

Many of the UK's older buildings are poorly insulated or have no insulation because there was no requirement to fit any insulation until 1965 when 25 mm of insulation was specified for the loft.

Insulation requirements have subsequently been upgraded so that for example 300 mm of insulation is specified for the loft.

Simple low cost measures include –

- Reducing drafts by fitting draft excluder to window and door frames
- Adjusting thermostatic radiator valves so living room is warmer and other less used rooms colder
- Reducing central heating water temperature so operating system for longer times at lower temperatures
- Changing energy suppliers
- Tenants requesting building owners to invest in warmer homes to extend life of building fabric

Winter watch

This support scheme is operated by Reading Borough Council. For further information go to winter.watch@reading.gov.uk

Rent guarantee scheme

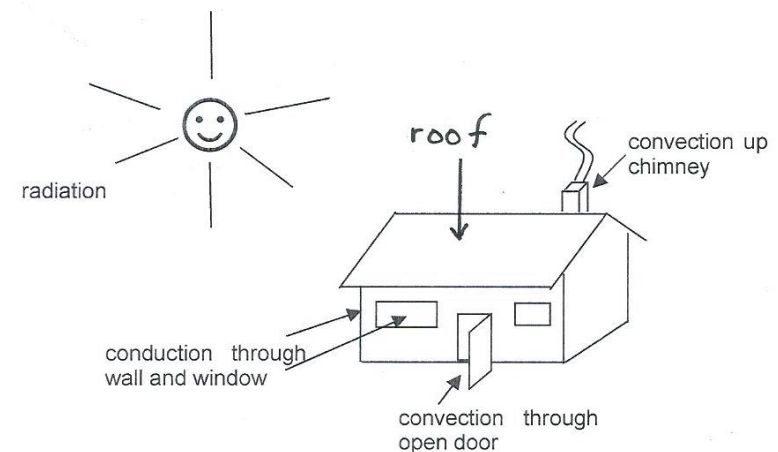
matches people who need homes with landlords who have properties to let while RBC pays the rent directly to the landlord, in advance. For further information go to rgs@reading.gov.uk

Further information

Leaflets on these measures and other relevant information is available at www.readingcan.org.uk



Creating warmer homes



The benefits of warmer homes include –

- Higher level of thermal comfort
- Less condensation due to difference in internal and external temperatures
- Healthier living conditions
- Less respiratory and pneumonia illnesses
- Lowers heating bills lengthens life of building fabric
- Reduces emissions of greenhouse gases responsible for global warming



External draft strip around door

Soft bead seals against door

Cost around £25 Some DIY skills needed

Can be effective – many different designs

Draught Proofing Sash Windows



Staff bead should be installed so that the sash window can slide but there is not so much play as to allow draughts.

Installing draft excluders on top / bottom of frame is likely to cause problems with catches or locks not aligning

Leaflets on a range of measures to create warmer homes can be downloaded from www.readingcan.org.uk



Reducing ventilation losses

Ventilation losses are a major source of heat loss and yet there are measures that are easy to install at low cost and will make your home much warmer.

The first step is to identify the source of draughts using your hand or a piece of paper. The major leaks are usually around the windows, window or door frames. These leaks generally arise as result of ageing which changes the stability and shape of the frames due to withstanding temperature extremes and rain

The simplest form of draught excluder is a narrow roll of polyurethane or rubber strip with an adhesive backing on one side.

- Open each window which does not seal and stick the excluder to the inside of the frame
- Ensure the window can close
- For external doors stick the excluder to the inside of the door frame; ensure door can close

The problem Unless the neutrality of the water in your central heating system has been maintained at its neutral point, corrosion will occur which can reduce your radiator efficiency by 5 – 7% and the life of your central heating system

The solution Addition of suitable low cost chemical inhibitors/descalers whenever your heating system is serviced which can

- Limit corrosion and gas build up in radiators
- Dissolve scale minerals plated on the inside of your radiators

This will result in warmer homes, lower heating bills, lengthening the life of your heating system and should enable your system to be converted to low carbon heating at some future time without having to replace the radiators.

