



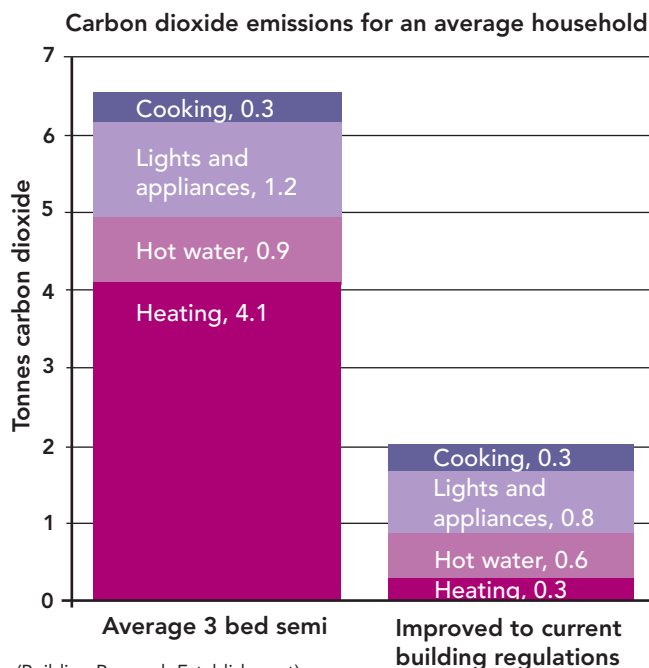
Saving energy in the home



Before considering renewable energy, it is important to ensure that energy is not being overused. By adopting a few simple home improvements energy use may be reduced significantly. You will benefit financially as you reduce your energy bills, and the environment will benefit from reduced emissions of the climate changing gas, carbon dioxide (CO₂). CO₂ is produced when fossil fuels are burnt to heat and light our homes. The emissions for an average household are six and a half tonnes but this can be reduced to two tonnes by using energy wisely in the home, and even further by installing renewable energy.

Where is energy used?

The costs and CO₂ emissions of energy depend on the fuel being used. Energy is used in the home for heating and hot water, lighting and appliances, and cooking. The chart opposite shows a typical breakdown of CO₂ emissions for an average 3 bed semi detached home which has been brought up to current building regulations.



The majority of fuel is used for heating and hot water. By reducing heat loss and controlling heating and hot water large financial and environmental savings can be made.

Building regulations – 2006

- Walls – cavity insulated or 100mm internal insulation or 150mm external insulation
- Lofts – 300mm insulation
- Floor – 200mm insulation
- Windows – double glazed super low E argon
- Doors – insulated
- Heat recovery ventilation
- Condensing boiler

Fuel consumption is measured in kWh (kilowatt hours), and for a typical gas heated semi detached house, annual figures are:

Space heating:	16,308 kWh
Lights and appliances:	2,992 kWh
Water heating	5,198 kWh
Cooking:	1,314 kWh
Total:	25, 542 kWh

Energy Units and prices

The price we pay for our energy is based on the power rating of an appliance (measured in watts) and the time it is used for. For instance if a 100 watt light bulb is used for ten hours the power used is 1000 watt hours. For ease we refer to 1000 watt hours as 1 kilowatt hour (kWh) and this is the standard unit you will see on your electricity bill. Your gas bill normally measures the number of cubic metres of gas you consume but also converts this figure into kWh.

Current unit prices are around 2.5 pence for each kWh of gas and 12p for each kWh of electric used.

Note - prices for gas and electricity change all the time, and some households can save as much as £200 per year by switching tariffs. It is worth checking that you are on the best tariff annually. Energywatch, the gas and electricity watchdog can offer advice.



