Which? rates 'Best Buy' models Current Cost EnviR and Owl CM160 as being particularly accurate amongst those it has tested.

If you have a solar PV installation or other grid-connected renewable energy generation then an energy monitor will give incorrect readings when these are generating as a result of the current being fed back into the grid, with a knock-on impact on any cumulative data the device records. In this case, regular meter readings are the only way of determining how much electricity you are drawing from the grid.

About Eastleigh Transition Network

Transition is a community-led response to pressures of climate change, fossil fuel depletion and increasingly, economic stagnation. Eastleigh Transition Network aims to support everyone living or working in the Borough of Eastleigh to plan for a 'transition' from our current total dependency on fossil fuels - to support our local economies and move towards a more viable and sustainable future. etnet.org.uk

About Expert Energy

Expert Energy are Romsey-based independent energy consultants providing energy-saving services to homes, businesses and other organisations. Services include energy surveys, thermal imaging and impartial advice on generating your own energy. expert-energy.co.uk