

Renewable Energy

Renewable energy comes from sources deemed sustainable in that they are not substantially depleted by continuous use. Essentially these are the sun, the wind, water and the heat from the earth. Energy produced from plants also comes into this category. With the fluctuation in fuel prices and concerns about the reserves of some fossil fuels, investing in renewable energy is becoming an even wiser choice.

Before considering the installation of renewable energy it is important to ensure that the property is as energy efficient as it can be.

Solar Thermal Heating

Solar thermal panels provide hot water from the sun's energy and work even on an overcast day. On a south facing roof they should provide 100% of the hot water in summer. Overall an average of 50%, in some cases 70%, of your annual hot water needs should be met from the solar panels.

Small Scale Wind Energy

Wind energy makes a useful contribution to your energy requirements in the right location particularly if the property is off the national grid. Before considering a turbine you should determine the average wind speed for your area. To provide a significant amount of electricity the blades might need to be pole rather than roof mounted. For example, a pole mounted 2 metre blade could generate up to 500 kWh per annum (about 11% of the annual bill).

Green Electricity

This is produced from renewable sources and is provided in two ways:

Green Energy Tariff - electricity supplied is generated from a renewable source.

Fund Tariff - the energy supplier makes a contribution on the customer's behalf to bring about an environmental benefit.

Either contact your own electricity supplier or log on to websites such as: www.uswitch.com, www.electricity.org or a local one UKPower.co.uk

Ground Source Heat Pumps

These take heat from below the surface of the earth and use it to provide heat and hot water in houses. Heat pump technology uses pipes laid below ground through which water and anti-freeze circulate absorbing heat and circulating it through a heat exchanger to raise the temperature to approximately 55°C. Ground source heat pumps can use radiators or underfloor heating. Electricity is needed to run the compressor and pump but every 1kWh used provides between 3 and 4 kWh of heat.

Small Scale Biomass

Burning wood, wood chips or pellets is termed biomass. Burning wood gives off carbon dioxide but is considered carbon neutral because CO2 was absorbed when it was growing. Wood chips and pellets can be used in automatically fed systems which can either be stand-alone or used to heat radiators and a hot water cylinder.

Small Scale Hydroelectricity

Small scale hydroelectricity harnesses power from water to produce electricity. This can be any water course with a head of water that falls 2-3 metres and with a flow rate that is capable of turning a turbine. Small schemes are suitable to charge batteries, e.g. as a backup to a diesel generator, but they can be connected to the national grid in the same way as solar PV.

Grants

The Low Carbon Buildings Programme exists to help householders and communities install renewable technologies. Stipulations for obtaining the grant include using products and installers accredited to the scheme as well as ensuring the house has a range of energy efficiency measures. For more information about the Low Carbon Buildings Programme either log on to the website www.lowcarbonbuildings.org.uk or contact WEEAC on 0800 512012.

Some manufacturers of renewable technologies may have special promotions.



Generays Pic



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Contact us for impartial advice on:

Phone: 0800 512012

Website: www.weec.org

E-mail: advice@weec.org

Warwickshire, Worcestershire and Coventry Energy Efficiency Advice Centre (WEEAC) is the only independent Advice Centre dispensing impartial advice to householders in the area. This guide shows the width and depth of WEEAC's advice.

Established in 1998 as a charity and company limited by guarantee WEEAC is part funded by central government through the Energy Saving Trust and partly through work for local authorities. Its remit is to combat climate change by helping to reduce carbon dioxide emissions from homes, currently estimated at around 27% of the UK total, and to address issues of affordable warmth.

WEEAC is also involved in: presentations to community and business groups, community based projects work with schools (as funding allows) training groups in energy efficiency

The Energy Efficiency Advice Centre has collated this list of installers for your convenience.

