



TRUSTMARK
Government Endorsed Quality

A guide to **Retrofitting** your home

Making your home warmer
and reducing your
energy costs



The Government has set a target for the UK to reach net zero in carbon emissions by 2050 and reduce emissions by 78% by 2035.

Our homes use 35% of all the energy in the UK and emit 20% of the carbon dioxide emissions.

Introduction

If you're reading this, there's a very good chance that you're thinking about carrying out improvements to your home and making it more energy efficient, greener, more comfortable, healthier and lowering the emissions produced. And it couldn't be more timely.

We are all aware of the need to play our part in reducing greenhouse gas emissions and reduce the amount of energy and resources we use. The Government has set a target for the UK to reach net zero in carbon emissions by 2050 and reduce emissions by 78% by 2035. Our homes use 35% of all the energy in the UK and emit 20% of the carbon dioxide emissions¹ so if we are going to achieve those targets and impact climate change, household emissions need to be addressed.

With around 28 million homes in the UK, and the average Energy Performance Certificate (EPC) rating of D or below², there is a great opportunity to raise the standard of energy performance in our homes. That is where Retrofit comes in.

This booklet aims to explain what Retrofit is, why it's needed and how it benefits homeowners. It guides you through how the process works, the quality standards that should be met when carrying out these works and the competent, professional people who are involved.

Getting your project completed to high quality standards is so important. TrustMark is the only Government Endorsed Quality scheme covering work a homeowner chooses to have carried out in or around their home, whether that's installing energy efficiency measures or landscaping a garden.

We're passionate about quality, raising standards and ensuring consumers have appropriate protection in place and we work closely with our Scheme Providers and Registered Businesses to help make this happen. By choosing a TrustMark Registered Business to carry out your retrofit works, you have the reassurance of their commitment to high standards of technical competence, customer service and trading practices, all underpinned by our Customer Charter, the Code of Conduct and the Framework Operating Requirements.

I hope you find this useful,

Simon Ayers,
CEO TrustMark

Energy Efficiency

Before we look at Retrofit and what that can mean for our homes and energy consumption, it's important to consider how we can use energy more efficiently in our everyday lives. Great things can often be achieved by making the smallest changes.

Our daily use of energy has become, for many, an automatic process without consciously thinking about what we're using and how we're using it. Consider a 'normal' day. Most people get up in a warm, centrally heated house in winter and perhaps put the lights on. There's hot water for a shower; the razor and toothbrush are charged ready for use and the kettle's boiling ready for that morning tea or coffee. Clothes may be pulled from the tumble dryer and the TV's showing the morning news. With an average daily energy use of 8-10 kilowatt hours (kWh) of electricity and 33-38kWh of gas³ per household, it's likely that a third has already been used. That's before we consider use later in the day for cooking, washing, drying, bathing or watching television.

While the bulk of domestic energy is used to provide heating and hot water, our lighting systems and all the appliances we use add up too. The table below shows the typical amount of energy that some of the appliances we have at home use per hour or, where applicable, for 10 minutes.

Appliance	Average power rating (watts)	Cost per hour (pence)	Cost per 10 mins (pence)
Kettle	3,000	1.02p	17p
Tumble dryer	2,000 - 3,000	68p - 1.02p	11p - 17p
Oven	2,000 - 2,200	68p - 75p	11p - 12.5p
Washing machine	1,200 - 3,000	41p - 1.02p	7p - 17p
Dishwasher	1,050 - 1,500	36p - 51p	6p - 8.5p
Iron	1,000 - 1,800	34p - 61p	6p - 10p
Toaster	800 - 1,500	27p - 51p	4.5p - 8.5p
Microwave	600 - 1,500	20p - 51p	3p - 8.5p
Fridge/freezer	200 - 400	7p - 14p	-
Plasma TV	280 - 450	10p - 15p	-
LCD TV	125 - 200	4p - 16p	-

¹ From CLC National Retrofit Strategy V2

² <https://www.ons.gov.uk/peoplepopulationandcommunity/housing/articles/energyefficiencyofhousinginenglandandwales/2020-09-23>

³ [Switch-plan.co.uk](https://www.switch-plan.co.uk). Taken from Ofgem average household annual usage 3760 kWh electricity and 8-17,000kWh gas. Figures calculated using 34p/kWh as electricity average price for DD customer 1st October 2022 - March 2023 as per [www.gov.uk](https://www.gov.uk/government/publications/energy-bills-support/energy-bills-support-factsheet-8-september-2022) (<https://www.gov.uk/government/publications/energy-bills-support/energy-bills-support-factsheet-8-september-2022>).

