

**energy  
saving  
trust**

# infact

**Savings and statistics bulletin  
October 2023**

**[energysavingtrust.org.uk](https://energysavingtrust.org.uk)**





# Contents

- 03**   **Conditions of use**
- 04**   **General facts and figures**
- 07**   **Insulation**
- 09**   **Heating your home**
- 11**   **Keeping cool**
- 12**   **Energy efficient behaviour**
- 13**   **Home appliances**
- 15**   **Lighting**
- 16**   **Water**
- 17**   **Solar power**

# Conditions of use

This document is designed for use by clients of Energy Saving Trust's Infact Savings and Statistics Bulletin.

Savings and statistics within this document can be quoted on any public facing communications such as websites, leaflets, social media, or within internal training and reference documents, provided:

- Energy Saving Trust is referenced as the source.
- The figures are not used to insinuate any endorsement of a particular product.
- The appropriate caveats are used to accompany the statement.

This document is for use by the client company only. It is not to be circulated externally either to customers, third party contractors or partners.

## Caveats

Based on a typical three-bedroom semi-detached gas heated house, with an 88% efficient gas boiler and average gas tariff of 6.9p/kWh and electricity tariff of 27.4p/kWh.

Emission savings include all scopes and greenhouse gases expressed as carbon dioxide equivalent.

Correct as of October 2023.



# General facts and figures

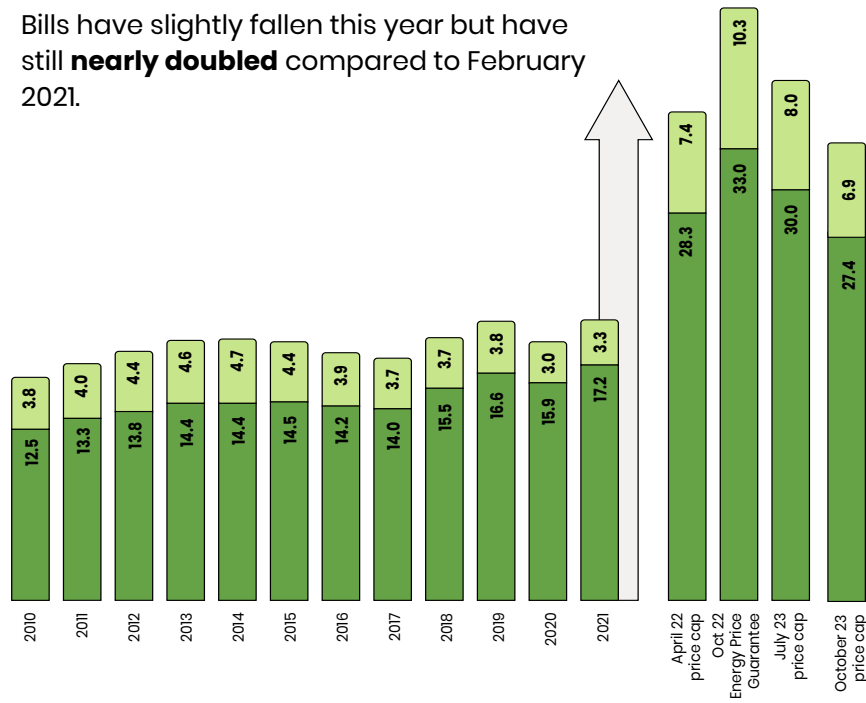
## Energy bills

Most households in Great Britain currently have their gas and electricity tariffs set by Ofgem's energy price cap. For typical usage, this equates to an average bill of around £1,834 a year. That's £933 for electricity and £901 for gas.<sup>1</sup>

Historic average p/kWh annual electricity and gas prices

■ Gas ■ Electricity

Bills have slightly fallen this year but have still **nearly doubled** compared to February 2021.



## Energy consumption

Although space heating and hot water heating account for about 80% of the energy consumed in an average household, it only makes up 54% of the average household energy bill. This is because electricity is over three times more expensive than gas per unit.

Average household energy split<sup>2</sup>



<sup>1</sup> Ofgem energy price cap, October 2023  
<sup>2</sup> Typical usage as defined by Ofgem's Typical Domestic Consumption Values, 2023.



