



Higher cost options which could give long-term benefits

- **RENEWABLE ENERGY & FUTURE HEATING OPTIONS**

Why not generate your own electricity! For example, install solar PV panels (or solar tiles) on the roof of your house or on your garage. And instead of exporting your unused solar power out onto the grid, install a diverter unit (e.g. Eddi, ApolloGEM or iBoost) which redirects any unused solar power into your Hot Water cylinder's immersion heater, giving you free hot water! Installing a battery will allow you to store your unused solar power from the daytime for use later. Going a step further, instead of gas central-heating, installing electric far-infrared radiant heating panels (eg Herschel), on your walls or ceilings is highly energy efficient and the lifetime cost is actually less than a heat pump.



However, whatever technology you consider, the best heating options will be those that use energy where it is created and in the form that it's been created. For example, if we generate solar power on our roof, it is most efficient to simply use that as electricity within our homes. And if we choose to use that power for heating, then using radiant heating from modern electric heaters (e.g. far-infrared panels) which directly warms our bodies, is most efficient. It is very inefficient to use energy to heat the *water* in central heating radiators, which then heat the *air* in our homes, which then warms us up!

In most cases, it's best to only make expensive changes to our home's heating system when the current system is at the end of its life (this applies to double-glazing too). For the vast majority of us, our best option is to **INSULATE** our homes as much as possible and also minimise how much heat we use every day. This will bring us massive benefits financially and cut our carbon emissions. It will also ensure that whatever heating system we switch to next, it will not be unnecessarily over-sized or excessively costly to run.

New renewable technologies are continuing to emerge and develop at pace now. But every home is different in the UK, so there is not likely to be a "one size fits all" solution. Much of the new technology is still very costly, so before you decide on any major refit, do plenty of careful and wide-ranging research on the products and installers you might use, as you will want your new system to work effectively, efficiently and reliably. It will be essential to make a really good decision as the cost of putting right a bad decision could be extremely high. Live in Hampshire? Call the Environment Centre on 0800 804 8601 to get free retrofit advice.



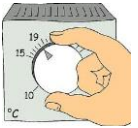
So while we each continue to mull over what *will* be the best future heating solution for our home, we can still focus on making all the small changes. These will definitely make a big difference to our bills and, if we all do the small things, it will also really help the planet!

for reducing winter energy costs in your home



Zero cost ideas

- **CURTAINS:** Close all curtains and blinds at sunset to retain the warmth generated indoors by any sunshine there's been during the day.
- **CLOSE INTERNAL DOORS & UNUSED ROOMS:** Closing internal doors will cut down uncomfortable draughts. In rooms that aren't being used, close blinds and curtains, turn the radiator down or off and, critically, close the door to prevent moisture from elsewhere causing condensation on the cooler walls. Closing off conservatories in winter prevents draughts and will help keep your home warmer.
- **WEAR MORE CLOTHES:** Dress in layers - like mountaineers! They wear many thin layers of clothing underneath their outer clothing in order to retain warmth. So dig out those vests and thermals. And "long underwear" with long sleeves and legs will keep you toasty warm. A thick pair of socks over a thin pair works well, especially with thick fleecy slippers, and tucking your trousers into your socks will stop cool air chilling your ankles. Remember to put on a jumper or cardigan before leaving a warm room - it's a lot cheaper than turning up the heating elsewhere, and our bodies are amazing and can quickly adjust to the slightly less warm temperature – it only takes a couple of minutes.
- **TURN DOWN THE HEAT:** Turn down your central heating thermostat. A 1°C reduction could currently save the average household about £200 per year, and you'll hardly notice the difference in temperature. A 2°C reduction could save around £400 per year. And keeping more active, rather than sitting down a lot, will also help you keep warm!
- **CONTROL THE MOISTURE:** In winter, moisture control in the home is vital to prevent mould growing on cold surfaces and then potentially triggering respiratory illnesses.



- ✓ After a bath or shower, immediately wipe down all wet surfaces - tiles, shower cubicle etc – a window-cleaning "squeegee" rubber blade works really well. Even if there is an extractor fan running, open the window but keep the door shut. When the steam & condensation have gone, turn off the fan, and close the window and door. This drastically reduces the amount of moisture escaping into the rest of your home and helps prevent mould problems in bedrooms.



- ✓ When cooking and using hot water in the kitchen, always close the kitchen door to prevent moisture migrating into other parts of your home. Turn on the extractor fan or hood and put lids on pans. Before draining boiling water from a pan, put cold water in the sink or washing up bowl and pour the pan water into the cold water - this really helps reduce the steam released.



- ✓ Hang your washing outside - a dry, breezy day is best - even in winter. This will reduce the amount you need to dry your laundry indoors/in the tumble-drier. VERY GREAT care is needed if you do hang wet laundry indoors – you need to stop moisture getting elsewhere and causing mould in cool corners. Ensure any room used for drying is WELL-ventilated and the door closed.



