3. Spend less on energy

If you've got a computer or YouTube on your TV,
have a look at this 8 minute video in your group:
www.youtube.com/watch?v=SAYJPUq1q_g
How to save energy at home/BBC Teach Geography

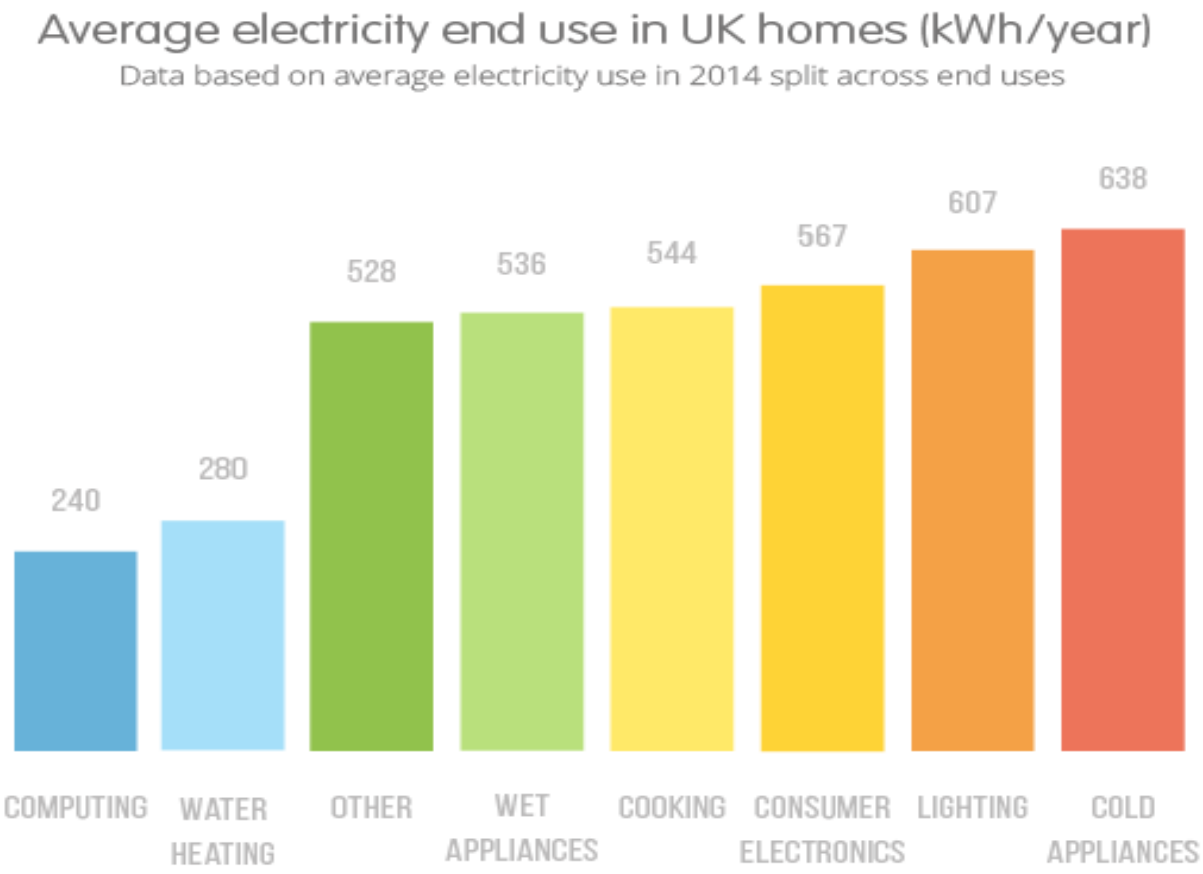
The Dorset Green Living Guide
3.2. SPEND LESS ON ENERGY

The Practical Action Plan

The facts

As you know, energy prices are generally going up rather than down. Using less electricity, gas or oil in your home will save you money. Often we waste a lot of energy without realising and there are significant savings to be made – but it doesn't mean we have to go without. It's not just you and your pocket that will benefit but you'll be doing your bit for the planet too.

Using less energy will also reduce the amount of carbon dioxide (CO_2) emitted from fossil fuels as they are burnt, either in your boiler for your heat and hot water, or in the power station and transmission for your electricity. We all need to reduce our CO_2 emissions (our carbon footprint) if we are to minimise the potentially devastating effects of climate change.



www.ovoenergy.com/guides/energy-guides/how-much-electricity-does-a-home-use.html

The Practical Action Plan

So what can you do about it?

Each of the following actions can significantly reduce the amount of energy a household typically uses. Some will cost you little or nothing, some can be paid for using grants and some will cost you money (but this should be offset by the reduction in your energy bill sooner rather than later).

- **Know how much you are using**
- **Switch to 100% renewable energy**
- **Be a real turn off**
- **See the light**
- **Control your heat**
- **Renewable energy systems**
- **Lagging**
- **Draught proofing**
- **Loft insulation**
- **Cavity wall insulation**

Each action is explained on the following pages. In your group, have a brief chat about each of them, and then decide which ones <u>you</u> want to tackle and when. Each of you then records your own action plan on the page at the end of this section (maybe just 1–2 actions for now).

The actions listed above are the basic (but most cost-effective) things you can do in your home. At the end of the chapter are other actions that you may wish to consider, once you've done the basics.