## Towards Net Zero: A snapshot of the UK's progress to net zero and assessment of its housing stock

Emissions from residences account for approximately 23% of the UK's greenhouse gas emissions.<sup>3</sup> The main source of emissions is from heating and hot water, but this also includes cooking and electricity use in our homes.

To meet the UK's net zero by 2050 target, the government aims to achieve a significant reduction in the emissions of our homes. That means building low carbon homes, improving the energy efficiency of existing homes, and replacing fossil fuel heating with low and zero carbon alternatives. This needs to be done in a way that is affordable for all.

What progress have we made?

### Energy efficiency activity

- At the end of 2022, 17 million homes in Great Britain (67% of total homes with lofts) have at least 125mm of loft insulation.
- It's estimated that 9 million homes have at least 200mm loft insulation.
- Of the remaining 7.9 million under-insulated lofts, around 30% may be difficult or very costly to insulate, including flat roofs, and lofts with poor accessibility. The other 70% could easily be insulated with standard loft insulation.
- There are 14.8 million homes with cavity wall insulation in Great Britain. Of the 5.1 million homes without cavity wall insulation, 3.8 million are easy to treat standard cavities and 1.3 million are hard to treat.
- There are around 805,000 insulated solid wall homes, that's around 9% of homes with solid walls. It may not be possible or appropriate to insulate every solid wall property, however, between December 2021 and December 2022, there was a 1.4% increase in homes with solid wall insulation, all of which are assumed to be through retrofit.<sup>4</sup>

### Low and zero carbon heat and power

- 55,000 heat pumps were installed in 2021 across the UK.<sup>5</sup>
- The UK Government aims to increase the number of heat pump installations from 55,000 to 600,000 installs per year by 2028.<sup>6</sup>
- 136,000 MCS-certified solar panel systems were installed across the UK in 2022. Over 1.3 million MCS-certified solar PV installations have happened since 2009.
- Areas with the most solar PV installations include South Hampshire and South Cambridgeshire. Stirling tops the league with almost 16% of households with solar panels.<sup>7</sup>

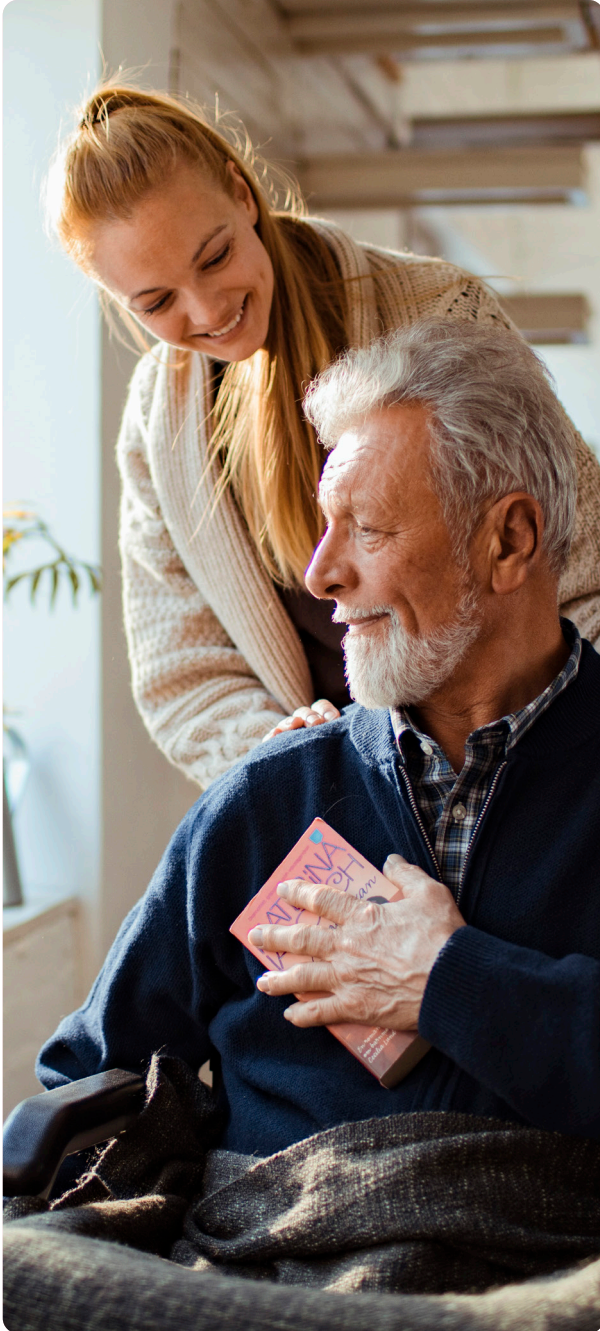
<sup>3</sup> Department for Energy Security and Net Zero, Energy Security Bill Factsheet updated 6 June 2023