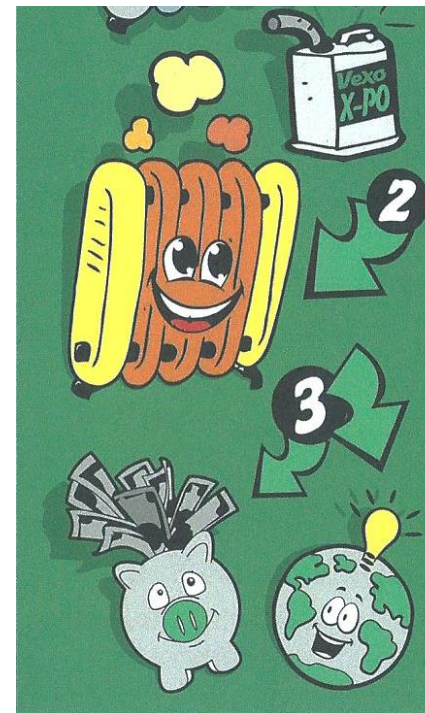
Obtaining your voucher

Vexo is prepared to supply chemical inhibitor/descaler as free issue for up to 3 years as their contribution to limiting climate change. The only requirement is that your plumber/heating engineer makes some simple measurements whenever he services your boiler. There are a limited number of vouchers so do not delay and apply to day. To obtain your voucher, email voucher@vexoint.com

Don't delay once your plumber has agreed as the number of vouchers are limited.



Restoring radiator efficiency



There are chemical processes available for restoring the efficiency of your radiators and reducing your heating bill.

If this treatment is not undertaken whenever your heating system is serviced then it is likely that -

some areas of your radiators will not be hot requiring your radiators to be bled;
your boiler may cut out between annual servicing;
your heating bill will be higher than it should be.

- Is there less than 300 mm insulation in the loft?
- Do your windows suffer from condensation ? If so only likely to have a single glass pane fitted
- If house built post 1945, is interior of external walls cold to touch; if so cavity is not insulated
- If built pre 1945 has external insulation been fitted to outer walls?
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The answers to these questions will indicate where heat is being lost while other leaflets in this series will describe what measures you can take to reduce heat loss.

Analyse your heating bill

Add heat demand from one year's heating bills in kWh

Measure floor area in square meters

Divide heat demand by total floor area

Compare with likely heat demand for your building and type

Energy performance certificate (EPC)

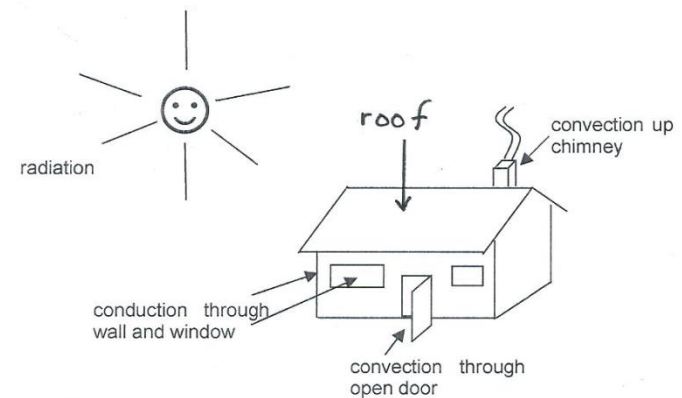
Consult EPC register for your house or adjacent houses by inserting post code. This will identify existing insulation measures and ranks new measures and costs if these not been fitted since house was rented or sold. EPC register can be consulted at <https://find-energy-certificate.digital.communities.gov.uk>

Further information

For further information and other measures go to www.readingcan.org.uk



Do it yourself warmth check



Many of the UK's older buildings are poorly insulated because there was no requirement to fit any insulation until 1965. So undertaking a warmth check will help to identify nature of your heat losses.

Visual inspection

- Are draught excluder strips fitted to your windows or doors to reduce ventilation losses?
- Are thermostatic valves fitted to your radiators so you can adjust the temperature?
- Does your radiator have cold areas – if so, no inhibitor/descaler is present in central heating water system

Ease of fitting

Insulating the *loft* is usually straight forward and extra insulation can be added to what might already be there. It is also possible to insulate underneath the *roof* by using a polymeric insulating mix.

