Greener Heating for Your Home

CUTTING HOME ENERGY USE IS AN IMPORTANT WAY TO REDUCE OUR CARBON FOOTPRINT, SAYS STEVE ALLEN.

Energy use in the home is responsible for more than a quarter of the UK's carbon emissions. For the average UK household the vast majority of the total energy use is for heating – 83% (60% space heating, 23% water heating) – so it's clear that addressing the way in which we keep our homes warm is one of the most effective ways of becoming a little greener. As we will show, this can lead to reduced heating bills too!

For new-build UK homes it is possible, through passive solar gain (effective use of the sun's energy for heating) and with high levels of insulation, to reduce the demand for space heating to zero. This is a fantastic example of what is possible, but what can the majority of us living in existing properties do? The three main options, in the order they should be approached, are: reduce demand for heat; improve the efficiency of energy use; and, if possible, use alternative, lower carbon energy supply.

REDUCE

A large amount of wasted energy can be avoided through a variety of simple and zero or low cost methods. For example, careful use of central heating controls can reduce energy consumption by a considerable amount. These include using thermostats for heating and hot water, adjusting radiator valves, and using timer options on the central heating. When you move house, ask the landlord or previous owners for tips and tricks with these. A 1°C reduction on the central heating thermostat can save as much as 10% on your heating bill!

Other options include having a shower instead of a bath (and if you do have a bath, how about spicing things up by sharing it!), closing curtains at dusk, draft proofing, turning off or down the radiators in unused rooms, and lowering the temperature of your washing machine. These free or very low cost methods can be applied regardless of whether you own or rent your home.

Insulating your home is an excellent method of reducing your energy needs, and is also a smart move financially. For example, the Energy Saving Trust says that insulating a loft typically costs £230, you can do it yourself, and it provides annual savings of £180 – £220, which means it pays for itself in about a year. Many energy supply companies offer reduced or free insulation for suitable households who receive either qualifying benefits or tax credits, so it's worth asking your supplier.

IMPROVE

Along with reducing the demand for heating energy, it makes sense to use energy supplies as effectively and efficiently as possible. Condensing boilers operate at significantly higher efficiencies than conventional boilers, so it's well worth considering a change if possible.

The Government has recently introduced free energy ratings for domestic boilers, and tell us that changing from a Low G rated boiler to an A rated boiler can save around £260 and two tonnes of CO^2 per year.

Turning your central heating thermostat down by just one degree can save as much as 10 per cent on your annual heating bill.

ALTERNATIVES

The third part of our 'energy hierarchy' is alternative forms of heat supply, such as those in the box (left). Currently many of the systems are financially unattractive, although of course you may wish to investigate your options further irrespective of this. Gaining access to the grants available from the Low Carbon Buildings Programme has been famously tough over the past year. However, this is partly due to high levels of consumer demand, which is encouraging and in the long term may lead to reduced prices if the funding system can be improved.

In combination with the suggested methods of reducing and improving energy use, these alternative technologies can lead to the ultimate in low-impact heating – low or even zero carbon supply.

NEXT MONTH: How to have a greener Christmas this year.

Green columnists Steve Allen (left) and Duncan Glendinning

LOW & ZERO CARBON HEATING

Solar Thermal

This works by absorbing the sun's heat, typically from a roof-mounted collector, to be stored ready to supply hot water. For it to be effective, you will need a south-east to south-west facing strong roof with minimal shading, plus in some cases space for an additional water cylinder. A typical 4m² collector system costs £2000 – £4500 and will save on average £40 or 350kg or CO^2 per year. UK average supply is all hot water during the summer and a third of the annual total supply.

Biomass

Stand-alone stoves provide space heating for a room and possibly water heating. Biomass boilers connect to the central heating and hot water systems. This option will cost £3000 for stand-alone room heaters and £5500 – £12000 for full systems, plus price of fuel. Typical savings are around £200 per year and eight tonnes of CO2.

Ground Source Heat Pumps

GHSP's absorb heat from the ground (11–12°C year round) and concentrates this to higher temperatures for space heating. Typically costs £8000 – £12000, plus the cost of a heat distribution system (preferably underfloor). On average saves £400 to £800 a year and between 2 – 8 tonnes of CO^2.

FURTHER INFORMATION

- The DirectGov service has plentiful and clear information, visit: www.direct.gov.uk
- The Energy Saving Trust has a very useful website and advice line – www.est.org.uk or tel: 0800 512 012.
- The Low Carbon Buildings Programme offers grants for low and zero carbon energy systems. Visit the website at: www.lowcarbonbuildings.org.uk or tel: 0800 915 0990.
- Regen SW, the renewable energy agency for the South West, has a directory of companies which is useful for finding installers of energy supply systems. Visit the website: www.regensw.co.uk or tel: 01392 494399.
- For a boiler check, contact Communities and Local Government at: www.communities.gov.uk/boilers or tel: 020 7944 4400.
- For local inspiration and advice, visit the CREATE Centre and Ecohome in Bristol. Tel: 0117 925 0505; create@bristol.gov.uk; CREATE Centre, Smeaton Road, Bristol.