<sup>4</sup> HM Government, The Ten Point Plan for a Green Industrial Revolution November 2020

<sup>5</sup> Microgeneration Certification Scheme MCS Data Dashboard, accessed June 2023

<sup>6</sup> Department for Energy Security and Net Zero, Annual fuel poverty statistics report: 28 February 2023

<sup>7</sup> Scottish Government, Scottish house condition survey: 2019 key findings



## Fuel poverty

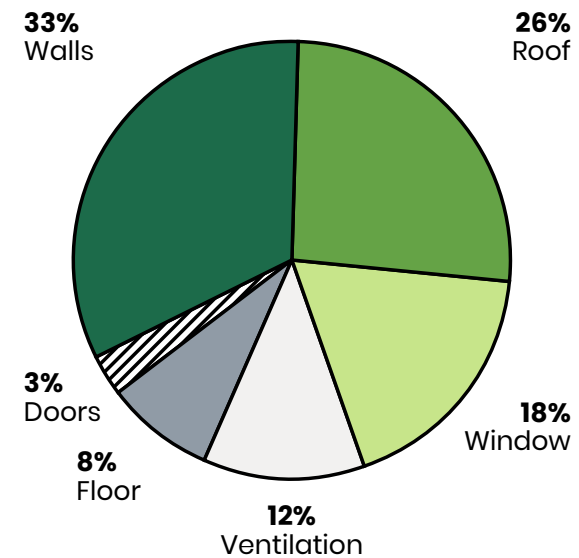
Each nation in the UK uses a different mechanism to report on fuel poverty, so it's not possible to directly compare.

- In 2022, there were an estimated 13.4% of households (3.26 million) in fuel poverty in England, up from 13.1% in 2021 (3.16 million).<sup>8</sup>
- In 2019, an estimated 24.6% (around 613,000 households) of all households in Scotland were in fuel poverty.<sup>9</sup> In the cost of living act, the Scottish Government reported that there may be 35% of households in fuel poverty in October 2022.<sup>10</sup>
- According to Welsh Government's 2022 estimate, up to 45% (614,000) of all households in Wales were in fuel poverty.<sup>11</sup>
- In Northern Ireland, fuel poverty was last measured by the 2016 House Condition Survey and sets the rate at 22%.

## Heat loss

This pie chart shows where heat is lost in a typical uninsulated home. Insulation does not stop heat loss completely; it reduces the rate at which heat is lost.

Typical heat loss rates for an uninsulated three-bedroom gas heated semi-detached home.



<sup>8</sup> Department for Energy Security and Net Zero, Annual fuel poverty statistics report: 28 February 2023

<sup>9</sup> Scottish Government, Scottish house condition survey: 2019 key findings

<sup>10</sup> Cost of Living (Tenant Protection) (Scotland) Act 2022: first report to the Scottish Parliament

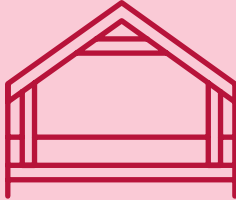
<sup>11</sup> Welsh Government, Written Statement: Fuel Poverty 13 April 2022

# Insulation

## Roof and loft

The recommended minimum depth of insulation for mineral wool is 270mm. Many homes have some loft insulation but may not have the recommended minimum depth.

- Topping up your loft insulation from 120mm to 270mm could save around £25 and 55kg of carbon dioxide a year.
- If a home has no loft insulation, installing 270mm of new insulation could save £250 and 620kg of carbon dioxide a year.