Keep washes in your washing machine to 30 degrees when you can.

Ovens use a considerable amount of energy, so when you put the oven on, try to make sure it's used to full capacity.

Consider SMART controls for your heating and hot water.

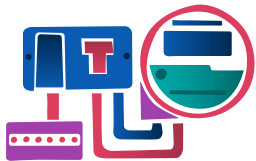
When you need to replace an electrical appliance, look for the highest energy efficiency rating you can afford to buy.

Energy saving tips

By understanding the amount and how we use energy, we can all make simple and often low or no-cost changes to reduce our energy consumption before we consider investing in other measures.

Here's a few things we can do to save energy and reduce our bills and our carbon footprint:

Electrics

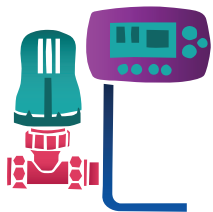


- Only fill your kettle with enough water for what you need. Boiling enough water for one cup will cost around 1p worth of energy
- When you need to replace an electrical appliance, look for the highest energy efficiency rating you can afford to buy. The most efficient rating is A through to G at the bottom



- Switch off things like TVs and other electrics at the plug rather than leaving them in 'standby' - this could save you around £55 per year
- Switch to LED lightbulbs where practicable
- Timers for lights allow you to control how long lights are on and ensures they are turned off! They're also good for security

Heating

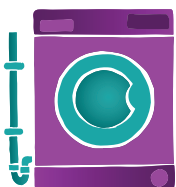


- Check that your heating thermostat is located in the right position - not too close to a radiator or cold spot
- Install thermostatic radiator valves to radiators around the property. These allow you to control the temperature in each room, rather than have rooms with very little use being heated higher than necessary



- Consider SMART controls for your heating and hot water
- You could turn your room thermostat down by 1 degree (unless you or anyone in your household is elderly, not very mobile or under the age of 2)
- Where hot water is provided by central heating, then showering typically uses less hot water than running a bath and will cost less, but if you have an electric shower try reducing your shower time. An 8.5kW shower will use around 48p for just 10 minutes of use

Washing



- Keep washes in your washing machine to 30 degrees when you can and wait until you have a full load so you reduce the amount of use
- Wait until the dishwasher is full before running it and use an ECO setting if you have one
- Dry clothes outdoors wherever possible and keep tumble-drying to a minimum

Cooking



- The darker your toast, the more energy you'll use; learn to love light!
- Consider using a microwave where appropriate (checking the packaging) as they use far less energy and can save time
- Ovens use a considerable amount of energy, so when you put the oven on, try to make sure it's used to full capacity. It may be a good opportunity to batch cook meals and then freeze the extra portions, saving you time and money elsewhere

Energy Performance Certificates

What is an Energy Performance Certificate?

An Energy Performance Certificate, generally referred to as an EPC, tells you how energy efficient your property is and gives it a rating from A (very efficient) to G (inefficient). It provides an estimate of the energy costs to heat and light your home, and what its carbon dioxide emissions are likely to be.

An EPC also includes information on what the energy efficiency rating could be if you made the improvements that are recommended. It also shows what these are typically likely to cost and what the savings are likely to be.

A physical survey of the property needs to be carried out by an accredited Domestic Energy Assessor in order to obtain the information.

A new format EPC was introduced in September, 2020 by the Government, along with a new register - the 'Energy Performance of Buildings Central Register' - where all EPCs are kept and which is operated by The Department of Levelling Up, Housing and Communities (DLUHC). This has consolidated all EPC information for England, Wales and Northern Ireland onto one register and includes domestic and non-domestic properties. Scotland has a separate system and register. EPCs are valid for 10 years from the date of issue, so if your property has an existing EPC which was assessed before September 2020, it may look a little different to the latest version. The new format has seven sections which clearly lay out the information.