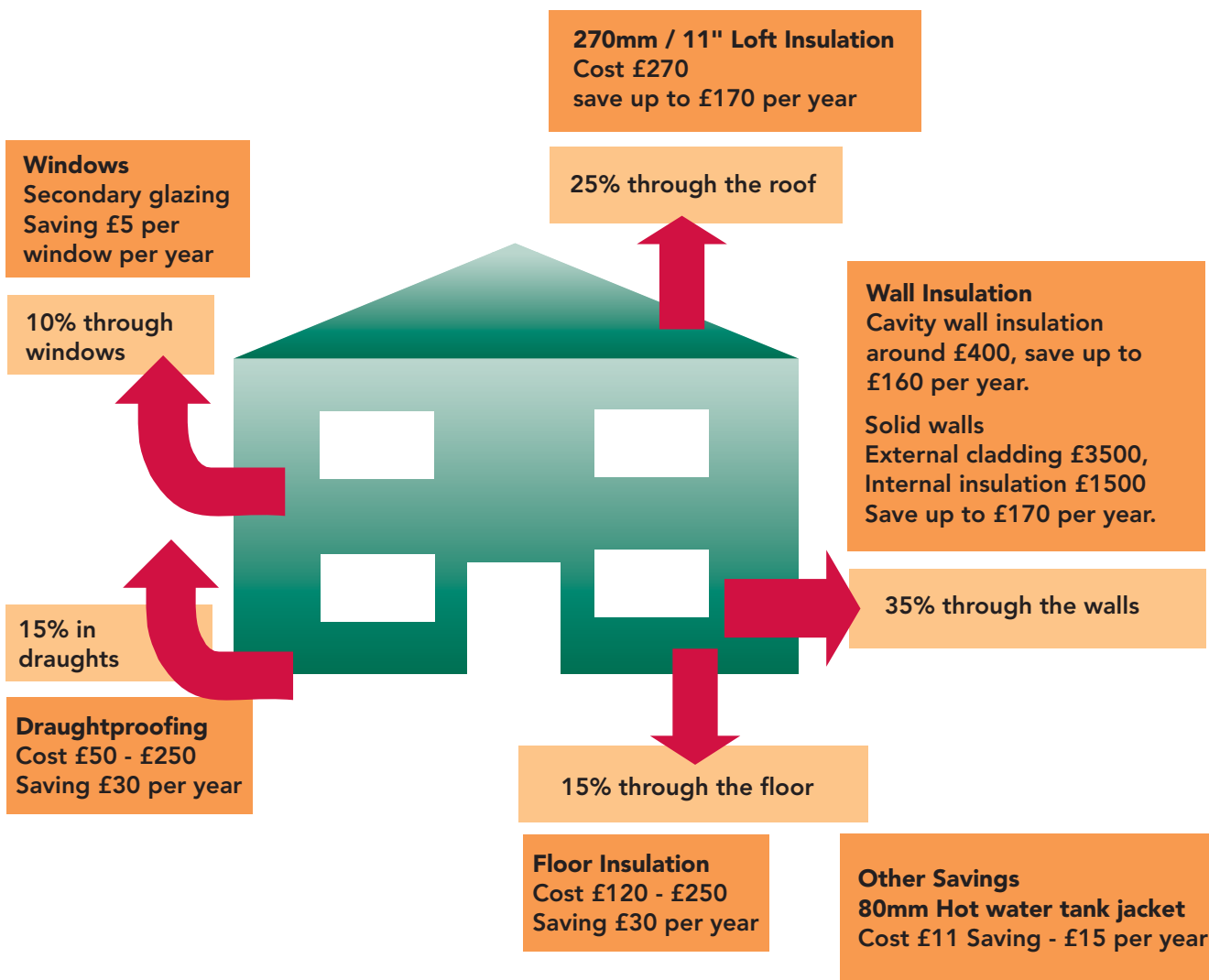
How do I reduce heat loss from my home?

Insulation is the key to reducing heat loss, it reduces the rate that heat moves from inside the home to outside. The diagram below shows the heat loss areas from a house and the recommended insulation. Cavity walls and lofts can be insulated easily. Lofts should have 270mm (11") of insulation. Grants and discounts are available for loft and cavity wall insulation and details are available from Dorset Energy Advice Centre (DEAC).

Thick carpets and insulated flooring help to reduce heat loss through floors, and secondary, double glazing and curtains through windows. Gaps around windows and doors, including letter boxes and key holes can be sealed with draught-proofing materials.

Heat loss and recommended insulation for a 3 bed semi with gas heating

(Energy Saving Trust).