## 620kg

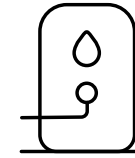
**If your home doesn't have any loft insulation, getting 270mm depth installed could save around £250 and 620kg of carbon dioxide a year.**

- Topping up your loft insulation from 120mm to 270mm and installing cavity wall insulation could save you up to £280 and 690kg of carbon dioxide a year.
- Insulating your room in roof could save you £230 and 570kg of carbon dioxide a year.<sup>12</sup>



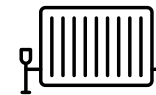
## Walls

- There are 14.8 million homes with cavity wall insulation (71% of homes with cavity walls), and 6.1 million homes with uninsulated cavity walls.
- Cavity wall insulation could save up to £265 and 650 kg of carbon dioxide a year.
- Only 9% of the 8.5 million homes with solid walls have had solid wall insulation.<sup>13</sup>
- External or internal solid wall insulation can save around £360 and 880kg of carbon dioxide a year.



## Hot water cylinders

- Modern hot water cylinders have an energy rating label, scoring the efficiency on a scale from A to F.
- Most UK hot water cylinders have some insulation, however those with a hot water tank jacket less than 25mm could benefit from top up insulation.
- Insulating an uninsulated hot water cylinder with an 80mm jacket could save around £200 and 690kg of carbon dioxide a year.
- Topping up your hot water cylinder insulation from a 25mm to an 80mm jacket could save around £45 and 155kg of carbon dioxide a year.



## Radiator panels

Installing reflective radiator panels in a house with uninsulated solid walls could save around £25 and 80kg of carbon dioxide every year.<sup>14</sup>

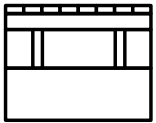
<sup>12</sup> Based on existing uninsulated room-in-roof with a dormer window, using rigid insulation boards between the rafters and around the dormer window walls and roof section. The dormer window remains unchanged.

<sup>13</sup> Department for Energy Security and Net Zero, Household Energy Efficiency Statistics, detailed report 2022

<sup>14</sup> Based on installation behind radiators on uninsulated external walls. Only recommended for uninsulated solid walled or uninsulated cavity walled properties.

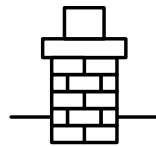
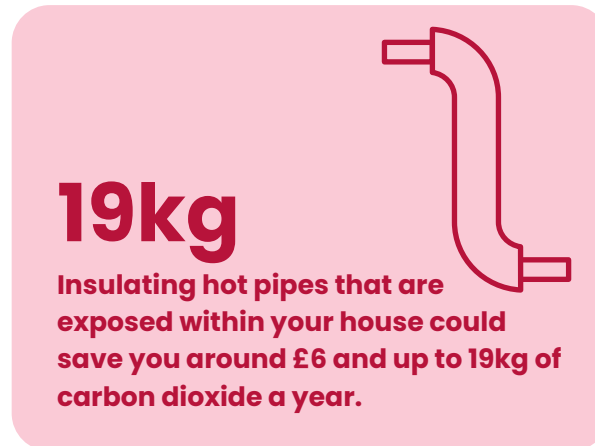
## Pipework

- Insulating exposed hot water pipes can reduce the time it takes for your taps to run hot. It can also help to reduce your energy use.
- DIY insulating foam pipe jackets can be bought and cut to size to fit most pipes around your home for around £1.75 per metre.
- Insulating exposed hot water pipes in your house could save you around £6 and 19kg of carbon dioxide a year.



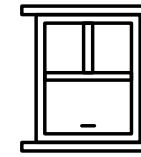
## Floor

- Most UK homes could benefit from an insulated floor.
- Around 8% of heat is lost through the floor in an uninsulated home. This figure is likely to be larger if other areas of your home are insulated, like your loft or walls.
- Solid floor or suspended floor insulation could save around £75 and 185kg of carbon dioxide a year.



## Draught proofing: chimney, doors and windows

- If a fireplace is not used then it can cause a lot of draughts, capping or draught-proofing your chimney will reduce heat loss.
- A chimney draught excluder can save around £65 and 155kg of carbon dioxide a year and can be removed whenever you want to use the fireplace.
- Draught-proofing windows and doors can save around £45 and 105kg of carbon dioxide a year.