They are:

1. Energy Performance Rating for the property

This area shows a coloured graph with the property's current and potential energy efficiency rating (A -G). Properties are also given a score. The higher this number, the more energy efficient your property is and the cheaper your fuel bills are likely to be. The average energy rating and score for a property in England and Wales is D (60).

2. Breakdown of property's energy performance

This breakdown provides a description of different components of the property and shows its energy performance as Very Poor, Poor, Average, Good or Very Good.

The following are typically included:

- Total floor area
- Property type
- Walls
- Secondary heating
- Hot water
- Main heating

Other features may be included if they exist in the particular property.

3. Environmental impact for this property

This section provides the estimated carbon dioxide production for the property. It shows the UK average household production - 6 tonnes CO₂ annually - so there is a comparison for you to see how well or not your property measures up against the average.

It also shows how much you could reduce the CO₂ production by if you applied the recommendations.

4. How to improve this property's energy performance

This section gives the energy saving recommendations for the property, typical installation costs of the measures and typical yearly cost-saving against each one.

It also indicates the potential rating change, for each individual measure and if all measures are carried out. This enables you to consider which measures may be more cost-effective for you and in which order to implement them.

5. Estimated energy use and potential savings

The estimated cost and savings show how much the average household would spend in this property for heating, lighting and hot water over a year. It is not based on how energy is used by the people living at the property. The estimated saving is based on making all of the recommendations on how to improve this property's energy performance.

It also provides a breakdown of the energy used for heating and hot water in the property.

6. Contacting the assessor and accreditation scheme

Contact details for both the qualified energy assessor who carried out the assessment for the EPC and the accreditation scheme they belong to are given here. If you have any queries or complaints, you can contact the assessor directly to resolve any issues and if you need to escalate an issue, you can contact the accreditation scheme.

7. Other certificates for this property

If any other certificates have been previously issued for the property, the details should be provided here.

If you have a rental property, you must order an EPC for potential buyers and tenants before you market your property for sale or rent.

Costs vary and depend on type and size of property but usually start from around £60.

Why do I need an EPC?

EPCs are a legal requirement whenever a property is built, sold or rented.

If you are selling your property, your estate agent should be able to help you obtain an EPC if there isn't a valid one in existence or you can find an accredited assessor in your area (England, Wales and Northern Ireland) at www.gov.uk/get-new-energy-certificate.

As Scotland has a different system, you can find an assessor here: www.scottishepcregister.org.uk

If you have a rental property, you must order an EPC for potential buyers and tenants before you market your property for sale or rent. In Scotland, you must display the EPC somewhere in the property, for example in the meter cupboard or next to the boiler.

How do I get one and how much does it cost?

You'll need to find a qualified, accredited assessor www.gov.uk/get-new-energy-certificate who will assess your property and produce the certificate.

Costs vary and depend on type and size of property but usually start from around £60. It's worth getting a few quotes to compare before you decide on who to use.

So, what is Retrofit?

Retrofit is simply the process of making changes to existing buildings so that energy consumption and emissions are reduced.

It should also bring the benefit of a more comfortable and healthier home. This can include a number of measures, for example installing loft or wall insulation, double or triple glazing or replacing an existing gas boiler with a ground or air heat-source pump. Sometimes, another home improvement such as a new kitchen or bathroom being installed or having a loft extension can prompt the opportunity to think about carrying out other energy-reducing improvements at the same time.

There are two approaches that you'll hear about when people refer to Retrofit : "Fabric First" and "Whole House".

Fabric First

"Fabric First" is a simple, straightforward approach aimed at upgrading the fabric (e.g. walls, lofts, floors) of the building first, together with making sure there is the right amount of ventilation, before tackling more complex things such as heating, hot water, or lighting systems. This can be done by improving insulation around the building and reducing heat loss through any 'leaky' parts of the house, for example, windows, doors and other gaps. However, care still has to be taken not to cause damp or mould which can be caused due to lack of ventilation, so plugging every nook and cranny isn't necessarily the right thing to do.