Minimal cost ideas



- **CHIMNEYS:** A fireplace or a wood-burning stove (whether in use or not) is very likely to make your home feel draughty. This is due to the 'stack effect'. When warm air exits up the chimney or flue, cold air is drawn in from outside. Installing a chimney balloon helps. TAKE CARE - burning indoors creates pollution inside & outside which affects our health.

- **DOORS:** Put a draught-excluder "sausage-dog" roll across the bottom of draughty doors, especially external doors and French-windows or patio doors. You can even make your own by stuffing an old pair of jeans, trousers, or leggings with old t-shirts, rags, newspapers and old bubblewrap.



- **DOORS:** Hang a heavy curtain across inside all external doors. External doors are often draughty due to frequent use, resulting in worn hinges and door-seals. Fit new brushes or seals as needed. If there is a letterbox, cat-flap, or open key-hole, check that the flap or cover seals well. A video on our website shows how to cover your letter-box or cat-flap.

- **DOORS & WINDOWS:** For double-glazing, check rubber seals and hinges every year and repair/adjust/replace as needed, or get a good installer or double-glazing repair company to do this for you. For leaky, badly-fitting wooden windows or doors, fill any gaps with foam draught-excluder strip.



- **CURTAINS:** If you haven't got them on all your windows already, fit curtains. Uncovered double or even triple-glazed windows lose heat more quickly than insulated walls and this sets up unpleasant down-draughts. The bigger the area of glass, the worse the draughts. Curtains stop these draughts as the warm air in the room can no longer get chilled by the glass. Thermal or black-out linings really help. Make sure your curtains are long enough to tuck behind any radiators positioned below your windows. If you fit blinds or net curtains as well as the main curtains, this will make even more difference!



- **RADIATORS ON EXTERNAL WALLS:** To reflect heat back into the room, stick DIY aluminium foil-covered corrugated cardboard behind your radiator, or buy foil-covered bubble wrap from a DIY store as this provides a bit of insulation too.



- **REDUCING YOUR HEATING BILL:** EndoTherm liquid added to your central heating water provides 10% to 15% savings. It works by increasing the heat released from your radiators. It's made in the UK and is endorsed by the Energy Saving Trust. An average house needs a 500ml bottle. You can easily install it yourself or ask a plumber, but they may charge. It will need replacing if you drain your heating system for any reason.

- **REDUCING YOUR HEATING BILL:** The neodymium Boostaboiler unit is a unique UK product which is proven to give between 6% and 20% savings on your heating bills. You simply fix it to the fuel supply pipe on your boiler, as close to the boiler as possible. It starts working immediately and needs no maintenance. You can get more information from www.theheatproject.org.uk or www.schoolsenergyproject.org.uk





Medium cost ideas

- **POWER-FLUSHING:** Power flush your heating system every 10 years to clear sludge and to help your radiators work more efficiently. Look for a reliable, trustworthy contractor.

- **FIT TRVs:** If you haven't got them already, fit TRVs (thermostatic radiator valves) to all radiators in your home. These control the temperature in each room so the heat isn't on full continuously, and this will save you a LOT of money! The latest TRVs can actually be set to maintain a specific temperature in each room. The "Just Right" temperature range is between 18°C and 21°C for the occupied parts of a home.



- **INSULATING WALLPAPER:** A difficult-to-insulate room with cool walls can be improved by putting up thick insulating wallpaper eg Wallrock KV600. First check any cold walls that you're planning to cover are not caused by moisture ingress. A thermal imaging camera will usually confirm the situation (check out our loan camera scheme). Insulating wallpaper only needs to be put on the cooler external walls in a room, not the warmer internal walls. Make sure to fit it right into the window recesses so no cold patches are left to attract condensation and mould. To conceal the joins, use Wallrock Fireliner paper on top – it looks great, the paper improves fire-resistance and is very easy to paint.



- **LOFT INSULATION:** Top up your loft insulation to at least 270mm. Insulating your loft-hatch is essential! There are now many more user-friendly insulation materials that make DIY insulation tasks much easier (e.g. Supasoft, Thermafleecce wool or hemp insulation). You may even decide to convert your loft to a warm space and insulate between the sloping rafters instead. But do plenty of careful research first (& check with your mortgage lender) to ensure you choose the right insulation material and installation method (AVOID sprayfoam) as mistakes can be very expensive to correct.



- **CAVITY WALL INSULATION:** If your home hasn't already got cavity wall insulation, it is worth seriously considering it and doing your research, as the benefits are significant – a third of your home's heat is lost through the walls if they are not insulated. Get more information from www.energysavingtrust.org.uk, and/or consult an expert.

- **INSULATING THE FLOOR:** If you plan to lay a new floor, ensure you take the opportunity to put down ample insulation underneath before you start laying your laminate or other flooring. If you are fitting a new carpet, choose a good quality thermally-insulating underlay. This will help reduce heat losses especially if the room is above a cold integral garage or cellar.



- **DRYING THE LAUNDRY:** When outdoor clothes-drying isn't possible, a heat-pump tumble drier is the cheapest indoor option. It consumes very little power and doesn't need an external vent. According to Which?, for a family doing several full loads of washing per week, using a heat pump tumble drier costs only a third (£57/yr) of using a heated airer.