Houses built post 1945 will have a *cavity* between the inner and outer courses of any external wall and this can be insulated by blowing mineral fibres into the cavity.

If the external walls have no cavity (pre 1945) then it is preferable to insulate externally as this is less disruptive and does not affect the available space. External insulation is typically 50 to 100 mm thick and is generally in the form of panels affixed to the external wall and screeded

To insulate the windows, it is necessary to add a secondary pane or preferably install double (or triple) glazed windows

Further information

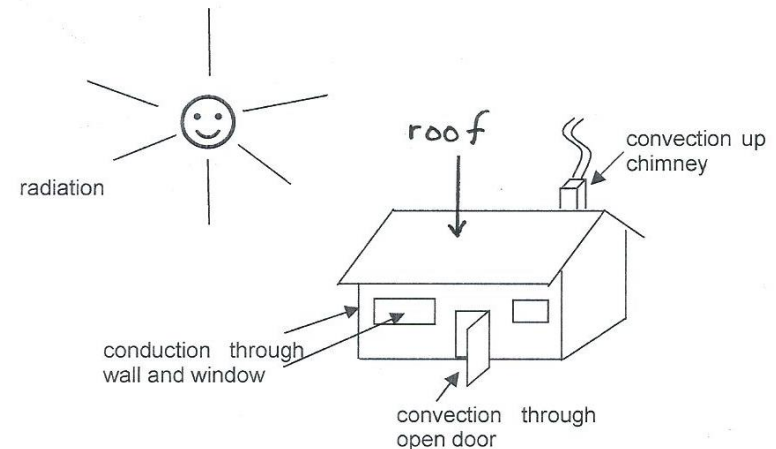
Leaflets on these measures and other relevant information is available at www.readingcan.org.uk

After deciding what improvement(s) you need, identify a local installer or go to www.simpleenergyadvice.org.uk .

If you are eligible for any grant aid then the installer needs to be Trustmark registered.



Upgrading insulation to reduce heat loss



The older the building, the higher the heat loss as Building Regulations only began to require thermal insulation to be fitted from 1965 onwards. The insulation standards have been progressively increased over the succeeding 50 years

Advantages of increasing insulation

- Lower heating bills
- Less condensation
- Higher level of thermal comfort
- Lower carbon emissions to atmosphere

Plumber/heating engineer

- Fitting thermostatic radiator valves so temperature can be controlled in each room
- Adding inhibitor/descaler to your central heating water system whenever it is serviced

Upgrading insulation

- Identify a registered installer
- Obtain a written quotation, preferably more than one
- Consult local references
- Consult case histories on [readingcan](http://readingcan.org.uk) website

Energy advice

Energy team at Citizens Advice, Reading can help with reducing cost of energy bills through

- Finding cheapest supplier
- Claiming any grants, benefits or discounts you may be entitled to
- Using less energy around the home

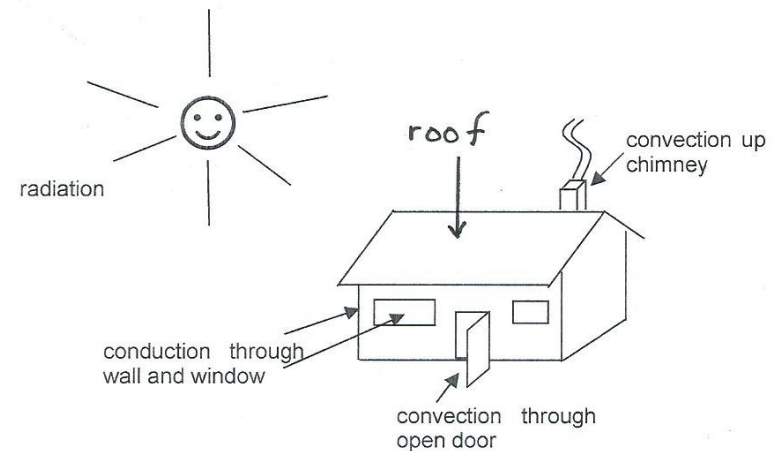
. email energy@citizensadvicereading.org