Note: the red boxes showing costs, savings and effort levels are estimates, based on the following rough guide

- Costs/savings: **Low** < £20, **Medium** < £100, **High** £100+
- Effort: **Low** < 2–3 hours, **Medium** – about a day, **High** – a day+
- Estimates based on a 3 bedroom semi-detached home

The Dorset Green Living Guide
3.4 KNOW HOW MUCH YOU ARE USING

The Practical Action Plan

Cost: none	£ Savings: med	Effort: low	CO_2 saved: med

The energy challenge

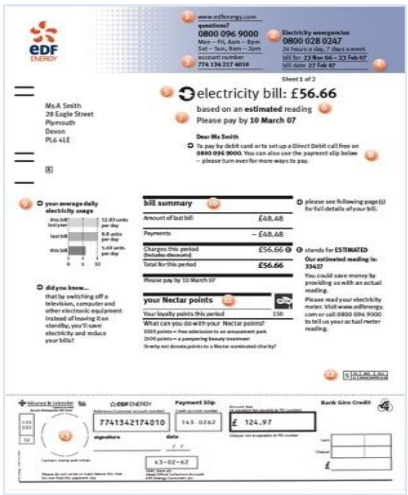
Most people are not very aware of how much energy they are using (i.e. the number of units). Frequent price changes confuse the picture, as your bill could go up even though you are actually using less. Even if you take a look at your electricity or gas bill, things like kWh may not mean much to you.

Often the readings shown on bills are estimated and may be way off. If we pay by direct debit, our regular monthly payment may not reflect how much we have actually used, leading to a shock when this gets adjusted upwards! If we don't know how much we use, then we won't be able to tell if we are using less, if we are being billed correctly by our supplier, or even if we are getting the lowest price if we shop around.

Potential solution

To help reduce your energy use, you first need to measure it so you will be able to tell if it goes down. There are two ways to monitor your energy use:

1. **Get familiar with your energy bills.** Make sure you understand the readings and consumption data. Are your readings taken regularly, or are your bills based on estimated reads? For advice: www.citizensadvice.org.uk/consumer/energy/energy-supply/problems-with-your-energy-bill/understand-your-energy-bill/



2. **Read your own electric and gas meters** regularly and keep a record. There's a wide variety of meters around - older ones with numbers on dials or newer digital versions. Read the numbers from left to right. This tells you how many units (kWh) of gas or electricity you have used. How does this compare with what's on your bill?

3.5 KNOW HOW MUCH YOU ARE USING cont.

The Practical Action Plan

Potential solution

3. **Use an electricity monitor** - you can buy simple, safe devices that easily clip onto your meter cable. They give you up-to-the-minute info about how much electricity you are using and how much it is costing you (along with CO_2 emissions too). In Bournemouth you can borrow a monitor from your local library for free.
4. **Smart Meters:** Every household in Britain will be offered a smart meter by 2024, regardless of whether you are a homeowner, rent or have a prepay meter and it's another way of measuring your usage, you can contact your provider to get one fitted.

Your savings

Studies have shown that people who monitor their energy use typically see reductions of 5–10% (£40–80), just by being more aware of when things are on, and how much each appliance uses. There is a lot of useful independent energy saving advice available e.g.

www.energysavingtrust.org.uk

Free advice sheets from the Centre for Alternative Technology also provide links to person carbon calculators:

www.cat.org.uk/info-resources/free-information-service/green-living/

Save £40–80 off your electricity costs per year.

Next steps, hints & tips

- Start recording your gas and electricity meter readings.
- Write them down at the same time each week or month.
- Subtract the previous reading from the new one to see how many kWh you have used (see over).
- If you have an online gas or electricity account you should be able to log in to view annual total consumption and cost
- Or invest in an electricity monitor. They cost about £30–£50 (see over) or in Bournemouth can be borrowed from libraries.

Yes but I can't read my meters. If you are disabled, chronically sick or of pensionable age you can ask your supplier to read your meter every three months. You could also be eligible for the repositioning of the meter. This should be free of charge.

The Practical Action Plan

Understand your bill

Get to know your bills

Try www.moneysavingexpert.com/utilities/understanding-energy-bills/ to help you get to grips with the information available on your bill. If you don't have a smart meter, get used to taking regular meter readings, and make sure your bills are based on actual readings rather than estimates.

Find out which tariff you are on, and what your annual consumption is. This will help you compare companies so you can make sure you are on the best deal for you, and consider buying from renewable sources which can often be cheaper now.

Energy meters

Smart meters

These are available for free from your electricity supplier and can read both gas and electric readings. An in-house energy use display monitor will also be provided free of charge. However, it may depend on the type of house, meter and location on how quickly they can install one. Contact your energy supplier for more information.

Energy monitors

When you first install your meter, you'll probably wander around the house turning things on and off, and marvelling at the information at your fingertips! It's quite addictive.

Some energy suppliers give free monitors with certain tariffs – call yours and ask! If you don't have a monitor available, you can simply read your electricity meter to see your consumption every day, week or month.

A cheaper option is to buy a simple plug-in monitor for about £15. Have a look on Gumtree or ask on Freecycle to see if you can reuse one. You plug this into a wall socket, then plug in your appliance to the monitor (like a plug adaptor you take on holiday) to see how much energy it's eating up. This obviously can't tell you usage for things that don't have a plug on them.

