



A clear, impartial guide to reducing carbon in your home in Wales

rics.org/consumerguides





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Introduction

Many of our daily activities produce dangerous greenhouse gases that cause global warming. Carbon dioxide (or CO₂, often shortened to 'carbon') is the primary greenhouse gas emitted through human activities, accounting for around 81% of the UK's greenhouse gas emissions. Our homes account for nearly a third of that carbon, through energy used for activities like heating, lighting, washing and cooking.

The UK has now committed to a target of 'net-zero' carbon emissions by 2050 to help prevent potentially irreversible and severe climate change impacts. This means we should all try to reduce the carbon we produce and making energy efficiency improvements to our homes will make a substantial difference in combating climate change. The process of making these energy efficiency changes is often called 'retrofitting'.

Energy efficiency is also likely to be an increasingly important consideration as more of us spend a greater amount of time working from our homes.

The following guide has been written by RICS and offers guidance to homeowners considering retrofitting to make their home low carbon, and signposts other key sources of advice and financial assistance for making these changes. It is also useful for those looking to make their property greener before putting it on the market, or for those renting property looking to benefit from energy efficiency.

How RICS can help you

As the world's largest professional body for chartered surveyors, RICS offers clear, impartial, expert advice on the issues raised in this guide. RICS members can assist homeowners in a variety of ways, so whether you want an expert assessment and opinion on costs, an innovative design solution or a professional to manage a project for you, visit [Find a Surveyor](#) to find an RICS member in your area.

Using the services of RICS members offers confidence because:

- they give you clear, impartial and expert advice
- they are tightly regulated and have strict rules of conduct to protect you – including appropriate insurance
- they have to update their skills and knowledge throughout their careers, so you can rely on their expertise
- you are further protected by RICS' complaints service and access to independent redress.

Benefits of improving the energy efficiency of your home

Helping to fight climate change through reducing energy consumption and retrofitting to make your home low carbon can have many other benefits:

- saving money on energy bills
- improved health
- better comfort and control
- increasing the attractiveness of and future proofing your property
- increasing the potential for rental
- improved aesthetics.

There are also several schemes and government financial incentives available in the UK for households to improve the energy efficiency of their home and generate renewable energy, including:

- **Domestic Renewable Heat Incentive (RHI)***
- **Energy Companies Obligation (ECO) scheme***
- **Smart Meter Scheme***

Further details on each scheme can be found at [Simple Energy Advice](#).

* available for households in Great Britain only

Current legal requirements

The **Energy Act 2011** introduced the legally binding minimum energy efficiency standards (MEES) in the private rented sector for England and Wales. From April 2018 it became unlawful for a landlord to grant a new tenancy of a property below the minimum Energy Performance Certificate (EPC) rating 'E', unless an exemption had been registered. From 1 April 2020 this provision was extended to be unlawful to continue to let a below minimum EPC property.

Future-proofing your home



Minimum Energy Efficiency Standards

The UK government has set out its ambition to upgrade private rented homes in England and Wales to EPC rating 'C', and for as many homes as possible, where 'practical, cost-effective and affordable', to reach a minimum EPC rating of C by 2030.

The Energy Efficient Scotland: route map set out the Scottish government's ambition where all homes will achieve an EPC rating of C ('where technically feasible and cost effective') by 2040.

Green mortgages

The UK government announced a £5 million Green Home Finance Innovation Fund through its 2019 Green Finance Strategy, which was made available to the private sector to develop and pilot green home finance products such as green mortgages. These may give customers discounted mortgage rates once they have upgraded the energy rating of their home.

