



# Health & Well Being

## Home Energy & Cost Saving Tips to Reduce Carbon Emissions

### Introduction

In this day and age, the influx of technology within the home and workplace means a higher power usage which is costing more and more. Even if your electrical devices are on standby they are still drawing power and costing you money. Each device may only cost a small amount over the year but as the average household gets filled more and more with the latest electronic gizmos the running costs of each device can mount up.

### Electricity usage while sleeping

Standby power refers to the electrical energy that is used by devices even when they appear to be turned off. Standby power allows electronics to turn on quickly, but means that they are constantly drawing some power from the grid. Many of today's appliances and devices use standby power. Some common examples include television sets, computers, computer peripherals, cordless telephones and uninterruptible power supplies.

### TIPS

- **Save £50 - £90/year** by not leaving appliances on standby and turning off devices at wall socket when not in use.
- When buying an appliance it pays to buy an energy efficient one that carries the Energy Saving Trust Recommendation logos.
  - [How much electricity do my other appliances use?](#)
- Cooling and heating: 47% of energy use in the home.
- The second largest users of energy use are clocks and other appliances (i.e. radio and burglar alarm, TV, video, DVD, router, cooker, central heating controller). Use the Energy Use Calculator to find out how much it costs/day to use items that use electricity,
  - [Energy Use Calculator](#)
  - Mobile phones use **approximately 2 to 6 watts** when charging, while a charger left plugged in without a phone will consume 0.1 to 0.5 of a watt. Keeping a top-of-the-range mobile phone charged for a year can cost as much as 67 pence.
- When possible machine wash clothes at 30 °C
  - Energy and money are saved by choosing [low temperature washes](#).

- Washing on the highest temperature setting is costing you more in energy.
- Dry clothes outside when possible.
- Tumble dryers are inherently inefficient. If the UK shunned the tumble dryer, we'd save £88 million in electricity bills every year.
- It takes 0.2 units of electricity to boil the kettle. Only boil as many cups of water as you're actually going to use. Invest in an [eco kettle](#) that lets you choose how many cups to boil each time.

### In the kitchen

- **TURN OFF MICRO WAVE** when not in use, as the 4 watt LED clock if left on 24/7 will cost approximately £5-8 year.
  - If LED is left on it uses 4 watts. It doesn't switch itself off when you are on holiday.
- Fridges & freezers can account for up to 11% of a household energy bill as they are operating 24 hours/day all year long. It's important to look at ways of minimizing this energy cost.
  - Inefficient fridges can cost over £1 a day to run.
    - Set your fridge at 0-4 °C
- Manage air infiltration and condensation – allowing for air exchanges.
- Open windows when air drying and cooking.
- Use an extractor system in your kitchen.
- Cover pots and pans with lids as it keeps the heat in.

### Insulation

- Consider using a low carbon insulation material which is low in embodied energy.
- Install insulation under floor, in walls and loft.
  - **Save £200-£400/year** by installing [solid wall insulation](#) [ref: [WHICH](#)].
  - **Save up to £180/year** by insulating your loft.
  - **Save £130-£160/year** and 1 tonne of CO<sub>2</sub> by installing cavity wall insulation.
- Check thickness of insulation and upgrade to [2022 building regulations](#).
  - The current regulations under the EEC programme states that a minimum 270 mm of loft insulation is required.
- To maintain your health and a healthy breathing home your home needs to breathe to improve home air quality i.e. the need for air exchanges and ventilation. (Note: *energy specialists use 'breathability' to mean water vapour permeability, not to refer to air movement*)
- If you are renting check with your landlord in how building is insulated.
- Check if you are eligible for assistance to help pay for costs of loft and cavity wall insulation <http://www.energysavingtrust.org.uk/or call 03001231234>.