Further information

Leaflets on these measures and other relevant information is available at www.readingcan.org.uk



Getting the work done



The older the building, the higher the heat loss as Building Regulations only began to require thermal insulation to be fitted from 1965 onwards and insulation standards have been progressively increased over the succeeding 50 years

Creating warmer homes

- Fit draft excluder around window and door frames
- Adjust temperature settings on thermostatic valves if fitted
- Identify possible grants and funding such as ECO, LAD or HUG

Air source heat pumps are relatively easy to install but lose some of their efficiency during the winter months as the outside air cools down so auxiliary heating might be needed.

Ground source heat pumps are more expensive to install but their efficiency is independent of the outside air temperature and so an additional heating source is not required.

To access the geothermal heat, a horizontal or vertical ground loop is required through which a water/glycol mixture is pumped. In future it is likely that communal bore hole arrays will be able to supply geothermally heated water.

Renewable heating incentive

The domestic renewable heating incentive can be used to recover the cost of converting your heating system to a heat pump.

Leaflets on these measures and other relevant information is available at www.readingcan.org.uk.

After deciding what improvement(s) you need, identify a registered local installer or go to www.simpleenergyadvice.org.uk . Obtain a quote and download a voucher application form for a grant.

For a limited time, Vexo will supply as free issue for 3 years inhibitor/descaler to add to your central heating water systems, email voucher@vexoint.com.

The work has to be completed by 31/03/2022.



Low carbon heating – heat pumps

Heat pumps are the most efficient low carbon heating technology as they do *not* produce heat, but concentrate the low grade heat present in the air, ground, rivers or lakes.

They can produce up to 4 units of heat output in the form of space heating or hot water for every unit of electricity they consume.

Reducing conversion cost

Before installing a heat pump, it is cost effective to increase the insulation level so that the heat loss is no greater than 5.0 kW at -1 C. Also to restore your radiator efficiency by adding a suitable chemical inhibitor/descaler so that the radiators can likely be reused at lower central heating water temperatures.



Meeting the demand

During the summer there is generally sufficient sunlight to provide almost all the hot water demand. During the winter, solar radiation is reduced and so a secondary heating system will be required which will usually be an electric immersion heater fitted inside a hot water storage tank.

Typical output and cost

A typical hot water demand per household will consume about 3000 to 4000 kWh of energy per year which will cost about £150 - £200 per year. If the solar water modules could supply half this demand then the savings would be £75 - £100 per year.

Both solar electric and solar thermal modules can be roof mounted. However, if roof space is limited, it might be more beneficial to invest in solar electric modules as the payback time is shorter.

Further information

Leaflets on these measures and other relevant information is available at www.readingcan.org.uk

After deciding what improvement(s) you need, identify a registered local installer.

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Low carbon heating - Solar heated water



Solar water heating can be considered if your roof is orientated south east to south west. The roof mounted module contains a set of pipes through which water flows absorbing the infra-red portion of sunlight. 3 panels of 2 x 1 metre will provide a family's needs.

Advantages

- The solar modules can be used anywhere sunlight is available
- No pollution and little maintenance required
- Alternative heating source as gas is phased out
- Helps to reduce your heating bill and save carbon emissions

Benefits and costs

The output from the panels is inverted by electrical components to supply electric power at mains voltage and frequency which can be used by the home occupier. An array of seven panels, roof mounted SW to SE, will cost £3000 –£3500.

Such an array will produce ca 2,000 kWh/year which is approximately 40 - 60% of the average domestic electricity demand. If the majority of this energy was consumed by the residents, it could save up to £300 in electricity bills and will give a payback time of 8 - 10 years at current electricity prices.

Any excess power can be exported to the grid though only some suppliers will pay the deemed price currently set at 5.5p per unit of electricity (kWh). Alternatively it can be used to heat hot water or be stored in a battery for subsequent use

Very little maintenance or repairs is required as there are no moving parts. Warranties of up to 25 years are generally available on the panels.