Sample meter reading record

Date	Meter Reading	Days Since Last Reading	Difference	Average per day (divide the difference by the number of days)	Comment
01/01/2019	1037 (A)				
02/01/2019	1101 (B)	1	(B - A) 64	64.0	
03/01/2019	1154 (C)	1	(C – B) 53	53.0	
05/01/2019	1269 (D)	2	(D – C) 115	57.5	

Understand how to measure energy use

Kilowatts (kW) measure *power* – the rate at which we use energy. Kilowatt hours (kWh) measure *energy* consumed. Power is akin to speed, and energy is akin to distance - the faster you go, the more quickly you cover a given distance. Similarly, the more power you use, the faster you consume a given amount of energy. So, if you consume power at 1kW, you will have consumed 1kWh after one hour. The units on your electricity meter measure kWh: one electricity 'unit' is equal to one kWh.

Gas is more complicated because the 'units' that the meters measure are for a volume of gas. The number of kWh per gas unit depends on whether your meter is metric or not – it will say on the meter if it is a metric one. Your gas bill will show the conversion factor your supplier is using.

For old non-metric meters, one gas unit = 31.4kWh
For newer metric meters, one gas unit = 11.15kWh

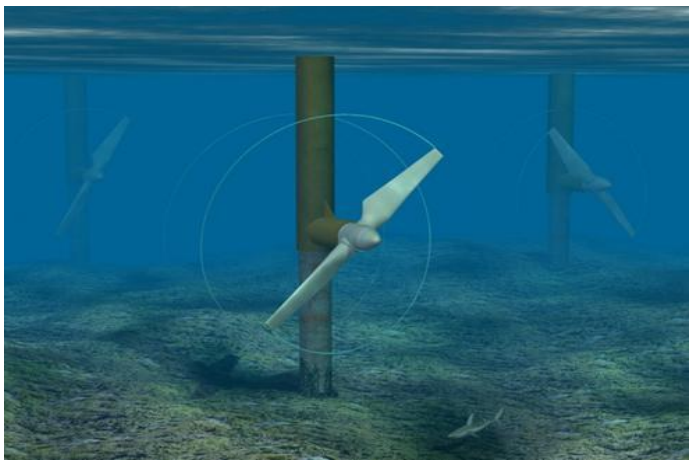
The Dorset Green Living Guide
3.8 SWITCH TO 100% RENEWABLE ENERGY

The Practical Action Plan

Don't believe the greenwash

Switch to a renewable energy provider

Switching to a 100% renewable energy supplier reduces demand for fossil fuel and creates demand for renewable technologies. It supports new jobs in this industry that is so critical for dealing with climate change. Most energy suppliers offer 'green' electricity tariffs, but many of these simply use carbon offsetting, so it is better to buy electricity from a company that generates purely from renewable sources. Energy produced using wind, water, sun and tidal energy dramatically reduces our impact on the climate and can often be cheaper too. Changing supplier is quick and easy and together we could make a big difference in shaping the UK energy industry into a cleaner industry. Please see:
www.ethicalconsumer.org/energy/shopping-guide/gas-electricity or
www.bigcleanswitch.org



The Dorset Green Living Guide
3.9 BE A REAL TURN-OFF cont.

The Practical Action Plan

Cost: none	£ Savings: med	Effort: low	CO_2 saved: med

The energy challenge

Leaving lights, TVs, computers and radios on when there's no one in the room is an obvious waste of money and energy. But even when we switch things off at the appliance switch, some older appliances go to standby mode which can still consume a lot of energy unless turned off at the wall socket.

The good news is that all new electronic and electrical products sold in Europe after 2015 are only permitted to have a maximum 1 Watt standby consumption, costing approx £1.50 per year

Try investigating the power saving mode on your laptop, computer and phone.

Solution

Turn things off when you leave the room for more than a few minutes. If you need to leave lights on, such as an outside light, use an energy efficient LED light. You can buy remote control 'standby savers' such as 'Bye-Bye Standby' from about £20 which cut power to all connected devices with the press of a single button.

The Dorset Green Living Guide
3.10 BE A REAL TURN-OFF cont.

The Practical Action Plan

Your savings

In a typical home, turning your appliances off rather than using standby can save up to £24 off your annual electricity bill.

Saves £24 off an average electricity bill per year. Costs nothing!

Next steps, hints & tips

- Talk to everyone in your home – try competition to help motivate everyone.
- Keep a scoreboard on the fridge for every time someone finds a light or TV on, with no one there. Then motivate your kids with a potential share of the savings!
- You can use an energy monitor/smart meter to see exactly how much power each item is using when on, or in standby mode – see previous action.
- Also – just try using things less. Dry clothes in the sun not the tumble dryer, turn lights off in the daytime, only wash full loads etc.
- Wash your clothes less often, and at a lower temperature.
- Use natural light when you can.
- Damp air is harder to heat than dry air so control the moisture in your house. After showering always leave the window open for an hour or so with the door closed and make sure you use the extractor when saucepans are boiling.
- Microwaves and slow cookers use less energy.
- Keep lids on saucepans to use less energy when cooking.
- Make big pots of curries or stews and bake in batches so that you can freeze for another day to reduce how much you use the oven and cooker

Notes:

The Dorset Green Living Guide
3.11 SEE THE LIGHT

The Practical Action Plan

Cost: med | **£ Savings: med** | **Effort: low** | **CO_2 saved: med**

Energy challenge

You are probably aware that many of the 600 million light bulbs in UK homes used to be inefficient tungsten filament bulbs. 95% of the energy they used was given off as heat not light! By phasing out these inefficient bulbs, the UK government has saved the electricity output of two power stations.