How do I control my heating?

a) Wet central heating – i.e. boiler and radiators

All modern central heating systems now include the controls pictured below. It is recommended that older systems are brought up to this standard. These controls improve the comfort in your home as well as allowing the boiler to turn off when your home is adequately heated, saving energy. Your boiler thermostat should be set to 80°C or high in the winter, and to 65°C or low when used for hot water only. Upgrading your controls will cost around £300 and save up to £70 per year. Replacing a boiler that is 10 years old or more will save around one third on your fuel bills, all new gas and oil boilers must be condensing where possible.

b) Night storage heaters and dual immersion / Economy 7

Night storage heaters use cheaper electricity at night to heat heavy blocks which slowly let out the heat the following day.



(Robinson Willey Ltd)

Storage heater controls

Before you go to bed or leave the house turn down the output/discharge dial to the minimum. Set the charge/input dial depending on the weather; the colder it is outside the higher you will need to set it. The following day, gradually turn up the output/discharge dial as you need extra heat.



Timer / programmer

This turns the heating and hot water on and off automatically at times you set, saving you energy and money



(Horstmann Economy 7 Quartz control)

Immersion heater controls

Your hot water tank probably has two heaters, the one at the bottom of the tank, comes on at the cheaper night rate. Make sure the one at the top of the tank is turned off unless you need extra water, as this will cost much more to use.



Room thermostat

This switches your heating off once it has reached the required temperature. It should be set at between 18°C and 21°C



Hot water cylinder thermostat

If you have a hot water tank, set the thermostat to 60°C.



Thermostatic radiator valves (TRV)

In addition to the room thermostat, these allow you to control the temperature in each room. There should not be a TRV in the same room as the room thermostat.

(Energy Saving Trust)

How do I reduce energy used by lights and appliances?

The table below shows a general rule for understanding the amount of power used by different types of appliances, note the overlap between medium and high. Take a look at the appliances in your home to see how much power they use.

Power consumption	Appliance description	Examples
High (over 1kW)	Things that heat	Electric showers, heaters, kettles, toasters, tumble dryers, irons, hairdryers
Medium (500W to 2000kW)	Things that move	Drills, mixers, blenders, microwaves, vacuum cleaners
Low (less than 500W)	Things that get left on and have stand-by facilities	Lights, computers, TVs, videos, DVDs, game consoles, phone chargers



1. Turn it off!

Many appliances continue to use electricity when left on standby. The average household has 12 appliances either left on standby or on charge at any one time, at current electricity prices this costs £39 per year and emits 163 kg CO₂. (Energy Saving Trust)

2. Replace with energy efficient products

When buying new electrical goods, including light bulbs look for the energy rating label, and for the Energy Saving Recommended logo. If you are buying a product with a standby function or clock ask the supplier how much power it uses when on standby.

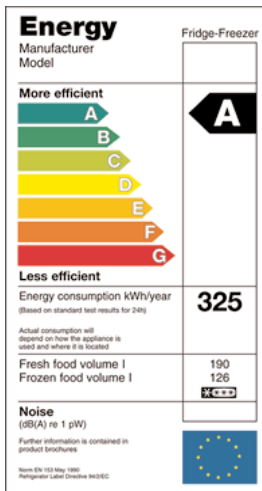


This label is applied to products which meet high energy efficiency standards.

Energy efficient products use less energy than conventional products, 80% in the case of lighting and 30% to 50% in the case of other appliances.

Switch to a green tariff

Electricity drawn from the national grid comes from a variety of sources including renewables such as wind and hydro, fossil fuels such as coal, oil and gas, and nuclear. Some electricity companies allow you to specify that you are buying “green” electricity. Although this will still be drawn from the grid, that company will either buy renewable electricity with your money or will invest your money into renewable energy projects such as new wind turbines. See the help and advice section of the Energywatch website for more details.



This label gives an energy rating between A and G, and an estimated kilowatt-hour rating per year (fridge /freezer) or per cycle (washing machines/ dishwashers)

More information

Dorset Energy Advice Centre

0800 512012

www.deac.co.uk

Energy Saving Trust case studies

0845 1207799

www.est.org.uk/myhome

Energywatch

0845 9060708

www.energywatch.org.uk

Renewable Energy Officer:

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www.dti.gov.uk/energy/sources/