Leaflets on these measures and other relevant information is available at www.readingcan.org.uk. After deciding what improvement(s) you need, identify a registered local installer or go to www.simpleenergyadvice.org.uk

Generate locally and help to limit climate change



Solar electricity



Conversion of sunlight directly into electricity through the photovoltaic process is the dominant form of generating electricity locally. These solar cells are in the form of modules whose typical dimensions are 0.7 x 1.5 m and are generally roof mounted .

Advantages include -

- Solar modules can be used anywhere where sunlight is available
- There is no pollution either local or global, no gaseous discharge, no waste and no safety issues
- Helps to reduce your electricity bill

Borrower The advantage is that a lower rate of interest can enable monies saved to be invested in further upgrading existing insulation levels and/or preparing and installing low carbon heating systems as gas boilers no longer become available

Lender Their advantage is that warmer homes will suffer less condensation and damp so extending the life of the fabric and create healthier living conditions

Environment will benefit as the result of creating warmer homes and converting to low carbon heating systems. This will result in lower carbon emissions to the atmosphere and thereby help to limit global warming

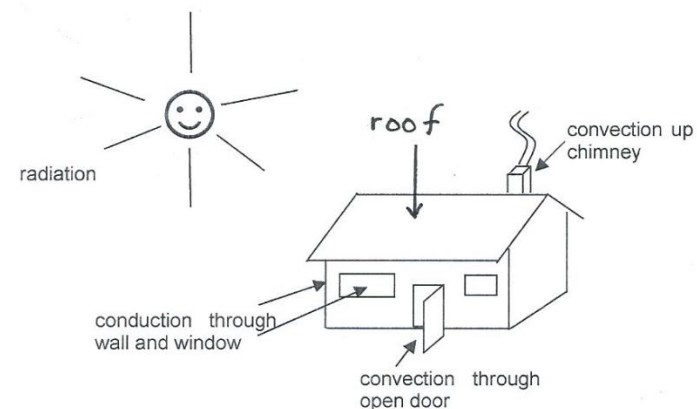
Consult energy performance certificate to establish likely benefits and costs of upgrading insulation and converting heating systems
www.gov.uk/find-energy-certificate

Identifying a green mortgage lender Ask this question of your proposed provider when you buy a home or wish to upgrade the insulation level and/or install low carbon heating. Consult also
www.moneysavingexpert.com/green-mortgages.

Further information

Leaflets on installing insulation measures and low carbon heating are available at www.readingcan.org.uk

Green mortgages



Green mortgages are those that reward families who buy or own an energy efficient home or wish to upgrade the insulation by generally offering a lower rate of interest or cash back.

Whereas until recently only the Ecology Building Society was offering a green mortgage in the UK, there are now quite a few mortgage providers which offer green mortgages as their contribution towards creating warmer homes and helping to limit climate change



Creating warmer homes

Many of the UK's older buildings are poorly insulated or have no insulation because there was no requirement to fit any insulation until 1965. Current buildings require insulation as described below.

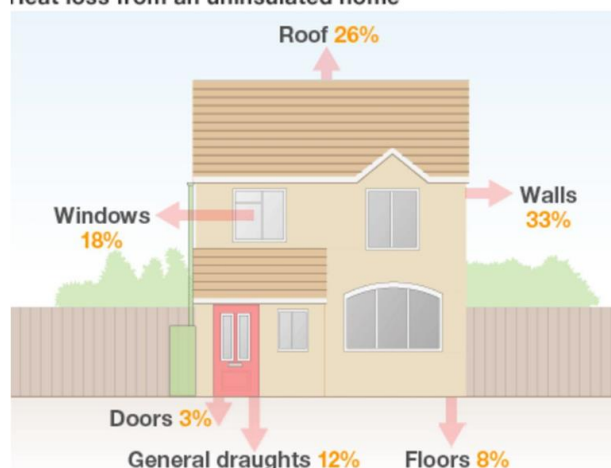
Simple low cost measures

- Fitting draught excluder to window & door frames
- Adjust radiators so living room is warmer others cooler.
- Restore radiator efficiency by adding small dose of inhibitor/descaler to central heating water; maintain level when servicing
- Reduce central heating temperature for longer
- Increase loft insulation to 300mm
- Landlords upgrade at tenants request