Whole House

"Whole House" is where an assessment is carried out by a qualified Retrofit Professional on the whole house - the fabric (e.g. walls, lofts), services and systems (heating, hot water and lighting) and the energy used. Recognising that every home is different, it also takes into account how the occupants live in and use their home and if there any special circumstances affecting the dwelling. A plan is then produced which is usually split into phases. Each phase includes estimated costs of work that can be undertaken, estimated energy savings for each set of measures and the amount of carbon reduction that can be made in each phase. It's then up to the homeowner to decide which measures are undertaken and when. The plan is developed and managed by a qualified and accredited Retrofit Professional.

Improving the building fabric to minimise heat losses and maximise air tightness is sensible because insulation has a relatively low cost, a long-life and should only be required once before 2050 for most properties. Services and systems, by contrast, have a shorter lifespan and will almost certainly need to be replaced every 10-15 years.



How does **Retrofit** work?

A typical project would include the following steps:

Step 1 - Assess the property

A qualified Retrofit Professional will visit your property to find out everything they need to know about your existing energy usage and the building itself.



They'll talk to you about the type of improvements you want to carry out and what you're looking to achieve.



- They'll also want to understand how you and any other occupants use your home.

Step 2 - Prepare a Whole House plan

This is one of the most important parts of the process. A report will be produced that will show you what you can do to reduce your energy bills and emissions and make your home more comfortable and healthier to live in.

It is a bespoke plan and design for the whole of your home, detailing all the measures you could take to make your home as energy efficient as possible.



It will also include recommendations on which measures are the most cost-effective, have the most impact and in which order to carry them out.

- The most important thing about the plan is that it does not have to all be done at once, but it identifies measures that can be carried out in different stages to suit your budget, lifestyle and what you want to achieve.

Step 3 - Agree the plan and gather quotes

The Retrofit Professional will agree the plan with you, explaining anything you're not sure about and clarifying any details.



This may cover just one phase of the works, as explained above, if that's what you choose to carry out.

The Retrofit Professional can also oversee the project and they'll be able to explain how they will work with you until it is completed.

If you're happy to proceed, they can then gather quotes for the works from approved retrofit contractors so you can be sure that work will be carried out to the right quality standards.

- It is always your decision who you appoint to carry out the works.



Step 4 - Sign contracts and start work



Once you've decided on which contractor you want to carry out the works, it's always advisable to have a contract in place so that you are both clear on what is agreed and you are protected.

Once signed, works can commence. Your Retrofit Professional can manage the project from start to finish, monitoring work along the way. They are responsible for protecting your interests.



- If you already have a project manager for example, an architect or surveyor that is overseeing the works, you may prefer that they do this for you.

Step 5 - Evaluation and completion

When the work is completed, the Retrofit Professional or your project manager should check that work has been delivered as expected and completed to all the required quality standards.



Our homes use 35% of all the energy used in the UK and emit 20% of the carbon dioxide emissions.

Measures that help to reduce the amount of energy used not only help to reduce emissions but also lower household energy bills.

A new, overarching British Standard for energy efficiency retrofit - PAS 2035 - was introduced in 2019.

It is strongly recommended that you appoint trained, professional people who are experienced and skilled in the appropriate areas.

Why is it important and what are the benefits to me?

There are three main reasons why retrofitting our homes is so important.

Firstly, Climate Change and the UK Government's target of the UK reaching net zero by 2050. We are all aware of the need to reduce our energy consumption and the emissions we produce. Our homes use 35% of all the energy used in the UK and emit 20% of the carbon dioxide emissions, so reducing these wherever possible is paramount.

Secondly, energy costs are rising and are likely to continue to do so. Measures that help to reduce the amount of energy used not only help to reduce emissions but also lower household energy bills.

One example is installing 270mm insulation in an uninsulated loft will save on average each year*:

- £590 in a 4 bed detached house
- £355 in a 3 bed semi-detached
- £330 in a 3 bed mid-terrace
- £590 in a detached bungalow

*All figures from Energy Saving Trust using October 2022 energy prices.

Thirdly, introducing these measures can help make our homes warmer, more comfortable and healthier to live in. Studies and reports from numerous organisations including the World Health Organisation, the NHS, Universities and All Party Parliamentary Groups all highlight the impact of cold, damp and mould and poor indoor air quality on health.

Who can carry out the work?

It's always advisable to appoint people who are qualified, skilled and competent to carry out any assessments and work in and around your home.

