

The National Consumer Federation

A step by step guide to planning how to cut carbon emissions in your home



Who are we?

This guide has been produced by the National Consumer Federation <https://thencf.org.uk>

We are an independent, not-for-profit charity with 50 years' experience of tackling issues that affect consumers and campaigning for positive change. We regularly hold consumer congresses, bringing together experts in the field and inviting participation from interested parties. We welcome all those with an interest in a national association whose prime objective is to advance the wellbeing of consumers. More details on the website.



Planning how to cut carbon emissions in your home

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

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

Introduction

This guide offers simple suggestions about the steps that consumers can take to reduce carbon emitted by retrospectively adapting existing homes ('Retrofit'). Working your way through this guide should help you to draw up a plan of action. Why is it needed?

We can already see the impact of global warming with more heat waves, more intense rain and storms, flooding and fires. Rising sea levels threaten coastal flooding and erosion. Across the world, food production is becoming more difficult, many breeds of animals may die out, sea levels will rise and our children, and our children's children, will be living in a world that is more hostile and unpleasant than the one we presently enjoy.

In this guide we focus on the home. Energy saved is money saved. Bringing your home energy consumption down will reduce your carbon and, while bills probably won't go down, they may not increase as much as they might otherwise have done. Also, energy prices are currently zooming up and it will be very hard to compare your bills with what you paid before.

If you are a home owner then you can carry out all the actions you've decided on yourself, otherwise you need to work with your landlord or freeholder.

Drawing up a plan based on this guide will help you to make long term improvements. Some of these actions can be quite disruptive, so make the most of the opportunities that arise, such as when you move house, when you are undertaking renovations or when you are replacing heating appliances. We have about ten to twenty years to make significant progress. So the sooner we start the better!

Your checklist

This is what you'll find in the checklist. Steps 1 to 2 help you to work out what you could do to improve what current heating and appliances you have. These are relatively simple actions which you can carry out initially before going on to decide on, and take more large scale and expensive decisions. Steps 1 and 2 can be taken by any householder. Steps 3 to 12 are mostly taken by the owner of the building – freeholder or landlord

- 1 Better heating and lighting control
- 2 Using equipment more efficiently

Insulate first! Steps 3 to 6 are about reducing the amount of heat lost from your home. Insulating your home effectively will make a tremendous difference – it will be more comfortable, plus you should save energy costs.

- 3 Draft reduction
- 4 Loft and roof insulation
- 5 Wall insulation
- 6 Floor insulation

Step 7 focuses on equipment. This is where you have to make important decisions about expensive equipment – these are investments for the future.

7 Heating

- (i) Homes ON mains gas network
- (ii) Homes OFF mains gas network with oil, LPG, coal or storage heaters

Step 8 covers the production of your own electricity.

- 8 Solar panels

Steps 9 to 12 look at wider issues:

- 9 Where to go for finance
- 10 Finding legitimate trades people. This is a vital step!
- 11 What to do when things go wrong
- 12 Sources of information.

For each step you can note whether you've already done this, got the suggested equipment or have done more research. If not, decide if and when you might put this into action. The plan you produce is almost certainly a long-term plan. But don't despair! Keep moving on and improving. Your house will be more comfortable to live in and you can be sure that you have done your individual best to cut down on carbon emissions. And you might also have the confidence to pass on the expertise you've gained to others in your community.

Good luck!



The NCF 12 step guide

Step 1 Better heating and lighting control

- Turn your heating down by at least 1 degree – this will save 10% of your heating bill.
- Turn down heating in rooms you don't use, or use seldom. But don't turn it off completely so as to avoid problems with damp.
- Replace incandescent and halogen light bulbs with LED bulbs in all your lights – switching just one 100 watt bulb could save £7 a year.
- Turn off lights when not needed.
- Use small lamps instead of overhead lights where convenient.

All of these are actions you can easily do for yourself, except ...

- Get a smart meter to monitor how much gas and electricity you're using and to identify power-guzzling gadgets. Ask your energy supplier.
- Install and use heating controls (room thermostats, programmers, thermostatic radiator valves) – this could save a typical home £70 a year.

Step 2 Using equipment more efficiently

- Fit an insulating jacket to your hot water tank to save about £20 a year.
- Don't leave appliances on stand-by – turn them off when not in use.
- When it's absolutely necessary for you to renew, buy energy-efficient appliances – check their energy use rating. Consult independent consumer reviews – *Which?* - for comparative details of energy consumption.
- Wash clothes at lower temperatures.
- Tumble dryers use very large amounts of electricity - could you hang clothes to dry outside or on clothes racks inside?
- Dishwashers also use a lot of electricity – could you do more dish washing by hand? Make sure that you always have a full load, as this is much more efficient.
- Investigate the availability of solar powered devices for use in the home.
- If your shower heads have been in use for a long time, modern ones will be more efficient and save water. Check what's available. Remember that showers usually use less water than baths.

Step 3 Draught reduction

- Cutting draughts is really important – but you must ensure that there is some ventilation. What forms of ventilations are there in your home?
- Check all over your home to work out where drafts are coming in and decide what you can deal with yourself.
- Buy draught-proofing materials for use round doors and windows and use them. Note that it's very important that insulation is done properly – risks are poor ventilation, damp penetration and use of flammable and/or toxic materials.
- Do you have an open chimney? To prevent heat escaping up it when you don't have a fire, fit a chimney isolator. Just remember to remove it before you light your next fire!
- Heat is lost through single or old double glazing about twice as fast as through standard modern double glazing.
- If you are unable to replace singly glazed windows with double glazing because of building regulations, could you install secondary glazing?