Higher cost measures but more effective in reducing heat losses

- Insulate cavity between external courses if built post 1945
- If built pre 1945 consider external insulation
- Replace single glazed windows by double glazed in rooms most used first; or consider secondary glazing

Heat loss from an uninsulated home



Citizens Advice Advice on reducing energy costs and grants Tel: 0808 278 7819 or energy@citizensadvicereading.org

The benefits of warmer homes include –

- Higher thermal comfort
- Reduces damp and mould
- healthier living conditions reducing respiratory and pneumonia illnesses
- Lowers heating bills
- Lengthens life of building
- Helps limit climate change

Heat Pumps

are the most efficient low carbon heating technology as they do *not* produce heat, but concentrate the low grade heat present in the air, ground, rivers or lakes

They can produce up to 4 units of heat output in the form of space heating or hot water for every unit of electricity they use.

Grants currently available are ECO and Sustainable Warmth and eligibility includes living in dwelling rated D to G on energy performance scale and either on low income or in receipt of benefits

Green mortgages

are available to upgrade the insulation by generally offering a lower rate of interest or cash back, helping the borrower, the condition of the asset and the environment.

www.moneysavingexpert.com/green-mortgages.

Winter watch is an RBC scheme to help those in need. Further information email winter.watch@reading.gov.uk

Further information

For leaflets on these measures and available grants go to www.readingcan.org.uk



.Advantages include creating warmer homes, reducing energy bills and limiting climate change and that these improvements will benefit succeeding generations for at least the next 100 years! A DIY warmth check will help to identify sources of heat loss.

Costs

The heat loss measures fall into two groups those with a payback time less than 2 years and those with much longer payback times.

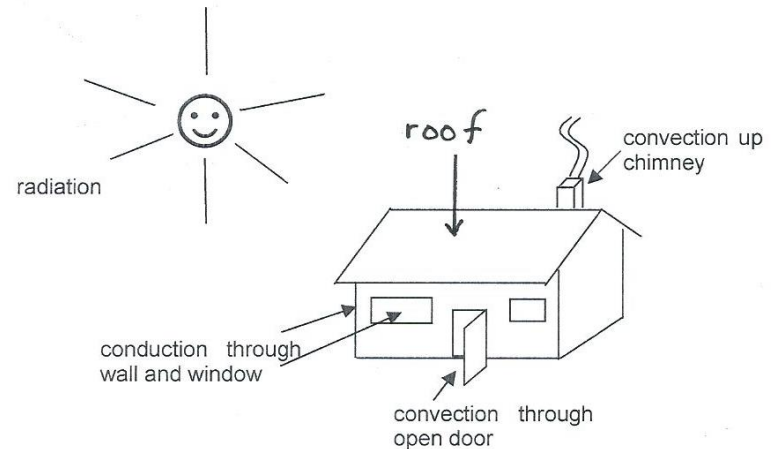
measure	Cost (£)	Annual Savings (£)	Payback time months
Draught busting	50	95	6
Inhibitor/descaler	40	80	6
Loft insulation	200 DIY 300	200	12 18
Cavity wall insulation	600	340	18
Double glazing	4000	270	150
External wall insulation	10000	400	250

These are average costs and payback times for a typical 60m2 semi-detached dwelling. It will be cheaper if you can involve others so you can make a group purchase. You should always obtain 3 quotes from competent installers

Further information

Leaflets on these measures and other relevant information is available at www.readingcan.org.uk

Insulation costs and payback times



The average UK dwelling has little insulation as insulation was only specified post 1965 in the Building Regulations. This requirement has been successively increased - so for example for loft insulation 25 mm in 1965 has been increased to 270 mm today. Insulating the cavity between the inner and outer skins of the external walls and double rather than single glazing were specified during the 1990s.

