energy envoys

Energy Tutorial: Energy Usage

Activity: energy myths

Provided by

NATIONAL ENERGY FOUNDATION

DofE APPROVED ACTIVITY PROVIDER

Sponsored by

Lancaster University

ENERGY MYTHS

Here are 10 popular tips to save energy – or perhaps they're urban energy myths and misleading advice that could end up costing the earth! How good is your knowledge?

Take a look at each of the energy saving tips below and decide whether each one is true or a myth before reading the correct answers on the next page. How many can you get right?

True or myth?

1. **Use less power - take a shower!**
2. **Leaving your computer screen switched on during the lunch break prolongs its life and doesn't waste much energy.**
3. **Big freezers cost more to run than little freezers.**
4. **With global warming we won't need as much insulation in the future.**
5. **If you have thermostatic radiator valves you don't need a room thermostat.**
6. **Strapping an energy manager gizmo to your boiler can save you at least 10% from your heating bills.**
7. **It's best to leave your immersion heater on 24 hours a day.**
8. **It's cheaper to use an immersion heater in the summer than to heat water from your central heating boiler.**
9. **Replacing windows with double glazing will stop mould growth.**
10. **Fluorescent lights use less energy if left switched on.**

Answers

1. **Use less power - take a shower! Sometimes a MYTH, but sometimes TRUE**

   The easiest way to test this is to put the plug in the bath next time you have a shower, and see how much it fills up. If, at the end of the shower, there is less water than you would usually have in a bath, then you will probably save money by taking a shower. But it's not quite that simple as it depends on whether you're using the same source to heat water for the bath and the shower. This will be the case if you use your central heating boiler or an immersion heater. But a 'power shower' uses electricity to provide a powerful and instant shower. It also uses water more quickly than a shower fed from a hot water system, and it uses on-peak electricity, rather than gas. How much power you use also depends on the efficiency of your heating boiler, the amount of insulation on the hot water tank and the losses on the pipework between the tank and your shower.

2. **Leaving your computer screen switched on during the lunch break prolongs its life and doesn't waste much energy. MYTH (mainly)**

   In theory, leaving the screen on over lunch might prolong the life but, in practice, most computers will either wear out or need to be replaced for other reasons before the screen fails. Many computers go into sleep mode if they are not being used but screens don't use less energy when they're in screensaver mode and, even when they power down into sleep mode, they still use some energy. Computer screen consumption can often represent at least a third of the electricity consumption in a modern office. Most of the wasted energy is given off as heat, and in an air-conditioned office half as much energy again can be used in getting rid of this waste heat in summer.

3. **Big freezers cost more to run than little freezers. Usually TRUE but not always**

   In one sense this is obviously going to be true. But, in practice, it often isn't! Small freezers are often upright models, which lose a significant amount of cold air whenever the door is opened. It can take as much as 30 minutes for a freezer to regain its temperature after the door has been opened for a minute. Chest freezers, with a lid opening (and typically thicker insulation levels) will often use less than half as much energy for a given volume of food storage. If you have empty space in either type of freezer, it's best to fill it (even with empty cardboard boxes - breakfast cereal packets are ideal) to stop air flow.

4. **With global warming we won't need as much insulation in the future. MYTH**

Global climate change will not provide a nice even increase in temperature. It's likely to be accompanied by greater instability in weather, so homes will need just as much insulation to deal with cold spells. The most likely effect in the UK is to shorten the heating season slightly, not to reduce the need for heating altogether. Global warming will not happen overnight. It's expected to take around 50 years for the temperature to rise by another 2°C.

5. **If you have thermostatic radiator valves you don't need a room thermostat. MYTH**

Thermostatic radiator valves (TRVs) will only switch the flow to a single radiator on or off. They do not stop the boiler from firing (and so using energy). They are useful, but tend to be a rather crude control of temperature in a room, as they are affected by where they're sited and are often not set at the right temperature. In contrast, a room thermostat is accurate to within a degree or so. What's more, if it has been wired up correctly (in what may be called an "interlock") it should send a signal back to the boiler to switch itself off if there is no demand for heating for either the heating or hot water circuits. This stops the boiler firing when the internal water temperature has slipped – i.e. it stops so-called "dry cycling", and definitely saves energy.

6. **Strapping an energy manager gizmo to your boiler can save you at least 10% from your heating bills. MYTH**

But you could make the same savings by switching your boiler off for 10% of the time, and the same effect can often be achieved by turning down the thermostat by 1°C. More comprehensive energy manager gadgets fitted by the boiler manufacturer will save money, but need to be matched to the overall controls, including an intelligent thermostat which may duplicate some of their functions. Modern boilers with good controls should not need an additional strap-on energy manager.

7. **It's best to leave your immersion heater on 24 hours a day. MYTH**

It's always best to place the water heating on a timer, as the energy lost from a hot water tank depends on the temperature difference between the surface of the tank and its surroundings. It's a common myth that it somehow takes more energy to keep heating up a tank than to maintain it at a high temperature. Of course, as with all urban myths, there are a few "ifs" and "buts". If the tank is highly insulated (so standing losses are very low) and there is an effective thermostat on the tank, then the losses through leaving it on can be much reduced. But, in general, it's much better to install a timer - a heavy duty one, suitable for immersion heaters, should be

quite cheap and it could pay for itself in a few months: an excellent energy efficiency investment.

8. **It's cheaper to use an immersion heater in the summer than to heat water from your central heating boiler. Sometimes a MYTH, but sometimes TRUE**

The answer to this one depends very much on how efficient your boiler is, especially when it is operating at part load, as it does in summer when there is no central heating demand. Broadly, if you have a modern high efficiency boiler (say rated 'D' or better on the SEDBUK scale) linked to a hot water tank thermostat, then it will be better to use the boiler to heat water, year round. But, providing you have a timer and well-insulated tank, it may be cheaper to use the electric immersion heater in summer if your boiler is not a high efficiency model.

9. **Replacing windows with double glazing will stop mould growth. Usually TRUE but sometimes causes problems**

Double-glazed windows can help stop mould, providing they are adequately ventilated, and can maintain a reasonable room temperature. Ventilation is the key; if a home is too airtight, moisture (from baths, showers, cooking and even breathing) will stay inside the house and create a damp atmosphere in which mould can grow. For this reason, good double-glazed units include trickle vents that are used to add controlled ventilation. Be careful about selecting double-glazed units that have metal (aluminium) frames. If they don't have a very good thermal break, you're likely to get some condensation on the metal, even though there will be none on the glass itself.

10. **Fluorescent lights use less energy if left switched on. MYTH**

This one has been around almost since fluorescent (strip) lights first appeared. It is certainly true that in their start-up phase, they use a lot more energy than when they are running continuously, so it is not good advice to keep switching them on or off. Although it depends on the individual light, if you're going out of a room for more than about a minute and a half (and certainly) more than 5 minutes, you should turn the light off.