### Water use In the bathroom

- Take showers rather than baths.
  - Take a 3 minute shower. Shower uses 11.4 litres/minute only if you have a shower with a flow rate of 11.4l/m. Aerated showers can provide a good shower at far lower flow rates. See <http://www.ech2o.co.uk/shower-blog>
  - Power showers use as much as a bath. A full bath can use up to 80 litres of water.
  - Consider reducing number of showers a week, as showering drains a lot of natural oils out of our skins.
- [Recycle rain water](#) for [watering plants](#) and flushing toilets

### Windows

- Install [trickle vents above windows](#) to allow supply air which, in combination with extract air, can get rid of water vapour before it can condense.
- Close curtains and shutters at dusk. Invest in [thermal curtains](#).
- **Save £30/year** by installing draught-proofing to doors and windows and sealing skirting boards.
- Replace single glazed windows with double or triple glazed windows
- If you cannot install double glazing consider to add secondary glazing Add secondary glazing. <https://www.glazeandsave.co.uk/>.
  - [Magnetic secondary glazing](#) is a game changer!

**Heating:** Home heating accounts for about 17% of UK emissions.

- Drying clothes on radiators, airier or a Victorian lath clothes dryers without ventilation makes you feel cold in your home.
  - Drying clothes on your radiators is **going to create more moisture in the air inside your home**. This condensation can settle on walls, furniture and other surfaces and turn into mould.
  - Using your radiators to dry clothes will make your boiler work harder, adding to the overall running costs of the system.
  - Use a dehumidifier. The [running costs](#) of a dehumidifier varies depending on its power rating and your energy tariff.
    - An example dehumidifier that can extract up to 20 litres a day, with a wattage of 480 w would use 0.48 kWh, meaning that an hour's usage would cost **9.6 p**.

### Take control of your heating

- An energy-efficient condensing boiler is 10% more efficient than a conventional condensing boiler.
- An [ultra eco boiler](#) is a whole different paradigm of boiler efficiency. It is able to monitor the outside temperature and adjust accordingly.
  - Responsible for around half the CO<sub>2</sub> emissions of conventional boilers. These boilers account for around half the CO<sub>2</sub> emissions of comparable boilers.
- Install thermostatic radiator valves to allow you to select different temperatures in different rooms, or use a programmable thermostatic radiator valves to create zoning in your central heating – so you can control the temperature of different parts of your house separately. For example, have the heating set lower in the kitchen than in a bedroom, or have the heating set to come on at different times in different areas.

- Keep doors closed between heated and unheated rooms/areas.
- Turn the thermostat down by 1 °C and up to 10%/year of your fuel bill and save around 300 kg of CO<sub>2</sub> over a year.
- Install [Air Source Heat Pumps](#) before [ground source heat pump](#). However, fewer people will be able to install a ground source heat pump because many do not have enough garden space to install a large ground-loop.
- Set the temperature of the water storage cylinder at **60 °C**
- Remove furniture and curtains from in front of radiators to allow heat to circulate. Place foil behind if the radiator is on an external wall.
- [Bleed radiators](#). Radiators need bleeding when they have air trapped inside them. This trapped air stops warm water circulating around your radiator. That can make the radiator cold at the top, but warm at the bottom.
- It means your central heating system isn't working efficiently and it can take longer to warm up your room. It can also cost you money, as your bills will be higher.

- **Air Source Heat Pumps are performing better now.**

- Heat Pumps should only ever be fitted once the house has been fully insulated. Technically this not true. An ASHP will peak at about 16kW on single phase electricity. If the heat load of the home at a Delta T (the difference of temperatures between two measuring points) of, say, 25 °C is less than 16kW you can heat it with a HP.

**Calculate workplace and home carbon footprints** – Establish a life cycle/embodied energy costs for all building materials used in refurbishment and new build.

- **Create action strategies** to reduce primary & secondary footprint.
- The primary footprint is the sum of direct emissions of greenhouse gases from the burning of fossil fuels for energy consumption and transportation.
- The secondary footprint is the sum of indirect emissions of greenhouse gases during the life cycle of products used by an individual or organisation.
- Consider energy implications of work shifts

**Install Solar PV (installation) to generate your own renewable electricity**

- Benefits: cut your electricity bills, reduce your carbon footprint and receive payments for extra energy you generate.
  - Earn money through the [Smart Export Guarantee \(SEG\)](#). Typical payment per kWh: **Octopus Energy: 7.5p/kWh; Avro Energy: 3p/kWh; Bulb** (for its own customers): 5.57p/kWh

**What help is available to energy customers?**

- [Warm homes discount scheme](#) currently offers a £140.00 discount to those on certain benefits during the winter.
- [Cold weather payments](#)
- [One-off grants](#) to help people pay for extra heating when it is very cold.

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