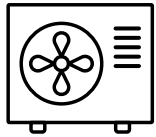
## Windows

- Replacing single-glazed windows with double or triple glazing can save you money on your energy bills. Windows are rated on their energy efficiency.
- Installing A++ rated double glazing in an entirely single-glazed home could save around £170 and 410kg of carbon dioxide a year.
- Installing A rated double glazing in an entirely single-glazed home could save around £155 and from around 375kg of carbon dioxide a year.
- Professional secondary glazing involves fitting a pane of glass to the inside framing of the window. It's useful for homes that can't replace windows due to planning constraints.
- Installing secondary glazing in an entirely single-glazed home could save around £120 and 300kg of carbon dioxide a year.



# Heating your home

Heating our homes and domestic water accounted for about 19% of the UK's total greenhouse gas emissions in 2021.<sup>15</sup> To meet our net zero commitment, we'll need to replace fossil fuel-based heating systems, like gas or oil boilers, with low and zero carbon alternatives.



## Heat pumps

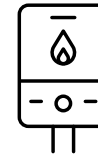
Heat pumps have been identified as a key technology on the path to net zero. The most common type installed in the UK is an air source heat pump, which moves renewable heat from the outside air to provide low carbon heating and hot water indoors.

- 55,000 heat pumps were installed in 2021 across the UK.<sup>16</sup> The UK Government aims to increase the number of heat pump installations from 55,000 to 600,000 installs per year by 2028.<sup>17</sup>
- It could cost around £1,540 a year to run a typical heat pump and save nearly 2 tonnes of carbon each year. It may cost the same home £1,510 if heated with a gas boiler.

**How much you save by installing a heat pump depends on the type of heating system you're replacing and how efficient it is, as well as the efficiency you achieve with your heat pump.**

- Replacing a typical gas boiler could save you £75 a year on your heating bills if you get a good standard of efficiency with your heat pump, but could cost you £125 more per year if you don't.
- Replacing a typical oil boiler could save you £240 a year on your heating bills if you get a good standard of efficiency with your heat pump, or save you £40 per year if you don't.

Actual running costs and savings will differ based on factors specific to your home. Factors impacting the efficiency of your heat pump include the radiators in your home, and heating controls.



## Gas, oil and LPG (Liquefied Petroleum Gas) boilers

The most common heating system in the UK is a boiler. Over 85% of UK homes are heated with a gas boiler.<sup>18</sup> A gas boiler burns natural gas to heat water, which is then circulated to radiators. Oil and LPG boilers are similar, instead burning oil or LPG. These systems are a major source of carbon emissions contributing to climate change.

Boilers are graded on a scale of A to G depending on their efficiency. Replacing a D rated boiler with an A rated boiler could save £140 and 425kg carbon each year.

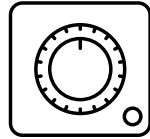
<sup>15</sup> National Atmospheric Emissions Inventory Greenhouse Gas Inventories for England, Scotland, Wales & Northern Ireland: 1990–2021 20 June 2023

<sup>16</sup> Department for Energy Security and Net Zero, Energy Security Bill Factsheet updated 6 June 2023

<sup>17</sup> HM Government, The Ten Point Plan for a Green Industrial Revolution November 2020

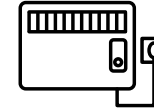
<sup>18</sup> Department for Levelling Up, Housing and Communities, English Housing Survey 2021 to 2022: energy 7 July 2022





### Boilers and controls

- Room thermostats allow you to set and maintain the temperature at home. A programmer sets the heating to turn on and off at certain times of the day to suit when you're home, and when you're out or asleep.
- Thermostatic radiator valves (TRVs) let you control the temperature of each radiator, so you can have the room you're in warmer than the rooms you're not using.
- Replacing an old D rated boiler with some controls with an A rated boiler with a full set of heating controls could save around £200 and 590kg of carbon dioxide a year.<sup>19</sup>
- Installing and using a full set of heating controls could save around £120 and 310kg of carbon dioxide a year.<sup>20</sup>



### Storage heaters

Over 10% of UK homes are heated with storage heaters.<sup>21</sup> A storage heater is an electric heating appliance that stores heat during off-peak hours, typically at night, and releases it the next day. They're particularly common in homes without access to gas supply.

