

Old Stone House Energy Saving Guide



Greener
Kirkcaldy

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Greener Kirkcaldy is a community-led charity and development trust working on a local scale to benefit people and our environment. We would like to see a future where everyone is able to heat their home affordably, eat well, and tread more lightly on our planet.



Cosy Kingdom is a free and impartial energy and debt advice service available to all homeowners and tenants across Fife. It's a partnership between Greener Kirkcaldy, St Andrews Environmental Network and Citizens Advice & Rights Fife which has already helped over 6,000 households reduce their energy use, cut their carbon footprint and stay cosy.

Introduction

This report has been produced as a guide on how you can save energy in your home and keep it warm.

From simple and easy “quick wins”, to investing in bigger energy efficiency measures, we’ve suggested specific ways that you can reduce your energy costs, improve the comfort of your home and reduce your carbon footprint.

What are carbon emissions?

From heating our homes, to travelling to work or the shops, our daily activities produce carbon dioxide and other greenhouse gases. These gases are collectively known as carbon emissions (often written as CO₂e). The carbon emissions we are responsible for producing are also known as our “carbon footprint”.

In a typical old stone house, most heat loss comes from:

- Stone walls without any insulation
- No insulation in the loft, coomb or dormer cheeks, or the floor
- Old or single glazed windows
- Old wooden external doors
- Old conventional boilers

Common problems with this type of house:

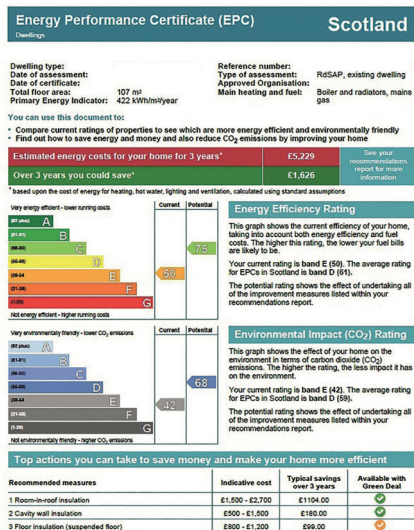
- They can be difficult to heat and lose heat quickly
- They can be draughty
- They can be damp

Old stone properties tend to be energy inefficient. Without any improvements, a typical home of this size and type could cost £1,800 in gas and electricity each year, and produce around 14,000 kg CO₂e annually.

Energy Saving Measures

How energy efficient is your property?

You can get an idea of your property's current energy efficiency from your home's Energy Performance Certificate (EPC). These are required when selling or renting your property. Your Energy Performance Rating (EPR) scores the efficiency of your property from A to G based on the size of your home, insulation and efficiency of your heating system, lights and appliances. Old stone homes typically have a rating of D, E or F. Energy efficiency upgrades could help you achieve a C rating, or B rating if renewables are also installed.



You can get an EPC from an accredited assessor:

www.scottishepcregister.org.uk/assessorsearch

The following measures will help make your home more energy efficient, save carbon emissions and money, and keep your home warm. Big measures such as wall and loft insulation can save you up to £560 and 2400 kg CO₂e a year. Even smaller changes can make a noticeable difference. Switching to LED bulbs could save you up to £35 and 700 kg CO₂e a year.

Visit the *Cosy Kingdom* website for more energy saving tips and seasonal energy advice: www.cosykingdom.org.uk

Easy Wins

There are many simple changes that you can make to reduce your energy usage and carbon footprint, without costing you any money or altering the fabric of your house.

- 1. Understand your home's energy usage** - an energy monitor or smart meter can help you track how much energy you use, and what you use it on - typically cutting your usage by 10%.
- 2. Set your heating controls** - use your timer, room thermostat and thermostatic radiator valves so that you're only heating the rooms you use, when you need them. Turning down your thermostat to 18-21°C could save you around 13% on your annual heating costs.
- 3. Take appliances off standby** - switch appliances off or use a programmable power-down (for hard-to-reach sockets) to take appliances off standby when not in use. This could save £30 a year.
- 4. Put up thermal curtains** - thick, thermally lined curtains will help prevent heat loss through your windows. Draw your curtains at dusk to keep the heat in, and open them in the morning to benefit from the heat of the sun.
- 5. Reduce your electricity use** - reduce your shower time, turn off lights when you leave a room, use your tumble dryer less, and only fill the kettle with the amount of water you need.



Simple Upgrades

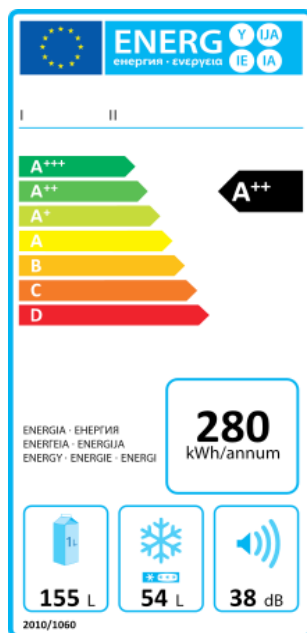
There are also lots of energy efficiency upgrades that you can make to your home with minimal disruption and cost.

1. Draught proofing - use strips, tape and sealant to reduce draughts coming from windows, doors, letter boxes, floorboards, skirting boards and loft hatches. Use a chimney balloon if you have an unused open fire. Draught proofing measures can be installed simply and cheaply, and purchased from most DIY stores.

2. Internal insulation - insulate your loft (or top up insulation to 270mm thick), hot water pipes and boiler. Mount radiator panels behind your radiator to reflect heat back into the room.

3. Energy efficient appliances - look for the EU Energy Rating when buying a new appliance. This rates products from dark green (A+, A++ or A+++) to red (D). Dark green rated products use less energy. Eg. Replacing a 12 year old fridge freezer with an A+ rated one, could save you £38 per year and 155 kg CO₂e.