Energy-saving light bulbs use 80% - 90% less electricity than the older filament bulbs, but produce the same amount of light. Energy-saving light bulbs such as LEDs are compact, bright and now available in a wide range of shapes - so the only difference you'll notice is a drop in your electricity bills.




Solution

LED lights have progressed very rapidly in recent years and can be used to replace both existing halogen downlights and traditional light bulbs.

The light output from a 7 watt LED is equivalent to a 50 watt halogen light bulb and LEDs can last over 20 years!

Have you changed all your bulbs over yet? In Bournemouth you can recycle the older style compact fluorescent lamps in your local library. NB: Do not put these in your bin as they contain mercury!

Yes but I have dimmer switches. If you have a dimmer switch you can now buy dimmable LED energy saving bulbs too.

Your savings

Fitting just one compact LED energy saving light bulb can save you about £3-£6 a year. Energy saving light bulbs typically cost around £3 each but you'll easily pay back the cost through savings on your electricity bill in around 1 year. LED lights last up to 20 times longer than the older filament bulbs. An average home has 25 bulbs: if all of them are replaced with LED low energy lighting this will save about £80 per year.

Saves £3–£6 per light bulb per year. Cost about £3 each. Last much longer!

Next steps, hints & tips

Look at the lights in your house. Starting with the brightest and those used the most, consider replacing fluorescent and halogen bulbs with a LED low energy alternative.

Recycling bulbs

LED low energy bulbs last 20 times longer than traditional ones.
Local Household Recycling Centres will take used LED low energy bulbs and safely deal with the mercury content of compact florescent (CFL) light bulbs and in Bournemouth you can recycle them in the libraries too.

The Dorset Green Living Guide
3.13 CONTROL YOUR HEAT

The Practical Action Plan

Cost: none | **£ Savings: high** | **Effort: low** | **CO_2 saved: high**

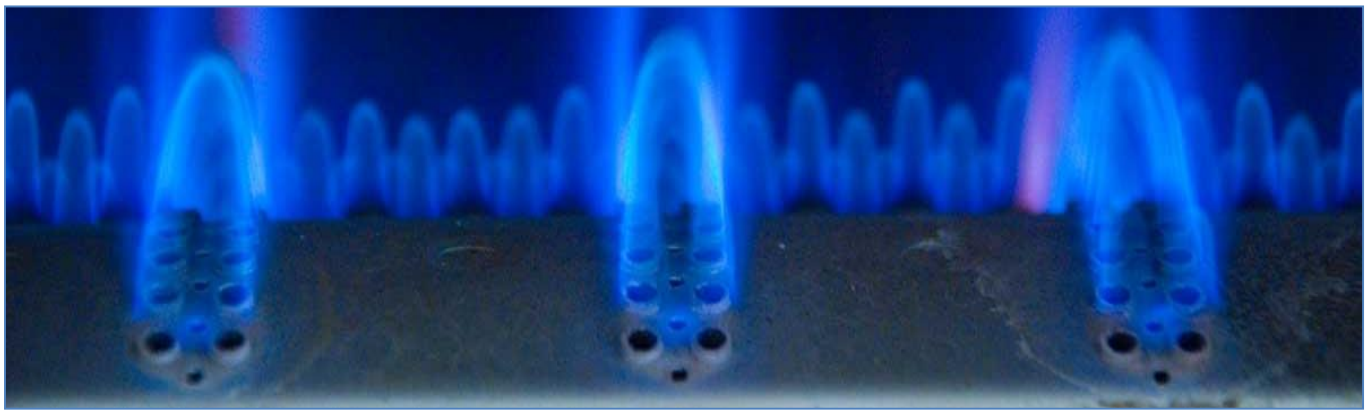
Energy challenge

Boilers and heaters account for two-thirds of the energy used in our homes, so changing the settings just a little can have a big impact. However, many of us don't know how to use the heating controls effectively – mastering them can make a big difference to our pockets.

Research shows that in the UK, we've increased the temperature of our homes by 5°C since the 1970s – so there's plenty of scope for improvement.

Solution

You may already have a full set of heating controls in your home – but are you getting the best from them? Take a little time to find out what each control does by referring to the instruction manuals that came with them. If you don't have any manuals to hand, copies can usually be downloaded from the manufacturer's website or call and ask them to send you a printed copy.



Yes but I like being cosy at home. At what price? You could be just as warm with extra clothes on or a blanket. You could also try draught-proofing or fitting additional insulation to keep more of your heat inside, as we will see in later chapters. It's amazing how quickly your body gets comfortable at a slightly lower temperature, especially if you lower it gradually.

The Dorset Green Living Guide
3.14 CONTROL YOUR HEAT cont.

The Practical Action Plan

Your savings

For every degree you turn the heat down by, you can save about 10% of your total heating bill!

If you fit the correct heating controls, this could typically save you around 17% of your heating bill in total.

Saves 10–17% off your heating bill.

Remember

You can make radiators more effective with reflective panels behind, and shelves fixed above.