With the ever increasing prices of energy and a rate of replacement of the UK housing stock of less than 1% per year, it makes economic sense to upgrade insulation levels in older housing stock.



Warmth check form

Many of the UK's older buildings are poorly insulated because there was NO requirement to fit any insulation until 1965. So undertaking a warmth check will help you to identify nature of your heat losses. Completing this form will help to assess what needs to be done and eligibility for any grant.

Visual inspection	If yes, location(s)	action
Do you have any draughts?		Fit draught excluder
Do your radiators have cold areas or need bleeding? If so corrosion is occurring inside your radiators		Bleed radiators and add inhibitor/descaler like Vexo whenever boiler is serviced
Is your loft insulation less than 300 mm thick? If so how thick?		Increase insulation by adding mineral wool layers
Are external walls cold to touch?		Built post 1945, insulate cavity between inner and outer courses of external walls
		Built pre 1945, insulate externally preferably
Are your windows single glazed or suffer from condensation?		Fit double glazed windows to rooms most used first if funds limited. Cheaper options: fit secondary glazing panels or twin wall polycarbonate sheet 4mm thick
Is your annual income less than £30K and/or in receipt of benefits?		If yes, likely to be eligible for ECO or Sustainable Warmth grant

Consulting the energy performance certificate for your home or adjacent buildings will also help to rank costs and benefits of upgrading insulation go to www.gov.uk/find-energy-certificate

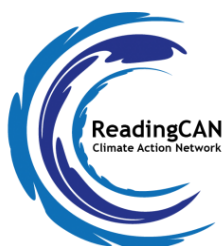
For more information and advice go to www.readingcan.org.uk/creating-warmer-homes.

If you wish to join a group purchase scheme, complete details below for which only a post code will be supplied to preferred bidders. They will supply a quote, but with no obligation to purchase.

Name Post code.....

Phone email

Send form to energy@citizensadvicereading.org





Sustainable warmth fund – eligible if combined income less than £30,000 or on some benefits - includes insulation measures and improved heating controls like thermostatic radiator valves. Call City Energy on 02921 680 951 to check your eligibility or to discuss scheme contact energyfunding@reading.gov.uk or call RBC on 0118 937 37 87

Social housing decarbonisation scheme – available only to social housing providers – so if your heating bill is high or your dwelling has energy performance rating D to G, contact your housing provider and request them to access this funding to upgrade the insulation level to at least energy performance rating level C

Boiler upgrade scheme - assists in converting gas boilers to low carbon heating like heat pumps– capital grant depending upon type of heating system installed - only covers part of the cost - only economic if building well insulated -preferably heat loss less than 5.0 kW at -1C outside temperature

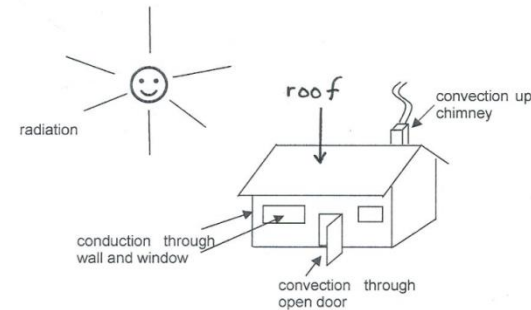
www.energysavingstrust.org.uk/grants-and-loans/boiler-upgrade-scheme

Further information

Leaflets on warmth check, various insulation measures and low carbon heating are available at www.readingcan.org.uk.

If you would like further advice or to join a group buying scheme contact energy@citizensadvicereading.org.

Grants for reducing energy bills & creating warmer homes



Creating warmer homes First step should be undertake a warmth check to identify sources of heat losses. Then determine the energy performance rating of your dwelling to establish likely benefits and costs of upgrading insulation and heating systems by consulting www.gov.uk/find-energy-certificate. Funding schemes exist for poorly insulated homes with energy performance rating D to G

ECO funding – eligible if on low income or on benefits – includes loft and cavity wall insulation – check eligibility at www.eco4.org.uk and then contact your local energy supplier – you may need to contact more than one supplier if your existing supplier is not helpful