It has been checked that these installers are members of the relevant trade bodies. However the Energy Efficiency Advice Centre cannot take responsibility for the installer's workmanship or any advice they may give. We have endeavoured to ensure that all installers on this list comply with the WEEAC Installer Network Code of Practice, and we have the power to deregister those that don't. The Energy Efficiency Advice Centre cannot monitor every individual job, or accept responsibility for the failings of an individual contractor, and is unable to deal with complaints regarding installation quality or material damage to the home as a result of installation work.

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Warwickshire Worcestershire & Coventry

Energy Efficiency

Advice Centre

Your guide to an

Energy Efficient Home

"Helping you save energy, money and the environment"



Working with
 energy saving trust™

Phone: 0800 512012

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Insulation Measures

Over 50% of your heat is lost through uninsulated walls and lofts. Insulating these will not only improve the comfort of your home and save money on fuel bills, but may help with problems caused by mould and condensation.



Wall Insulation

33% of your heat is lost through uninsulated walls, more if the house is solid wall construction.

There are various methods of insulating walls to reduce heat loss by up to 60%.

Cavity Wall Insulation

One of the most cost effective measures to install in houses built after 1935. Even if your house has thermal blocks as the inner skin it is worth installing insulation in the cavity as well. Contractors generally use mineral fibre or bonded beads. There is grant assistance for everyone, regardless of means, for this measure - see Grants and Subsidies.

Solid Wall Insulation

Solid wall insulation is applied either internally or externally and best scheduled when repairs or redecorating work is planned.

Internal insulation - generally plasterboard on timber battens filled with insulation between the battens. This reduces the size of the room. Alternatively there is a product that resembles thick wallpaper.

External insulation - a material is fixed to walls and covered with a protective, water repellent finish such as brick, tiles or render.

There are currently no grants for internal or external insulation for solid walls. This may change.



See information opposite about grants. There are no grants for DIY loft installations.

Loft Insulation

Uninsulated lofts are responsible for around 25% of heat loss. The current recommendation is for 250-270mm of insulation on the floor of the loft. You can insulate the loft yourself but you must wear the correct protective clothing. Using a contractor ensures that the loft is correctly ventilated. Pipework and tanks also must be correctly insulated.

Grants and subsidies

There are grants and subsidies available to homeowners and private tenants regardless of means. One call to WEEAC will give you full details of a number of local schemes and how you can benefit from them.

You can also contact your energy supplier or insulation contractor who will tell you about their scheme.

Homeowners and private tenants on certain means tested and disability benefits qualify for 100% grants for insulation and, in some cases, heating measures. These grants are either provided through contractors or via the government grant WarmFront. If you think you qualify for a 100% grant contact WEEAC to find out which grant is most suitable for you.

Heating

Building Regulations stipulate that newly installed central heating boilers must be A or B rated high efficiency boilers. Installers must also be either CORGI registered for gas or OFTEC for oil work.

Only A rated boilers carry the Energy Saving Recommended logo.

To enquire about forms of heating not covered in this Guide or for a copy of the WEEAC Guide for Energy Efficient Installers contact WEEAC on 0800 512012.

Gas and Oil Central Heating

High efficiency boilers are also known as condensing boilers, of which there are two main types:

Conventional boiler

This heats the water for your central heating and may also store hot water in a cylinder.

Combination boiler (Combi)

This provides central heating in the normal way but also acts as an instantaneous domestic water heater without the need for a separate hot water cylinder or a cold water tank.

Heating Controls

A high efficiency boiler will only achieve its optimum efficiency if adequate controls are fitted and these are now stipulated in the

Building Regulations. Controls will pay for themselves in under five years and can save as much as 17% on the average heating bill. Some of these controls are:

- **Room thermostat** reacts to the temperature of the air around it and sets the general temperature of the whole system.
- **Thermostatic Radiator Valves (TRVs)** enable you to control the temperature of each room separately.
- **Cylinder Thermostat** (on conventional systems) controls the temperature of hot water in the cylinder, thus the temperature of the hot water coming out of the taps. Typically should be set at a 60°C (140°F).