- There are two main types of storage heaters, older heaters with input and output controls, and modern heaters that allow you to set the time and temperature.
- Upgrading old electric storage heaters to new high heat retention storage heaters could save up to £640 and 800kg of carbon dioxide a year.

<sup>19</sup> Based on an efficiency improvement from 78% to 89% for a gas boiler, assumes original boiler has a programmer and room thermostat, and replacement boiler has a programmer, room thermostat and TRVs.

<sup>20</sup> A full set of heating controls includes a programmer, thermostatic radiator valves and a room thermostat. This saving assumes the heating system previously had no controls and after installation all new controls are fully used and correctly set.

<sup>21</sup> Department for Levelling Up, Housing and Communities, English Housing Survey 2021 to 2022: energy 7 July 2022



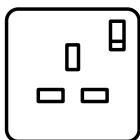


# Energy efficient behaviour



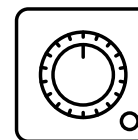
## Smart meters and energy monitors

- A smart meter's in home display can help to identify how much energy is used at different times of the day. This can help households identify energy that is wasted.
- By end of 2021, almost 22 million domestic smart meters for gas and electricity are operating in Great Britain.<sup>23</sup>



## Switch it off

- Avoiding standby and turning appliances off when you're not using them could save up to £55 and 45kg of carbon dioxide ever year.<sup>24</sup>
- Turning off your lights when you don't need them could save you around £20 on your annual energy bills and avoid 18kg of carbon dioxide emissions a year.



## Thermostat

- A room thermostat switches a home's heating system on and off according to the set temperature. A common misconception is that turning the thermostat up will heat up a home quicker, but this will only heat the home to a higher temperature at the same rate.
- Insulation increases the speed a home heats up as less heat is being lost through the building.
- Turning your thermostat from 22°C to 21°C could save you £100 and 305kg of carbon dioxide every year.<sup>25</sup>

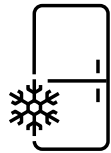
<sup>23</sup> Department for Business, Energy & Industrial Strategy, Smart meters in Great Britain, quarterly update December 2021: statistical bulletin

<sup>24</sup> This saving includes all appliances, consumer electronics, lights and chargers that have been left on standby mode or have been left on and not in use.

<sup>25</sup> Based on turning down a room thermostat from 22 degrees to 21 degrees in the main living areas.



# Home appliances



## Fridges and freezers

Cold appliances are rated for their energy efficiency on a scale from A to G. Why not buy the highest rating you can find to lower energy bills and carbon dioxide emissions? Choosing an A rated fridge freezer over an F model could save you £580 and 610kg of carbon dioxide over the 17 year lifetime of the product.