Home Survey Standard

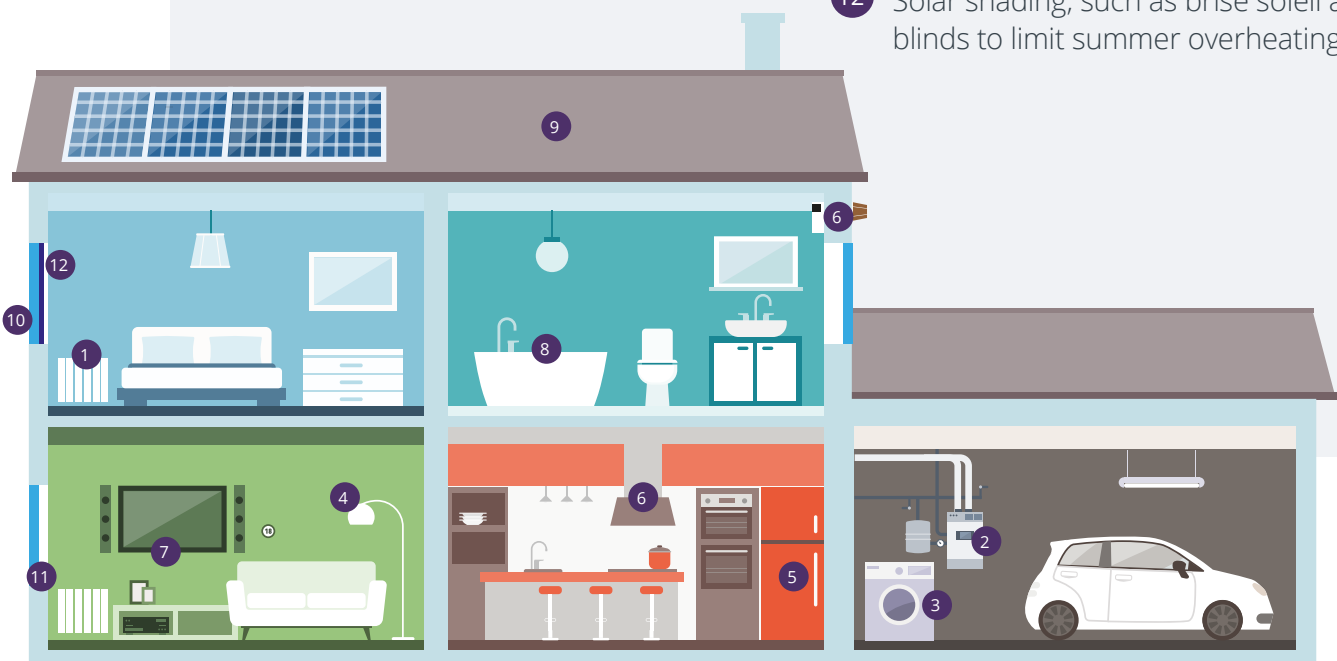
The **RICS Home Survey Standard** further emphasises the need for your surveyor to advise on energy matters. Through all home survey services, RICS members and firms are able to identify and advise on defects and deficiencies caused by inappropriate energy efficiency measures implemented on a home. RICS members will also review and state EPC ratings, while at level 2 and level 3 survey RICS members will check for discrepancies and advise on the appropriateness of any energy improvements recommended by the EPCs. Your surveyor may be able to offer more additional energy services so ensure you raise any queries and concerns as part of your engagement with the surveyor.

You should always get a home survey done prior to purchasing a property. Further information on the different home survey reports can be found on the [Find a Surveyor website](#).

What makes an energy efficient home

There are various elements in a home that contribute to energy efficiency, and all can be improved through retrofitting. Some of the main systems and equipment that can be upgraded together with their typical contributions to energy use are listed below.

- 1 The heating or cooling system – for example having an efficient boiler. This accounts for around 47% of home energy use.
 - 2 Water heating – around 14% of energy use.
 - 3 Washing and drying clothes – around 13% of energy use.
 - 4 Lighting – around 12% of energy use.
 - 5 Refrigeration – around 4% of energy use.
 - 6 Ventilation systems, to reduce water vapour.
 - 7 Other electrical appliances, such as the TV, oven, dishwashers, etc.
 - 8 Water fixtures, such as the bath, showers, sinks and WCs.
- There are also components of the fabric of the building that contribute to energy efficiency and can be upgraded:
- 9 Insulation – can be fitted in your roof, walls and floor. Insulation reduces heat loss in winter and heat gain in summer.
 - 10 Windows and doors, for example double or triple glazing.
 - 11 Air tightness, that helps to prevent warm air escaping.
 - 12 Solar shading, such as brise soleil and blinds to limit summer overheating.



Practical steps to making your home low carbon

Self-assessed energy audit

The starting point for reducing energy wasted in the home is to work out where you might be losing energy and what improvements might be suitable. This is often called an 'energy audit', and an energy audit carried out by a professional is the best way of understanding where you can make carbon reductions in your home. However, as a first step you can do a basic energy audit yourself, which can expose energy saving measures that are easy to implement and cost effective. Some ideas will save more, others less, but the cumulative savings can all add up.



Energy supplier and utility bills – start by providing meter readings where applicable and use your utility bills as a reference. You can then monitor the savings that any changes you make have caused.



Energy Performance Certificate (EPC) – if you have an EPC, this may include some recommendations to help you save energy. Check your EPC for items you can do yourself, such as those listed below.



Lighting – check your light bulbs and lamps, and consider replacing them with more energy efficient types.



Appliances – older appliances, like fridges and washing machines, often use more energy/water than modern types that are more efficient. Also, some appliances still use energy when on standby, and can be unplugged when not in use.



Maintenance – make sure your heating system is maintained once a year, and regularly check for leaks in pipework, etc.