Also, make sure that no curtains are falling in front of radiators – always tuck the curtains behind. Reuse old material (such as old duvet covers) to line, double up your curtains or try adding net curtains or blinds as well.
www.energysavingtrust.org.uk

Next steps, hints & tips

- Set your thermostat to 16˚C – put on an extra jumper if you feel cold.
- Dig out the instructions for the heating system programmer. Set the heating to come on 20 minutes before you get up, and go off 15 minutes before you leave home
- Your hot water cylinder thermostat should be set at 60˚C or 140˚F. Any higher is a waste of energy and can scald, any lower and there may be risk of legionella.
- Upgrade to a more intelligent digital thermostat. It will cost around £180 and pay back in saved energy within about 4 years
- Heat the rooms you use most, rather than the whole house – radiator valves (TRVs) will help. Turn the heating and hot water off when you go away or down to 10 ˚C during the winter coming on twice a day for 30 mins.
- Keep furniture away from radiators to let heat circulate. Switch off the heating overnight and warm beds with electric blankets in winter. Cooler temperatures promote better sleep.

The Dorset Green Living Guide
3.15 RENEWABLE ENERGY SYSTEMS

The Practical Action Plan

Cost: high	£ Savings: high	Effort: med	CO_2 saved: high

Why choose alternative heating systems? Lower energy bills: Energy prices are rising and show no sign of stopping. In the UK about 75% of an average energy consumption goes to pay for space heating and hot water production. With so much money being spent on home heating, it's crucial that you are using the most efficient system possible so you can keep running costs down. Alternative heating systems are significantly more efficient and cheaper as they use 'free' renewable energy.

Better for the environment: The climate crisis clearly means that we have to find new ways to live which will not harm the environment. This means changing the way we heat our homes and being more conscious of our energy use. Alternative heating systems are designed to minimise energy consumption and air pollution, and powered by renewable energy, they produce zero carbon emissions.

HEAT PUMPS

The most popular option now being installed in many new-build homes is the heat pump, which extracts heat from its surroundings and compresses it until it is hot enough to heat water or air to heat your home. There are two types of heat pumps available as alternative heating systems:

a) Ground source heat pumps
b) Air source heat pumps (air-to-water or air-to-air)

As their names suggest, a ground source heat pump involves burying pipes underground where natural heat from the ground can be absorbed, while an air source heat pump will extract heat from the air outside the home.

Will I save money on my utility bills with a heat pump?

Yes, air and ground source heat pump system could save you around 50% on your heating and hot water bills. Heat pumps are low maintenance and incredibly efficient. Although they need a small amount of electricity to run, they produce 3-4 times more energy than they use which is much more efficient than even the best new gas boilers (at best 90%). And of course, as fossil fuel supplies run low, natural gas and oil prices will rise

Are they worth it?

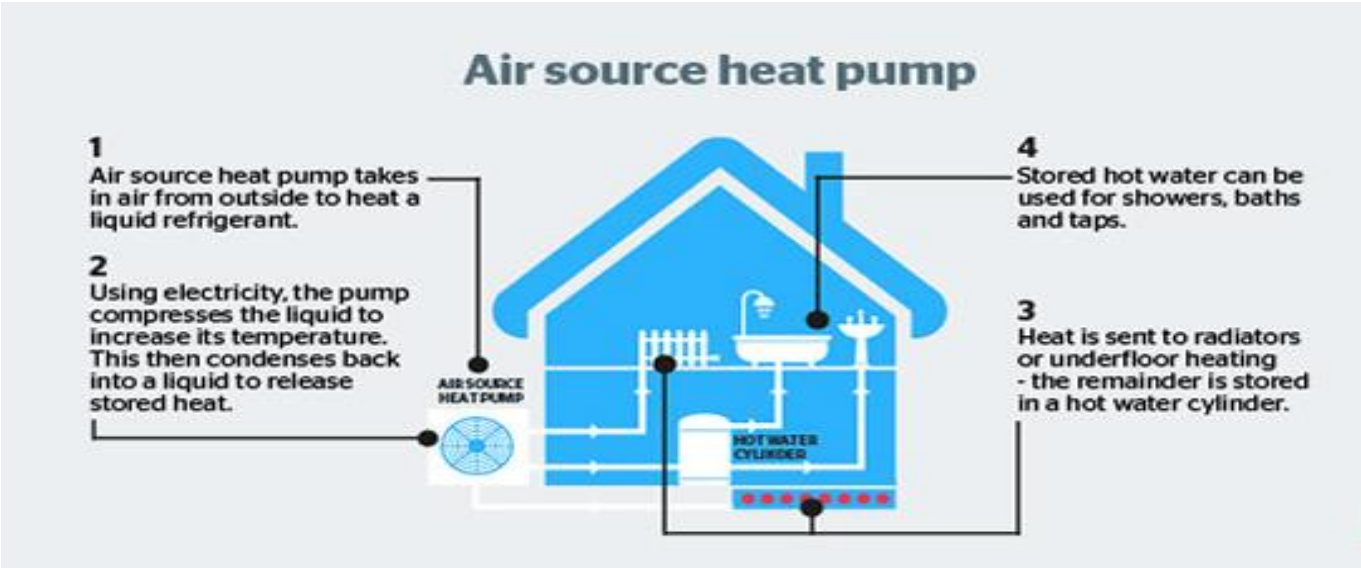
Will a heat pump reduce my carbon footprint?
Yes. If you want a cleaner and greener source of energy, a heat pump may be the answer to reducing your carbon footprint whilst making a sensible long-term investment in your home. It has the lowest emissions of any kind when compared to mains gas, LPG, oil or coal boilers, or a direct electrical supply. As the pump uses a small amount of electricity, it isn't zero-carbon unless the electricity is provided by a 100% renewable energy supplier.