All trades should work to high standards of quality and many are members of professional trade associations or accreditation bodies. Businesses registered with TrustMark are not only validated by their Scheme Provider(s) but also commit to adhering to high standards of technical competence, customer service and trading practices, set out in our Customer Charter, Code of Conduct and the Framework Operating Requirements. They are also required to have financial protection mechanisms in place for their customers' protection. This applies to any works a TrustMark Registered Business carries out, whether that's energy efficiency improvements, electrical works, landscaping or cleaning carpets.

A new, overarching British Standard for energy efficiency retrofit - PAS 2035 - was introduced in 2019, which provides a framework for delivering domestic retrofit projects in the UK. It is designed to overcome the previous issues of poor design and quality and energy efficiency measures being introduced in isolation, often causing more problems than they solved.

New roles have also been created to work within and apply this framework, they include: Retrofit Assessor, Retrofit Coordinator, Retrofit Designer and Retrofit Evaluator. People working in these roles have to be trained and are qualified to required standards to ensure a quality outcome.

If you are funding your own works with no public funding then whilst it is recommended, it is not mandatory for you to use these individuals. It is strongly recommended however, that you appoint trained, professional people who are experienced and competent in the appropriate areas. This will help to ensure that works are carried out to high quality standards and you achieve your desired outcome.

If energy efficiency improvements on your home are being funded by any government, local authority or energy supplier schemes, then mandatory requirements are in place as to who should be involved with and carrying out the works.

You can use TrustMark's 'find a trader' search facility to find Retrofit Professionals and contractors.

Using a TrustMark Registered Business gives you the most comprehensive level of protection available when getting work done in and around your home.

Ensure the contractor you appoint provides you with financial protection and guarantees.

Minimum two-year product warranties and workmanship.

How do I find the right person?

You can use TrustMark's 'find a trader' search facility to find Retrofit Professionals and contractors.

These are all competent professionals who commit to adhering to the required high levels of technical competence, customer service and trading practices.

How can I be sure about the quality?

Getting the right installation is vital to achieving the right outcomes and you want to be sure that any work carried out is of high quality, well-thought through and properly planned. Quality Assurance throughout the project is fundamental and is where TrustMark can help. By using a TrustMark registered Retrofit Professional, you have the reassurance that they are skilled, competent and work to the high standards required.

What guarantees and insurance do I have?

Using a TrustMark Registered Business gives you the most comprehensive level of protection available when getting work done in and around your home. Not only do you have the built-in assurance that the tradesperson you engage will work to the standards and requirements of the TrustMark Code of Conduct and Customer Charter, you also have the added security from the financial protections which are required to be in place.

These include:

TrustMark Financial Protection Panel

The Financial Protection Panel (FPP) was formed to make sure there were no gaps in the provision of consumer protection when using a TrustMark Registered Business.

Insurance against the tradesperson going out of business

This can vary between businesses but as a minimum must cover:

- Prepayments or deposits
- 2-year post completion of workmanship
- Rectification of defects or major damage
- Non-compliance with Building Regulations

Minimum 2-year product warranties and workmanship

Works not funded by any government programme must still include a minimum of a two-year finance protection mechanism for workmanship and product which meets the TrustMark financial protection requirements.

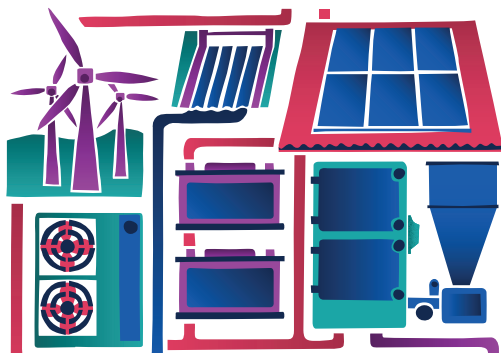
Energy Company Obligation and other Government programmes

For installations carried out under Energy Company Obligation (ECO) or other Government programmes, it is a mandatory requirement for the business to provide an 'approved' finance protection mechanism.

Minimum 25-year guarantees are mandatory for certain Energy Efficiency Measures under ECO or funded through certain government programmes

These include:

- External wall insulation
- Internal wall insulation
- Cavity wall insulation
- Hybrid wall insulation
- Park Home insulation
- Room-in-loft insulation
- Underfloor insulation



Businesses are monitored by their Scheme Provider and their work and practices are checked to make sure they are maintaining the high standards required.