Smart meters – these can help you keep track of the energy you use, allowing you to adapt your energy use and cut down on carbon. They also reduce the need for meter readings, making your bills more accurate. Energy suppliers can often fit these free of charge.



Draft stripping – check your windows and doors for draft strips. If they don't have draft strips fitted, you can buy and fit these to prevent drafts affecting the internal temperature and comfort. If they have them already, feel around the window for leaks and replace any worn or defective strips.



Air leakage – air can also leak where two materials meet. Skirting boards at wall and floor junctions for example, or around holes cut for water or sanitary pipes. These can be sealed with mastic.



Insulation – heat loss can be greatly decreased by adding more insulation. Check your loft for insulation and if there are no damp or condensation problems, it might be possible to fit more insulation in the loft.

The above measures are not applicable in every situation but can help you address the 'easy wins'. If you are not sure about fitting these measures or want to consider more invasive retrofits, the next step is to call a professional.

Professional energy audit

Having an energy audit carried out by a professional assessor will go into much more detail about energy wastage and is an important first step in working out the retrofit measures that are best suited to your home. Energy audits can vary in detail, complexity and cost, depending upon your requirements. For example, a professional could offer a basic audit based only on a walk around your home, or offer more detailed energy conservation solutions and options with potential costs and savings based on a more thorough inspection. The level of service you require should be discussed with the professional before their appointment.

The types of measures that can be installed depend upon the type, size and construction of your home, but could include:

- heating or cooling system upgrades
- energy and lighting management systems
- new lighting installations
- new windows and doors
- solar hot water heating or PV panels
- insulation upgrades to walls, floors, ceilings and hot water systems
- water management systems and water recycling.

Rented or shared accommodation

If you live in rented accommodation you are likely to be restricted on the energy savings measures you can implement by the terms of your tenancy agreement. You should still be able to carry out the tips in the section below but with your landlord's permission you may be able to carry out some of the DIY steps listed above too.

Energy efficiency is a must for landlords, who have a legal requirement to be energy efficient. In England and Wales, F- and G-rated properties are illegal and the government is planning for a future requirement to secure a C-rated property as a minimum.

The first step is to talk to your landlord to discuss the potential and benefits of making your home more energy efficient. You could carry out the self assessed energy audit above beforehand to have an idea about the types of steps that could be made.

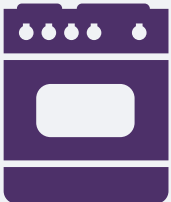
Tips on sustainability in the home

The following low or no cost tips and behavioural steps to saving energy can all make a difference in saving carbon and money.



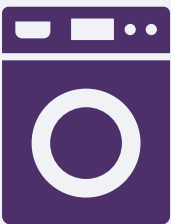
Heating and lighting

- Turn off heating or air conditioning when not required. Adjust thermostats to 18°C or 19°C.
- If you can adjust the temperature of your hot water, set it to 60°C.
- If you have them fitted, use thermostatic radiator control valves to turn off radiators in unoccupied rooms.
- Turn off lights when not in use.
- Change lightbulbs to energy efficient types, or use task lighting where possible, instead of brightly lighting a whole room.



Appliances/cooking

- Fill the kettle only to the amount of water you need when boiling water.
- Put lids on pots when cooking.
- Turn on the dishwasher only when full, and use economy mode if possible so dishes are air dried.
- Don't keep electronics (including printers, computers, screens, etc.) in standby mode as they still consume energy.



Laundry/bathroom

- Air dry clothes if possible.
- Lower the temperature of the washing machine to 30°C.
- Use half load settings on the washing machine where possible, or wait until the washing machine is full.
- Shower instead of taking baths.



Waste

- Track what you buy and what you actually use. Reducing your daily waste is key in ensuring waste is managed effectively.
- Reuse non-recyclable waste as much as possible, i.e single use plastics and adopt recyclable alternatives, e.g. carry a water bottle with you to avoid using disposable plastic bottles, use a water filter system to reduce use of plastic bottles/jugs.
- Reduce products that use excessive packaging.
- Reuse everything you can, buy re-usable products, repair and upcycle existing, worn out products.
- Separate recyclable material.
- Compost household and garden waste.
- Reduce paper as much as you can, choosing paperless for all your bills, statements, documents, etc.
- Repair and reuse furniture for as long as possible. Gift items you no longer need to friends/family or charity.

Advice and schemes in Wales

The Welsh government and [Rent Smart Wales](#) have various support and advice services available for improving the energy performance within homes.

The Warm Homes Fund

Rent Smart Wales in partnership with Welsh Local authorities have secured Warm Homes Funding to offer a helping hand to landlords and tenants to install central heating (gas boiler, radiators and associated work) in rental properties.