## Cooking

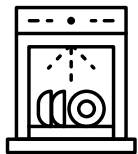
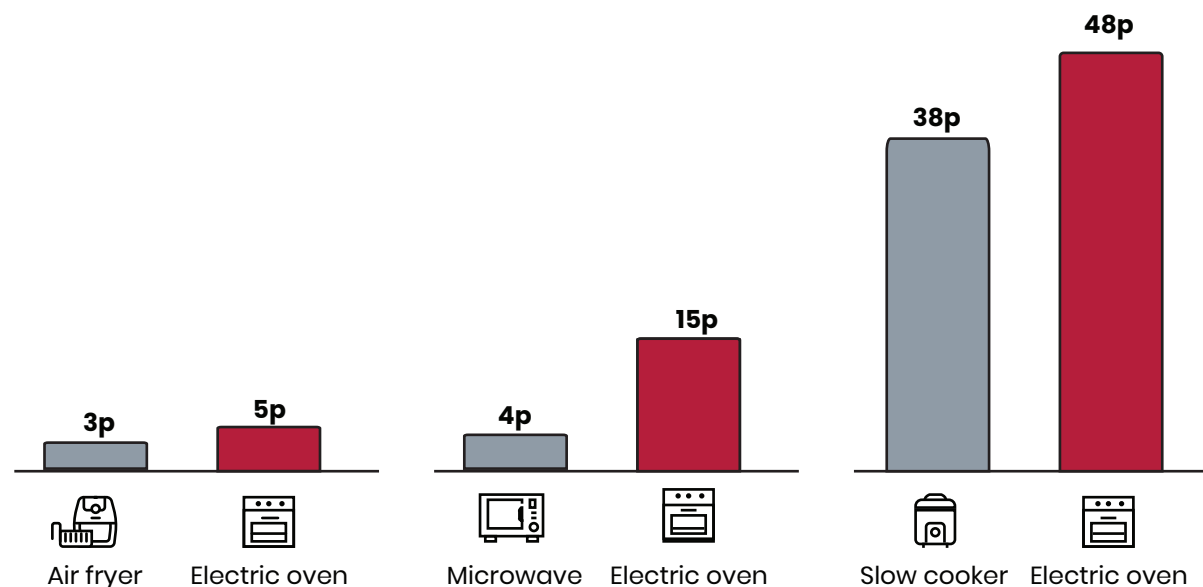
- About 3% of the typical home's energy consumption and carbon emissions come from cooking. To help you save costs, consider the right appliance for your meal.
- Only filling the kettle up with as much water as you need could save around £11 in energy bills and 9kg carbon dioxide emissions a year.

Recipe examples and electricity cost

150g chips portion

400g ready-made lasagne

3.6kg home-made beef stew

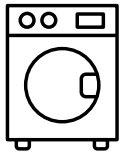


## Washing up

- Dishwasher energy labels rate from A to G. Why not buy the highest rating you can find to lower energy bills and carbon dioxide emissions? Choosing an A rated dishwasher over a E rated one could save you around £240 over its 11 year lifetime.
- Handwashing? Using a bowl to wash up rather than a running tap can save you money on your energy and water bills if you have a water meter. You only need to run a typical tap for 95 seconds before you would have filled a washing up bowl.<sup>26</sup>

<sup>26</sup> Based on filling a 10 litre washing up bowl compared with a 12.65 litre/min kitchen tap at 50% of its full flow.





## Laundry

- Washing machine energy labels rate from A to G. Why not buy the highest rating you can find to lower energy bills and carbon dioxide emissions?
- Tumble dryers are rated between A+++ and G.
- When buying a new washing machine, choosing an A rated washing machine over a D rated one could save around £105 over its 11 year lifetime.
- Always try to fill your washing machine - combining less than full loads so that you can cut back washing machine use by just 1 cycle per week could save you £14 a year in energy bills, and a further £6 a year on metered water bills, as well as 11kg carbon dioxide emissions.
- Wash on eco or 30°C or cooler cycles when you can. Washing at 30°C rather than higher temperatures could save £13 and 11kg carbon dioxide a year.<sup>27</sup>
- Consider a heat pump tumble dryer over a condenser tumble dryer. By choosing an A+++ rated dryer over a B rated one, you could save £790 and 820kg carbon dioxide over its 13 year lifetime.



## Home computing

- Choosing a laptop over a desktop and reducing standby could save up to £35 and 30kg of carbon dioxide every year.
- Remember to switch off your computer, including monitors, printers, or other equipment once you're finished using them.



## TVs

- In general, smaller TVs use less energy. Choosing a 55" TV over a 65" TV could save £20 in running costs a year, as well as 18kg carbon dioxide.
- Choosing an E rated over G rated save £305 over TV's lifetime.<sup>28</sup>

<sup>27</sup> Based on the average energy use at different temperatures from lab testing of 55 washing machine models. Energy use was monitored on an empty load.

<sup>28</sup> Assumes that the energy efficiency index (EEI) is 1.41 for G rated TV, and 0.68 for E rated TV, and that the TV is left on for 5.5 hours a day and standby for 2.1 hours a day. Lifetime of 11 years.