Funding for some of the energy saving measures may be available from government schemes running at the time.

What happens if things go wrong?

As part of the Customer Charter and the Code of Conduct, every TrustMark Registered Business must have a clear, fair and transparent complaints process.

Businesses are monitored by their Scheme Provider and their work and practices are checked to make sure they are maintaining the high standards required, but occasionally things can go wrong. Most things can be resolved quickly and easily with the business directly but if this is not possible, further avenues are open to help resolve a problem, including ultimately, the Disputes Resolution Ombudsman, of which TrustMark is a member.

 If you use a business who is not TrustMark Registered, ask to see their credentials, any guarantees and financial protection they have in place before you agree to any works or make any payments.

What will it cost?

Costs will vary according to the size and scale of the project and complexity of the works required but will be proportionate to the plan created for your home.

Can I get help to fund this?

Funding for some of the energy saving measures may be available from government schemes running at the time, your energy supplier under the Energy Company Obligation (ECO) or local schemes run by your local authority or other organisations.

These schemes are aimed at improving the energy efficiency rating of the most inefficient housing and tackling fuel poverty. Some schemes are open to qualifying homeowners and private renters and other schemes cover social housing. Some are designed specifically for properties which are off gas-grid i.e. not served by mains gas.

The Energy Company Obligation (ECO) is a government energy efficiency scheme in Great Britain to help reduce carbon emissions and tackle fuel poverty.

Measures that schemes may cover include:

- Loft insulation
- Under floor insulation
- Wall insulation
- Solar voltaic
- Other low carbon technologies e.g. ground source or air source heat pumps

Eligibility criteria applies to all grants and schemes so you will need to check whether you are eligible for funding from specific schemes with the relevant authority or organisation.

There are also national grants which can help you pay your energy bills if you're over 65 or on a low income such as the Winter Fuel Payment, Warm Homes Discount and the Cold Weather Payment.

With schemes having a variety of names and trying to work out whether you qualify for funding, it can be confusing and sometimes difficult to identify which ones are most applicable for your property and circumstances.

Organisations who may be able to help.

To help, we've listed below organisations who may be able to help you find more information.

Citizen's Advice Bureau

www.citizensadvice.org.uk

England: 0808 223 1133

Wales: 0800 702 2020

Simply Energy Advice

www.simpleenergyadvice.org.uk

0800 444 202

Energy Saving Trust

www.energysavingtrust.org.uk

TrustMark

www.trustmark.org.uk

Home Energy Scotland

www.homeenergyscotland.org/contact-advice-support-funding

0808 808 2282

Nest.gov.wales

www.nest.gov.wales

0808 808 2244

And your local authority website

Tips for finding a Tradesperson

We've included a handy checklist that can help you ask the right questions of any tradespeople you're asking to quote for work on or around your property:

Customer Checklist

- 1** Have a clear idea of the work you want done
- 2** Try and obtain three detailed quotes before starting work
- 3** Ask friends and family for a personal recommendation
- 4** Also check the TrustMark website www.trustmark.org.uk
- 5** Make sure the tradesman is registered with TrustMark for the particular trades you require
- 6** Always take up references and speak to previous customers
- 7** Be realistic about how long it may be before the tradesperson can start work - good people are in demand
- 8** Don't just go with the cheaper option of paying with cash, rather than a properly invoiced job that may include VAT
- 9** Only pay for work that has been done and not by advance payments
- 10** Always use a written contract as it offers you protection if anything does go wrong
- 11** Agree in writing any changes to the work or agreed contract value

Remember, ask as many questions as you need to before you commit to any works. It will help you feel comfortable about the tradespeople coming to do the work and understand what they are going to do, and how they are going to do it.

It's always your choice.



Improving energy efficiency by adopting a fabric-first approach is key in ensuring the transition to low carbon heating is cost-effective and resilient. 'Fabric-first' means focusing on installing measures that upgrade the building fabric (e.g. walls/lofts) itself before making changes to the heating system."

*Issued by the UK Government,
Heat and Buildings Strategy October 2021*



www.trustmark.org.uk

