

Energy monitors

An energy monitor will accurately measure and display your home's real time electricity use, and sometimes gas as well. This can help you cut your bills ...

An energy monitor display will show the impact of turning a particular light or appliance on or off. It can tell you which things in your house use the most energy. And this can help you decide which energy-hungry appliances to use sparingly to cut your fuel costs.

If you have a smart meter, you will likely have been offered an energy monitor (also called an 'in-home display') by your energy supplier. The monitor will show you your electricity usage, and gas if you have it. Some suppliers encourage customers to use a phone app instead of providing an energy monitor, but data from the app is quite limited in comparison. Monitors should be plugged in somewhere visible, such as the kitchen or sitting room, so that you can keep an eye on them. If you can't have a smart meter – or don't want one – you can still buy a standalone energy monitor, but it will only monitor electricity.

Using an energy monitor

You can set your energy monitor to display your energy consumption in pounds (£) or kilowatt hours (kWh), depending on what works for you. To accurately know your usage in pounds you need to make sure the energy

Fitting a stand-alone energy monitor

An energy monitor costs around £30 to £40 and is easy to install yourself. It needs to be within about 10m of your meter to work. They come in two parts:

- 1) A sensor which clips onto the power cable of your electricity meter and measures the amount of electricity passing through it.
- 2) A visual display unit, which this factsheet covers.



(NB If your home has solar PV, be aware that not all monitor clamps can tell the difference between in-coming and outgoing energy flow. Look for a model with LED sensors.)



monitor is set to the correct price for your tariff. Your bill, online account or prepayment meter display will list your daily standing charge and price per kWh unit.

Energy monitors vary, but common features include:

- Viewing how much electricity and gas you are using at this moment, as well as how much you have used today or in the last week or month.
- Setting a daily electricity or gas usage target, giving you an energy 'budget' to aim for.
- If you have a smart pay-as-you-go meter, the display may show how much credit you have left.
- You may also be able to access your energy monitor display on your computer or smart phone, including viewing analysis charts.

Changing your habits

You may want to just use the monitor to predict your energy bills, but their main benefit is the greater control you gain from the information it provides, as you can assess your energy usage and work out ways to save money.

First off, see how much electricity your home uses 'at rest', that is, the amount used during the night or if everyone is out. This is often referred to as the 'base load'. Turn off everything that doesn't need to be on - all lights, TV, washing machine etc. If an appliance is on stand-by, switch it off at the wall socket.

Things that you can't turn off are your fridge freezer, medical equipment, certain home-entertainment set-top boxes and so on. The total usage will be displayed on the monitor – this is your base load.



By turning appliances and devices on one by one, you'll get a good idea of which use the most electricity. You will notice that some appliances use a lot but are on for a short amount of time (for example, a kettle), while others use less but are on for a long time (tumble driers, halogen lights etc). You can use this information to get an accurate idea of where the greatest savings can be made.

Cost of a cuppa...

To find out how much everyday appliances are costing you, here's an easy test:

- 1) Select the screen of your energy monitor which shows your total usage for today in terms of pounds and pence. Make a note of the figure.
- 2) Fill the kettle with enough water for one cup of tea, and boil.
- 3) Check your monitor again, and see how much the figure for what you've spent on electricity that day has gone up. This is what making a cup of tea has cost you.



Smart plugs

If you don't have an energy monitor, or would like to monitor some appliances in more detail, you could use a smart plug. Smart plugs often look similar to normal extension cables that are plugged into sockets at the wall, but they have the capability to control the appliances that are plugged into them remotely and monitor their energy consumption via an app on your smart phone.



For more information on smart plugs, see our **Smart plugs** factsheet: www.cse.org.uk/smart-plugs/

Monitoring your gas usage



If you have a smart gas meter you can use your energy monitor to assess how much things like your gas central heating or gas oven cost to run. However, it's a bit more complicated than with an electricity energy monitor because the display isn't updated in real time.

This is because the in-home display only gets updated every 30 minutes which means that sometimes the in-home display will show that you're using gas when you're not – it's still showing data from the last time it was updated.

If when you signed up for a gas smart meter you opted for half-hourly or daily meter readings, you can use your in-home display to work out how much it costs to run a gas appliance. To do this, take a note of your running total of gas, then again 24 hours later, and work out the difference. Ideally, you should only run one gas appliance at a time during that 24 hours to give an accurate result for that appliance.

Troubleshooting issues with in-home displays

- Sometimes issues can arise if the display unit is too far from your meters. Bring the display unit closer to the meter and turn it off and on again.
- Make sure that your in-home display is fully charged. It's best to keep it plugged in to avoid issues.
- Have you switched suppliers? If you have a SMETS1 smart meter type, sometimes this can stop your in home display from working. It is best to contact your supplier to see if this can be resolved.
- If no data is shown on your in home display, maybe there is an issue with your smart meter. Check with your supplier that they are receiving meter readings. If they are not, they'll need to fix this. This may require them to send out an engineer.



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Our Home Energy Team offers free advice on domestic energy use to people in central southern and southwest England.

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See all our energy advice pages at www.cse.org.uk/advice