Electric Heating

Off Peak or Night Storage Heaters

These are insulated boxes which contain bricks with electric elements running through them. The elements heat the bricks which retain the warmth. The amount of heat released into the room is adjusted by dials on the box:

Input or Auto Set Control determines the amount of heat to be stored inside the heater.

Output Control dictates the rate the heat is released into the room.

Generally night storage heaters are fitted in downstairs or living rooms and panel heaters in upstairs or bedrooms. Panel heaters use on-peak electricity but should only be used for short periods.



Electric Boilers

There are two types, one uses mainly on-peak electricity to heat radiators and the other uses mainly off-peak electricity and stores the heat.

Storage boilers are like large, free standing storage heaters and heat up overnight. Inside there is a heat exchanger which heats the water for the radiator system. There is also an on-peak backup heater in case the stored heat runs out.

Hot water is normally provided by an immersion heater in a cylinder heated overnight using an off-peak tariff.

Direct boilers are quite small and will fit easily into the cylinder cupboard but use mainly on-peak electricity which means the running costs can be considerably greater. They work a bit like an electric shower heating the water instantly.

Energy Performance Certificates

Energy Performance Certificates give you information on the amount of energy used in a home in a similar way to the energy labels provided on kitchen and other appliances.

When buying a fridge you are told how much energy it will use to keep food cold and when buying a car you know how many miles per gallon it does. An EPC will tell you how much energy a house needs for comfort.

The certificate estimates how much it could cost each year for heating, lighting and hot water. It also indicates how much carbon dioxide your property will produce

and suggests things you can consider doing to make your home more energy efficient.

WEEAC has trained domestic energy assessors who can carry out energy rating surveys and provide Energy Performance Certificates. Call 01789 842898 for details and a quote.

Alternatively if you want some idea of the type of result your present house will score there is a free home energy survey on the internet at

www.energysavingtrust.org.uk/check . Complete the survey and download a report on your house.

Appliances and Lighting

Appliances

35% of the average energy bill is spent powering appliances, gadgets and computer products and is predicted to rise to 45% by 2020.

You can switch off the computer and router at the mains and unplug the phone charger without losing any settings.

Look for the Energy Saving Recommended logo which appears on a wide range of

products. It ensures the product meets or exceeds criteria set by the Energy Saving Trust and the government. Not every A rated appliance has earned the right to display it.

For more information contact WEEAC on 0800 512012 or via the website www.weeac.org



Lighting

Two of the most energy efficient forms of lighting are fluorescent and compact fluorescent lights (CFLs). CFLs (low energy lightbulbs) typically use 20% of the energy and last between 6 and 12,000 hours compared to a tungsten (GLS) or ordinary bulb (1,000 hours). Annual saving is between £7 and £10. Modern CFLs are available in a range of designs, even recessed downlighters. See the table below for comparable wattages.

GLS Bulb	CFL
40w	8w
60w	11w
100w	18-20w

Light from a CFL is radiated in a different way from a GLS bulb so it may be necessary to choose the next wattage up to achieve the same brightness.

If you can't find the style you like in your local shop log on to www.megamanUK.com.

Quick Tips

- 1 Turn down your room thermostat by 1°C and cut your heating bills by around 10%. Recommended temperature in living rooms is 21°C, in other rooms 18°C.
- 2 Set the thermostat on your hot water cylinder to 60°C (140°F) . Above that you risk being scalded, below that will increase the risk of the growth of the legionella bacteria.
- 3 Shelving over radiators and storage heaters deflect heat into the room and improve comfort.
- 4 If you have radiators under windows make sure your curtains don't cover them.
- 5 Make sure your hot water cylinder is properly lagged either with solid foam insulation or an 80mm lagging jacket. If you have an old thin lagging jacket fit a new one over the top of it.
- 6 If your central heating system also heats your hot water, lag the pipes between the boiler and the tank.