4. LED lights - LEDs are more efficient, brighter, and last longer than incandescent or halogen bulbs. An 8w LED can replace a 60w incandescent bulb and last up to 20 years. Replacing a light bulb with an LED of the same brightness will save you £3 - £6 per year.



Big Measures

Investing in your property can be costly, but the benefits to your home's running costs can be very significant. A combination of the following measures could cut your energy costs by 50%.

1. Insulate floors, walls, attics and coombs - install floor insulation and thick carpets, external or internal wall insulation, and room-in-roof insulation in dormer windows and eaves. You could spread the cost by doing one room at a time, and combining with re-decorating.

2. Upgrade windows and doors - older windows and doors can be draughty and leak heat. Upgrade them to more energy efficient alternatives e.g. new energy efficient double glazing.

3. Upgrade heating systems - replacing your boiler with a more energy efficient one, or replacing back boilers or storage heaters with full central heating, can significantly reduce your energy use. Costs typically start at around £2,000 for a boiler and heating control upgrade. A combi boiler is a good investment if your household does not need to heat a lot of hot water.



Summary Table

Measure	Ease to install	Cost to install	Annual savings	Annual carbon savings
Draught-proofing	Easy	£85 - £275	£25	150 kg CO ₂ e
Loft insulation	Moderate	£300 - £395	£135 - £225	590 - 990 kg CO ₂ e
Loft top-up insulation	Moderate	£240 - £290	£20	90 kg CO ₂ e
Radiator panels	Easy	£20 per panel	£15	38 kg CO ₂ e
Hot water cylinder jacket	Easy	£15	£20	100 kg CO ₂ e
LEDs	Easy	£100 (whole house)	£35	700 kg CO ₂ e
Floor insulation	Moderate	£950 - £2,200	£65	290 kg CO ₂ e
External wall insulation	Moderate	£14,000 - £22,000	£225 - £425	1120 - 1870 kg CO ₂ e
Internal wall insulation	Difficult	£4000 - £13000	£225 - £425	1120 - 1870 kg CO ₂ e
Room in roof insulation	Moderate	£1,500 - £2,700	£255	990 kg CO ₂ e
Double glazing	Moderate	Variable	£75 - £110	Variable
Boiler replacement (replacing G rated)	Moderate	£2300	£210 - £320	960 - 1470 kg CO ₂ e

Renewable Energy

Micro-renewables are small scale technologies using renewable energy to provide heat and electricity to the home.

The main advantages are:

- A more energy efficient home with reduced carbon emissions
- Reduced fuel bills and security against uncertain energy markets
- Additional income exporting renewable heat or electricity

1. Photovoltaic Panels

Convert sunlight into electricity which can be used in the home, stored in a battery or exported to the grid. They work best on an unshaded south-facing roof.

Cost: £5000 - £8000



2. Solar Thermal Panels

Use heat from the sun to heat water. They work best on an unshaded south-facing roof and require a hot water tank.

Cost: £4000 - £5000

3. Biomass

- produces heat by burning wood derived products e.g. chippings, pellets, logs.

Could be a single room stove or a boiler heating the whole

house. Cost: £8000 - £15000 for a pellet biomass boiler



4. Heat Pumps - take and use the heat from air, ground or water and use a small amount of electricity to generate large amounts of heat. They work best in well insulated houses and with underfloor heating. Cost: £6,000 - £18,000

Additional Support

Cosy Kingdom

www.cosykingdom.org.uk

01592 807930 | info@cosykingdom.org.uk

Home Energy Scotland

www.energysavingtrust.org.uk/scotland/home-energy-scotland

0808 808 2282

Advice on and financial support for energy efficiency improvements, renewables and finding recommended local installers.

Historic Environment Scotland

www.historicenvironment.scot | 0131 668 8600

Advice and support on energy efficiency improvements for listed buildings and older properties.

Fife Council's Conservation & Energy Efficiency Team

www.fifedirect.org.uk | 03451 55 55 55

Advice on planning regulations and help and support on making adaptations to homes in conservation areas.

The Green Homes Network

www.energysavingtrust.org.uk/scotland/tool-calculators/green-homes-network

Examples of energy efficiency measures in homes across Scotland

The information and guidance provided in this report has come from Cosy Kingdom data and the following additional sources:

Changeworks (2009) Renewable Heritage: A guide to microgeneration in traditional and historic homes [www.changeworks.org.uk/sites/default/files/renewable_heritage.pdf]

Climate Challenge Fund (2011) A Low Carbon Route Map: Planning and Measuring Emission Savings for Climate Challenge Fund Projects (version 1.0) [www.keepsotlandbeautiful.org/media/43515/ccf-low-carbon-route-map-energy-2011.pdf]

Energy Saving Trust (2017) [www.energysavingtrust.org.uk]

Greener Scotland (2017) [www.greenerScotland.org]

Scottish Government (2016) Scottish Housing Conditions Survey: 2015 key findings [www.gov.scot/resource/0051/00511081.pdf]

Action Plan

Easy Wins

- ☐ Install an energy monitor or smart meter
- ☐ Set your heating controls
- ☐ Draw your curtains at dusk
- ☐ Be energy aware e.g. don't use a tumble dryer and turn off lights

Simple Upgrades

- ☐ Draught-proof windows, doors, floorboards, roof, chimneys
- ☐ Insulate loft, water tank and pipes
- ☐ Switch to LED lighting
- ☐ Buy energy efficient appliances

Big Measures

- ☐ Insulate walls, coombs and floor
- ☐ Replace windows and doors
- ☐ Upgrade boiler or heating system
- ☐ Install renewable energy technology