What are the incentives for buying a heat pump?
The government currently offers an incentive for some sustainable heating systems. For air-to-water and ground source heat pumps (and other alternatives), you may be able to receive payments of between £875 to £2,750 a year from the Renewable Heat Incentive (RHI) scheme which pays quarterly based on the energy generated during the first 7 years after installation. For more details see:
www.renewable-heat-calculator.service.gov.uk
www.energysavingtrust.org.uk

How much does a heat pump cost?
There are 2 kinds of heat pump system, taking heat either from the air or from the ground. Ground source systems are more costly to install due to extensive groundwork involved but the more popular air-to-water system currently costs about £6,000-£7,000 installed. Visit: Yougen website www.yougen.co.uk & National Energy Foundation www.nef.org.uk/

Pros of Heat Pumps	Cons of Heat Pumps
Much more efficient & last longer than gas/oil boilers. **Don't produce carbon/pollution.** **Eligible for RHI incentive.** **Use very little power so ideal partner for solar PV.**	High upfront cost. Less efficient in winter. May require new radiators or underfloor heating.

Air source heat pump



Air source heat pumps move warmth in the air from one place to another to heat buildings. This process works in low temperatures even down to -15˚C. There are 2 kinds of air source heat pump system to choose from: air-to-water or air-to-air.

Air-to-Water Pumps

An air-to-water pump extracts heat from the outside air to transfer it to heat water for radiators, or underfloor heating systems, and tap-water, as shown in the image above. An air-to-water heat pump can deliver both heating and hot water so you should no longer need a boiler, oil or LPG tank. However, an air source heat pump can run along with other heat sources such as solar panels, underfloor heating or wood burning stoves. It will have full heating controls and thermostat or can even be run via your mobile phone!

Air-to-Air Pumps

These pumps also extract heat from the air outside your home but then circulate it around your home via fans. This type of heating system can be cheaper to install as very little pipework is required and is ideal for small or open-plan areas. An air-to-air heat pump will not produce hot water, but one advantage is that in the summer, can be switched over to provide air conditioning. Unlike air-to-water systems they are not eligible for RHI.

Solar Photovoltaic (PV) Panels

Solar panel (or PV) systems capture the sun's energy using photovoltaic cells. The cells convert the light into electricity, even at a lower level on cloudy days, which can be used to run household appliances, heating and lighting, whilst any surplus generated can be sold to energy companies.

Many people assume that PV panels are now no longer a good investment because the government have abolished the Feed-In Tariff for electricity generated, but they are surprisingly still very worthwhile. This is mainly because the price of PV panels has dropped dramatically to about a third of the price over the past decade. This means that for a small investment, you could not only generate free electricity, but also since January 2020 get paid for what you export to the grid under the Smart Export Guarantee scheme, while also adding significantly to the value of your home.

The Smart Export Guarantee now requires larger energy companies to offer payment for electricity exported into the grid. Some pay the wholesale price while others pay a fixed rate e.g. Octopus offer 5.5p/kWh, measured by smart meter.

Notes:

Costs and savings of PV

The average domestic solar PV system is **4kWp** and now costs only around **£4,500**. A 4kWp system in Dorset could generate around **4,200 kilowatt hours** of electricity a year and save around **1.6 tonnes of carbon dioxide** every year. With Smart Export Guarantee payments you could save £390 off your annual electricity bills if you are normally at home all day, in which case the PV panels would pay for themselves in 11.5 years, less than half their expected lifetime of 25 to 30 years.

For more details see: www.energysavingtrust.org.uk/renewable-energy/electricity/solar-panels

Another useful addition to a PV system is to store the energy you have generated either in a battery or as heat. With the major energy demand in homes coming from hot water heating, the cheapest way to store energy is to install a smart device to divert your surplus electricity to keep your hot water tank heated. For more details on this and other storage systems see: www.energysavingtrust.org.uk/blog/home-energy-storage-right-me

The Dorset Green Living Guide
3.20 LAGGING

The Practical Action Plan

Cost: med | **£ Savings: med** | **Effort: med** | **CO_2 saved: med**

Challenge

Many hot water tanks in our homes are not sufficiently lagged. This means that heat is continually being lost, and your boiler has to work harder to keep the stored water to the desired temperature. Heat is also lost from pipes that carry hot water around your house. In some places this is OK (e.g. through a cupboard that is used to dry laundry) but often, it's just more unnecessary and expensive heat loss.

Solution

Both tank and pipe insulation will keep your water hotter for longer by reducing the amount of heat that escapes – by up to 75%. This reduces your fuel bill and saves you money. Wrapping hot pipes in foam sleeves stops them losing heat through contact with cold air. Both tank and pipe insulation is cheap and easy to fit, so this is a DIY option even if you're renting.

Yes but I can't access most of my hot water pipes. If you can afford it then get professional help. Otherwise just do the ones that you can easily reach. It's often easier to access pipework when you're doing refurbishment work.

The Dorset Green Living Guide
3.21 LAGGING cont.

Notes:

Save £50 a year with a one-off investment of £22.

Your savings

A hot water tank jacket costs about £12 but saves you about £40 per year on a poorly insulated hot water tank.

Insulation for hot water pipes will cost about £10 and save you around £10 a year.