The Fund has been established by National Grid and is administered by a community interest company called Affordable Warmth Solutions. A dwelling without central heating can benefit from receiving a grant. The scheme will be operated on a first-come, first-served basis and applications will close once all the funds have been allocated.

You can find more information on the [Rent Smart Wales website](#).

Arbed am Byth

Arbed is a Welsh government scheme aiming to install appropriate energy efficiency measures in properties across Wales and to help people who are struggling to effectively heat their home.

Arbed will work with local authorities and the Energy Saving Trust to establish areas in Wales that would benefit most from the scheme. After receiving applications to the scheme, Arbed am Byth manage the whole customer journey from the management and acceptance of application, through to inspecting the delivered improvements. To date, almost 2,000 properties have benefited from energy performance improvement works, including the installation of solar PV, water-efficient taps and new heating systems.

To learn more, and see if you are eligible for support, visit the [Arbed am Byth website](#).

NEST

The Nest scheme offers a range of free, impartial advice and, if you are eligible, a package of free home energy efficiency improvements.

NEST advice and services are available to a range of tenures and can help save energy usage and costs, advise on energy and water tariffs, and identify if you are entitled to any benefits to boost your income. You could be eligible for free home energy efficiency improvements if:

- you own or privately rent your home (not from a local authority or housing association)
- your home is energy inefficient and expensive to heat
- you or someone you live with receives a means tested benefit OR has a chronic respiratory, circulatory or mental health condition and an income below the defined thresholds.

To learn more, visit the [NEST website](#).

Optimised Retrofit

Optimised Retrofit is a collaboration between 68 industry partners including 26 social housing providers to explore the technology, skills and pathway needed to create more energy-efficient homes in Wales.

More than 1,700 social homes in Wales will benefit from the programme and go through the retrofitting pathway.

The pathfinder programme uses a combination of building fabric improvements, low and zero-carbon technologies (such as solar panels, battery storage and heat pumps), and intelligent ongoing operational controls, to plan out how to take each home to its lowest achievable carbon footprint.

Each pathfinder home will then take the first step on its preferred Pathway to Zero as part of the project. The project will see a wide range of types of homes being retrofitted with a large selection of first measures, to ensure the digital tools being developed are effective in tackling the diverse range of property types found across Wales.

To learn more about the collaboration and how to get involved, visit the [Optimised Retrofit website](#).



Useful links

Here are some useful website addresses:

RICS

www.rics.org

Which?

www.which.co.uk

Carbon Trust

www.carbontrust.com

Citizens Advice

www.citizensadvice.org.uk/housing/repairs-in-rented-housing

Energy Saving Trust

www.energysavingtrust.org.uk

Simple Energy Advice

www.simpleenergyadvice.org.uk

Good Homes Alliance

www.goodhome.org.uk

Free RICS guides

RICS has a range of free guides available for the following property issues.

Development issues

Compulsory purchase

Home extensions

Home hazards

Fire safety

Dilapidations

Flooding

Subsidence

Neighbour issues

Boundary disputes

Party walls

Right to light

Residential

Buying a home

Buying and selling art and antiques at auction

Home surveys

Letting a property

Property auctions

Renting a property

Selling a home

Further information

We hope this guide is useful to you. If you'd like to know more about improving your home, or how RICS can help, please contact us.

Visit our website

[rics.org/consumerguides](https://www.rics.org/consumerguides)

Alternatively:

- email contactrics@rics.org
- call the **RICS Contact Centre 02476 868 555**

Consumer helplines

RICS offers telephone helplines giving you 30 minutes of free advice on:

- Boundary disputes
- Party walls
- Compulsory purchase.

Just call **02476 868 555** and you will be put in touch with an RICS member local to you, willing to provide a free 30 minute initial consultation.

Lines are open 08:30 –17:30 (GMT), Monday to Friday.

Find a Surveyor

Contact us if you want to find independent, impartial advice from a qualified professional with good local knowledge.

Look out for firms that are 'Regulated by RICS'. Estate agents and surveying firms that are regulated by RICS are easy to spot as they use 'Regulated by RICS' on their stationery and promotional material.

To find an RICS firm in your area visit [ricsfirms.com](https://www.ricsfirms.com) alternatively email contactrics@rics.org or call the **RICS Contact Centre 02476 868 555**

Delivering confidence

We are RICS. Everything we do is designed to effect positive change in the built and natural environments. Through our respected global standards, leading professional progression and our trusted data and insight, we promote and enforce the highest professional standards in the development and management of land, real estate, construction and infrastructure. Our work with others provides a foundation for confident markets, pioneers better places to live and work and is a force for positive social impact.

Americas, Europe, Middle East & Africa
aemea@rics.org

Asia Pacific
apac@rics.org

United Kingdom & Ireland
contactrics@rics.org



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