# Lighting



## Bulbs

- In a typical home, only 53% of light bulbs are energy saving. 46% are halogens and 2% are traditional incandescent light bulbs.
- LEDs (Light Emitting Diodes) are the most energy efficient bulbs you can buy, followed by CFLs (compact fluorescent lighting). Around 35% of bulbs in the typical home are LEDs, and 18% are CFLs.
- The UK Government has banned the sale of halogen light bulbs since September 2021.
- LEDs last 5 times longer than halogen light bulbs and produce the same amount of light – but use up to 80% less power.
- A household still using an old fashioned 60W incandescent bulb in a light fixture could save £6 a year by replacing it with an LED equivalent.
- Replacing a 50W halogen bulb with an LED will save around £90 over the bulb's lifetime, and that doesn't include the saving from reduced bulb replacement.
- In a typical home replacing all your light bulbs with LEDs will cut your lighting bill by around 50%, saving £60 a year and reducing carbon emissions by 50kg a year.

**50%**



**Replacing all your light bulbs with LEDs could save around £60 a year on lighting bills.**

# Water

Approximately 60% of households in England and Wales have a water meter. Very few homes in Scotland and Northern Ireland have water meters.<sup>29</sup> The average household water and sewerage bill in Great Britain is around £420 per year. In England and Wales around £200 is the charge for water supplied and around £220 is the charge for sewerage.


## Showers and baths

A typical household could save around £30 off their yearly gas bills and £30 off their metered water and sewerage bills by replacing their inefficient shower head with a water efficient one. That's a total saving of £60 each year.<sup>30</sup>

Spending one minute less every shower could save £18 off your energy bills each year, in a typical household. With a water meter this could save a further £19 off yearly water and sewerage bills.<sup>31</sup>

If everybody in a typical household stuck to a 4 minute shower it could save around £65 on energy bills and around £65 on metered water and sewerage bills every year.

Swap a bath for a shower once a week and save £14 a year, and an extra £12 on metered water and sewerage bills.



**£65**

**If everybody in a typical household stuck to a 4 minute shower, it could save around £65 on energy bills every year.**



## Toilets

Fitting a cistern displacement device in an old toilet, could save over 5,000 litres of water a year. That would save around £14 a year in metered sewerage and water bills.



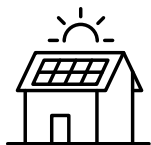
<sup>29</sup> Review of Water resources planning guidelines published by water companies in England and Wales, and advice by Scottish Water and Northern Ireland Water, last reviewed July 2023

<sup>30</sup> Assumes that a household replaces a 9.82 litre a minute shower head with a 7.7 litre a minute shower head.

<sup>31</sup> Based on an average shower flow rate of 9.82 litres a minute used 0.75 times per person per day in a 2.4 person household.



# Solar power



## Solar power

Solar electricity panels, also known as photovoltaics (PV), capture the sun's energy and convert it into electricity that you can use in your home.

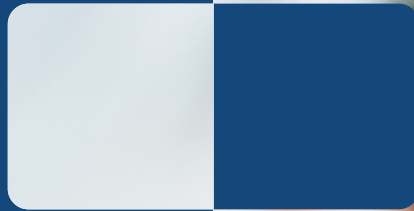
The average domestic solar PV system is 3.5kWp and costs around £7,000.

A Smart Export Guarantee tariff will pay for any exported electricity your home doesn't use. Other export tariffs are available.

Savings below include export payments from a Smart Export Guarantee tariff.



	Carbon saving (tonnes a year)	Home all day	Home in mornings	Home in afternoons	Out all day until 4pm	Out all day until 6pm
<b>London</b>	0.83	£525	£460	£435	£365	£335
<b>Aberystwyth</b>	0.75	£495	£430	£405	£340	£310
<b>Manchester</b>	0.73	£485	£420	£395	£330	£305
<b>Stirling</b>	0.66	£460	£395	£375	£310	£285



**Business enquiries**

Get in touch to find out more about our other business tools and services.

[business@est.org.uk](mailto:business@est.org.uk)

[energysavingtrust.org.uk](https://energysavingtrust.org.uk)

**Data & insights**

Home Analytics

Portfolio Energy Analysis Tool

**Consumer tools**

Energy Efficiency Advice App

Home Energy Efficiency Tool

**Consumer insights**

Energy insight consultancy

Advice and training

Energy advice training

**Sustainability**

Carbon accounting

Net zero plans

Employee engagement