Next steps, hints & tips

- Touch your hot water tank. If it feels warm, it needs a jacket.
- Measure and write down the height of the tank to the top of its dome, and its diameter. (Two standard sizes are 900mm x 450mm and 1,050mm x 450mm)
- Fit a BS Kitemarked insulating jacket (75mm or 3 inches thick) around your hot water tank.
- Feel your water pipes and consider lagging those that are hot – buy foam tubes and fit to pipes.

For more info see
www.energysavingtrust.org.uk

The Dorset Green Living Guide
3.22 DRAUGHT-PROOFING

The Practical Action Plan

Cost: med	£ Savings: med	Effort: med	CO_2 saved: med

Watch this quick video from Scottish Energy Saving Trust
www.youtube.com/watch?v=XOuCzuL2qeU

Challenge

If you can feel cold air coming in around the windows in your home it means warm air is escaping. Sitting in a draught doesn't just give you a pain in the neck; in a typical home 20 per cent of all heat loss is through ventilation and draughts.

Save about £30 a year. Costs about £20–30 to buy.

Solution

Draught-proofing fills gaps around doors and windows and decreases the amount of cold air entering your home.
There are several types of materials available from DIY stores including brushes, foams and sealants to strips and shaped rubber or plastic that fit around doors and windows. Good quality products will conform to the standard BS 7386.
Use old bed sheets and duvet covers to line curtains, giving extra insulation. Have a look online for craft ideas and make your own door draught excluders such as a long sausage dog for the bottom of the door.

Yes but… doesn't my house still need to breathe? Once the draughts are plugged, it's important the house is still ventilated. In kitchens and bathrooms you might need an extractor fan if condensation is a problem. Remember to open your windows and air the house regularly, especially during the colder months. You could use a window-vac to remove condensation from the inside of windows after very cold nights.

Next steps, hints & tips

- Use an lit incense stick to find out where the draughts are coming from: gaps between floorboards, and around door frames, loft hatches, windows and pipes are the main culprits.
- Measure up external doors and windows and get some draught seals from the DIY shop. Seals are usually made from self-adhesive foam, rubber or brush material and are easily installed, maybe with the help from a friend.
- Try the Trash Nothing app, Facebook groups or Gumtree before resorting to buying new.
- Get a brush-style draught excluder for your letter box.
- Seal unused chimneys with a cap, allowing for some ventilation. This will also prevent birds falling in. Chimney bags and balloons are also available for inside use from around £14, helping to reduce heat loss.
- Draw your curtains at dusk for extra draught exclusion and keep them behind radiators, otherwise you're just heating the window.
- Curtains too thin? Sew a layer of heavy lining material inside them. Upcycle an old duvet cover or blanket to line your curtains. Not sure how? Find a local sewing group or Repair Café, or barter with an experienced sewer. Bulldog clips are a great standby! Charity shops may also have suitable fabrics.
- Use secondary glazing, or cover windows in a clear plastic film (available at DIY shops) that tightens over the pane when heated with a hairdryer.
- If you have wooden floorboards, fill the gaps between and around them with an acrylic sealant (you can also insulate underneath the floor).
- You may be eligible for free help and resources from LEAP: www.applyforleap.org.uk

Notes:

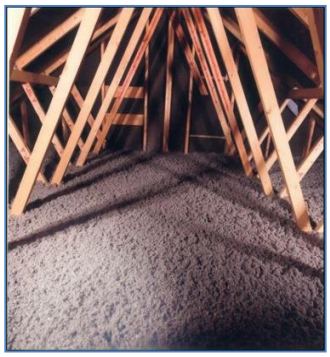
The Dorset Green Living Guide
3.24 LOFT INSULATION

The Practical Action Plan

Cost: high | **£ Savings: high** | **Effort: med** | **CO_2 saved: high**

Challenge

In an uninsulated home a quarter of your heat is lost through the roof. Insulating your loft is a simple and effective way of reducing your heating bills and you can even do it yourself. Already got insulation? Well, you're getting warmer – but more than six million homes in this country have 75mm of insulation or less in their lofts (270mm is recommended by current Building Regulations).



Solution

Insulation acts as a blanket, trapping heat rising from the house below. Insulating material is simply laid over the floor of the loft, between and then over the joists if they are visible. Protective clothing, gloves and masks should be worn. Care must be taken not to insulate below the cold water tank, if one is present, and not to compress the insulation in tight corners or eaves. Walk boards can then be laid over the joists to provide safe access from the loft hatch to any water tanks.

Loft insulation can be carried out as a DIY task or by a professional installer. There may be grants and special offers available to help you pay for loft insulation. Check with LEAP to see if you are eligible for help.

Yes but I don't know which materials to use. Suitability for you will depend to an extent on the nature of your loft space - but all of them are a better bet than not insulating it at all. There are natural and recycled material options available, check out the Energy Saving Trust for some ideas.

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3.25 LOFT INSULATION cont.

Your savings

If you currently have no loft insulation and you install the recommended 270mm depth you could save around £250 per year on your heating bill. Do it in spring or summer and get ready for next winter.

However, if topping up insulation from 150mm to 270mm the savings are less, approximately £50 per year.

Many people are put off loft insulation because of the hassle involved in emptying them first. Ask installers if they will help you. It could be motivation to sell, donate or recycle some of what's up there to help offset costs!

Notes:

Save £250 per year. Costs approx £200 if DIY. Pays for itself in around a year.