Step 4 Loft and roof insulation

- Check whether you have insulation in your loft – 25% of all heat is lost through the roof.
- If you have loft insulation, check its age and depth. New regulations require deeper layers and built-in air flow.
- If new loft insulation is needed, decide whether to employ professionals (see Step 10 below) or decide whether you can do it yourself.
- If you have rooms in your attic or a loft conversion, make sure these rooms are insulated - see below under Wall insulation
- Do you need to have your roof replaced? Make sure that insulation is included.

Step 5 Wall insulation

- Up to a third of all heat loss is through uninsulated house walls. Check whether your house has wall cavities. If built before about 1920, then it probably has solid walls. If built between 1920 and 1999 it is most likely to have cavities and post 1999 it will have cavities which have been filled with foam.
- If your house has solid walls, you can insulate either outside or inside. You can employ a professional (Step 10 below) to install sheets of insulating material to the outside of your house and cover them with cladding.

Step 6 Floor insulation

- Are all your floors insulated in one way or another?
- The temperature of a non-insulated floor can be doubled by adding appropriate insulation. The most straightforward method is to cover floors with carpet or laminates etc with an insulating layer.
- Timber flooring can be insulated by injecting insulating materials underneath the boards. If you have suspended wooden floors, is this something you'd consider?
- If you need to have your wooden flooring treated, might it make sense to have one room done at a time?

Step 7 Heating

Homes heated by mains gas (around 86% of all homes)

- Replace your boiler if it has reached the end of its useful life. Replacement boilers will continue to be available for existing homes.
- Hydrogen is being tested as a possible low carbon replacement for mains gas but final decisions have yet to be made.
- Air source heat source pumps are not always a direct replacement for most mains gas boilers, and there's no need to replace gas boilers prematurely.

Homes not connected to mains gas

- Replacing old, inefficient oil or LPG fired heating boilers with a modern A-rated condensing boiler can save up to £300 a year. How old and inefficient is your oil or LPG boiler? Is it time to replace it?
- Consider a heat pump to replace, coal, oil, LPG or electric storage heaters.

Heat pumps

- Heat pumps work best at lower temperatures to provide background heat in a well-insulated house, but may need modified pipework, larger radiators and extra hot water storage.
- With temperatures going up thanks to global warming, you might need to consider whether your warm air heating system could also incorporate a cooling one. Have you done this?

Step 8 Solar panels

- To install solar panels you need a south-facing, downward sloping roof in reasonably good condition. Does your roof fit the bill?
- Installing solar panels is not cheap and although you'll be paying less for your electricity overall, it will take a while, probably at least 5 years, before you can recoup the cost of your investment. Could you afford this?
- The installation of solar panels is a specialised job and you need to be particularly careful that you choose a well-qualified supplier. See Step 10 below about finding legitimate trades people.

Step 9 Where to go for finance

- There have been a number of schemes directed at supporting energy saving. The available sources change over time.
- The websites Simple Energy Advice <https://www.simpleenergyadvice.org.uk> and Energy Savings Trust <https://energysavingtrust.org.uk/energy-at-home/financial-support/> provide updated information about possible sources of grants. Check them if you're interested.
- A number of building societies, banks and other financial institutions offer loans specifically aimed at energy-related investment. Might one of these appeal to you?
- If you are a member of a credit union, you can get a loan at a relatively low rate of interest. Loan applications for energy conservation will always be approved. Does this apply to you?
- Some energy conservation grants are available to groups rather than individuals – might you be a member of a group that could apply, or could you even set one up?

Step 10 Finding legitimate trades people

- In many of the steps you might take there is scope for things to go wrong, ranging from poor workmanship causing leaks, damp or fire hazards through installations that are not right for your particular home or fail to comply with the relevant regulations. You must be able to trust those who you employ to carry out work for you. NCF's partner, Trustmark, is a Government-approved body which vets potential companies and supplies their details on request. Trustmark offers a financial guarantee and a dispute resolution scheme to cover the unlikely event of problems arising. Check their website <https://trustmark.org.uk> to find out what Trustmark-approved companies operate in your area.
- Trustmark have published *A guide to Retrofitting your home* which spells out the process in detail. This is available on their website where you can download it <https://www.trustmark.org.uk/homeowners/whole-house-retrofit>

- The Microgeneration Certification scheme also certifies installers of a range of small scale low carbon products ranging from solar panels to wood-fuelled heating systems. If you're interested in this sort of product, check their site on <https://mcs-certified.com> to look at MCS certified companies operating in your area.
- Whatever company you use for energy-saving work in your home, ensure that you reach a firm agreement as to cost, duration of work, insurance, guarantees (if any) and full contact details.
- If there are no Trustmark-recommended companies available in your area, check local builders and suppliers to see what they offer and to ensure that they have been recommended by a range of local independent users. You could also check whether your local council or trading standards department publish a list of approved builders and suppliers.

Step 11 What to do when things go wrong

- The virtue of using companies certified by Trustmark and MCS is that should problems arise, there is a supervisory body to whom you can complain if you have a problem with your supplier. Is this important to you?
- Problems with companies not subject to certification can possibly be dealt with by an appeal to the Federation of Master Builders <https://www.fmb.org.uk> or, depending on the nature of the complaint, to Citizens Advice on <https://www.citizensadvice.org.uk>.

Step 12 Sources of information

Here are the details of a website that provides a wide range of information about every aspect of saving energy and reducing carbon emissions by one means or another. Some of the information available there has already been summarised in this guide, but there is a great deal more on the specialist site :-

The Energy Saving Trust <https://energysavingtrust.org.uk>