Next steps, hints & tips

- Check your existing insulation - if it's less than 150mm, you should definitely consider topping it up.
- Decide whether you want to install it yourself or get a professional to do it. Consider which material you prefer.
- If you're opting for DIY, see the Energy Saving Trust website for a step by step guide.
- You can still insulate if you have a flat roof. See the Energy Saving Trust website again for more details.
- The LEAP website below provides information on grants for many people even those **not** on a low income or in receipt of certain benefits

Energy Saving Trust www.energysavingtrust.org.uk
Local Energy Advice Partnership (LEAP) www.applyforleap.org.uk

The Dorset Green Living Guide
3.26 CAVITY WALL INSULATION

The Practical Action Plan

Cost: none-high | **£ Savings: high** | **Effort: med** | **CO_2 saved: high**

Challenge

In most houses built after the 1920s, the external walls are made of two layers with a small air gap or 'cavity' between them. If your home has unfilled cavity walls, a considerable slice of your energy bills will be spent heating the air outside. In fact, about a third of all the heat lost in an uninsulated home is lost through the walls. Cavity wall insulation is a simple, fantastic way to significantly reduce the amount of energy you need to heat your home.

Solution

Filling the gap between the two walls of a house with an insulating material massively decreases the amount of heat which escapes through the walls. It will help create a more even temperature in your home, help prevent condensation on the walls and ceilings and can also reduce the amount of heat building up inside your home during summer hot spells.

It can normally be applied from the outside through small holes drilled in the wall. It's a simple process and is normally completed within three hours, without damage or mess to your house or garden.

Yes but… why spend all this when I'm going to sell my house anyway in the next few years? You will need an Energy Performance Certificate to sell your home and cavity wall insulation will increase your efficiency rating, potentially adding value to your home.

3.27 CAVITY WALL INSULATION cont.

Your savings

Cavity wall insulation can save you about 15% on your fuel bills, or £160 per year. It typically costs about £600 to install. Loans and grants may be available to install cavity wall insulation.
Loft and cavity wall insulation may be free to householders in receipt of certain benefits. However government policies and financial support programmes can change at short notice. Call LEAP to find out what's currently available for you: 0800 060 7567. You may be pleasantly surprised.

Notes:

Saves £160 per year on your heating bill. Costs approx £600 Pays for itself in about 4 years.

Next steps, hints & tips

- First of all, find out if you have cavity walls. Indicators include bricks all of the same length, a house built after the 1920s and walls thicker than 265mm (10 inches).
- If you think you have cavity walls, check the Energy Saving Trust website or the You Gen website for further advice and information
- The LEAP website below provides information on grants for many people, even those who aren't on a low income or in receipt of benefits.

More info on insulation: www.energysavingtrust.org.uk www.yougen.co.uk
Local Energy Advice Partnership (LEAP) www.applyforleap.org.uk

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3.28 YOUR ENERGY ACTION PLAN

The Practical Action Plan

Reminder

Possible actions:

- Know how much you are using
- Be a real turn off
- See the light
- Consider renewable heating
- PV panels
- Lagging
- Draught proofing
- Loft insulation
- Cavity wall insulation

Record your actions below including any other ideas

My actions	Previously done	When I'll do this	Notes

Group actions

How can you help each other out in your team? List team actions here (with named person and due date)

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3.29 ENERGY: THE BIGGER PICTURE DISCUSSION

The Practical Action Plan

The bigger picture

Think of some energy wasting issues we have in our homes.

- What are the real barriers to change?
- What do you think you will need to do to make positive changes in <u>your</u> home?
- What help would you like the government to offer to reduce our fossil fuel energy consumption?

Notes:

The Practical Action Plan

Gas Meter Readings

Date	Meter Reading	Days Since Last Reading	Difference	Avg Per Day	Comment

Electricity Meter Readings

Date	Meter Reading	Days Since Last Reading	Difference	Avg Per Day	Comment

Recap and where to go for more information

You may want to explore these actions **once you've done the basics** outlined in this workbook. These actions tend to take more effort and/or more investment with a longer payback period. However, they can significantly reduce your energy use further and also your carbon footprint.

Fit double glazing or even triple glazing

Double glazing cuts heat lost through windows by half, and installing Energy Saving Recommended double glazing can save around £140 a year on your heating bills. Double glazing can save a household around 720kg of CO_2 a year. See www.energysavingtrust.org.uk/Insulation for more information and advice.

Solid wall insulation

Solid walls lose even more heat than cavity walls; the only way to reduce this heat loss is to insulate them on the inside or the outside. It's not cheap, but you will soon see the benefits to your heating bill and it's another way of playing your part in reducing CO_2 emissions. In addition it may add value to your house. There are two types of solid wall insulation: external and internal. See www.energysavingtrust.org.uk/Insulation for more information and advice.

Radiator reflectors

Try placing some radiator reflectors behind your radiators to reflect back the heat loss. This company boasts a 95% back reflection of your precious heat so may be worth considering, www.radflek.com/ as recommended by the Energy Saving Trust. For more info about this process visit www.thegreenage.co.uk/do-radiator-reflectors-work/ or http://bitly.ws/6V5K

Look into replacing your old boiler with an air-source heat pump

Using the same radiators you could look into replacing a worn out old boiler for a new air source heat pump as there are now grants available. See www.government-grants.co.uk/air-source-heat-pump