



Building Energy Rating (BER)

ADVISORY REPORT

Energy use in our homes is responsible for more than a quarter of Ireland's total CO₂ emissions. Reducing energy use will save you money and is good for the environment. This report provides advice on improving your Building Energy Rating, reducing your energy usage and costs, while improving the comfort and condition of your home.

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About this Advisory Report

Energy use in our homes is responsible for almost a quarter of Ireland's total CO₂ emissions. Reducing energy use will save you money and is good for the environment. This report provides advice on improving your BER, reducing your energy usage and costs, while improving the comfort of your home. The improvement measures recommended in this report are not mandatory and can be completed at your own discretion. Some improvements may require the use of suitably qualified installers or professional advice. All works should be completed to the relevant health and safety standards. Where applicable, works should be completed to the relevant Building Regulations.

In this report an associated cost and impact are provided for the recommendations specific to your home. Costs and impacts are divided into categories and these are defined as follows:

Low Cost are improvements that are expected to cost less than 100 euro to complete.

Medium Cost are improvements that are expected to cost 100 euro to 1,000 euro to complete.

High Cost are improvements that are expected to cost more than 1,000 euro to complete.

The above costs are guidelines only and actual costs will vary depending on house size, work specification and market conditions.

Low Impact are measures that will make a small improvement in energy efficiency.

Medium Impact are measures that will make a medium improvement in energy efficiency.

High Impact are measures that will make a large improvement in energy efficiency. Implementing any improvement measure will reduce your energy consumption. When implementing improvements it is sensible to prioritise those with a low cost and a high impact first. The money saved by reducing energy usage can help to pay for the improvement measures. Moreover apart from increasing the comfort and costs the

measures could increase the value of your home and reduce its environmental impact.

Ventilation

General Operational Advice on Ventilation

Care should always be taken to ensure a sufficient level of ventilation to maintain fresh air levels in each room and to remove moisture, water vapour and pollutants. For health and safety reasons it is important to ensure an adequate air supply to combustion appliances e.g. gas, oil or solid fuel. Signs of inadequate ventilation are persistent condensation and mould growth. If such problems exist, they should be addressed first, since reducing ventilation may make the problem worse. In a typical home 20% of all heat loss is through ventilation and draughts. Energy consumption can be improved while maintaining adequate ventilation. If draught sealing is damaged at any time make sure to replace it. When draughtproofing or making houses more airtight, it is important to maintain recommended ventilation standards.

Radon concentrations can increase in existing houses as a result of greater airtightness. Further information on Radon is available from the Radiological Protection Institute of Ireland in their publication "Radon in Homes". This guide can be downloaded from www.rpii.ie.

Chimneys

This dwelling has one or more chimneys.

The chimney(s) in this dwelling increase heat loss by allowing heated air to escape. When making improvements it is important for safety reasons to ensure that proper ventilation is provided in rooms with combustion appliances. There are 3 upgrade options available to you to reduce the heat loss through the chimney(s):

(a) Installing a closed-in stove will reduce heat losses, and will also be approximately twice as efficient as an open fire, giving the same heat for half as much fuel.

Cost: High **Impact:** Medium

(b) Supplying outside air directly to the heating appliance instead of drawing heated air from the room will reduce heat loss in the room. If possible, the appliance should be room sealed i.e. takes its air supply directly from outside. This will eliminate all air exchange with the room in which it is situated.

Cost: High **Impact:** Low

(c) Installing a chimney damper will reduce heat losses when the fireplace is not in use. If the chimney is never used it can be permanently sealed which involves installing a permanent insulated panel. An adjustable vent should be incorporated into the panel to avoid the chimney space becoming damp.

Cost: Medium **Impact:** Low

Fan & Vents

This dwelling has no fans/vents.

No specific action is advised.

Draught Lobby

This dwelling has no draught lobby.

Open doors and air gaps around doorways are a source of heat loss in a dwelling. The construction of a draught lobby/porch on the frequently used external doorways in this dwelling would reduce these heat losses. Lobbies should be constructed to the relevant Building Regulations. Care should be taken not to block any existing ventilation openings inadvertently.

Cost: High **Impact:** Low

Suspended Wooden Floor

This dwelling has a solid floor.

No specific action is advised.

Ventilation System

This dwelling has natural ventilation.

No specific action is advised.

Building Elements

Floors

General Operational Advice on Floors

Floors can be a source of significant heat loss and dampness in a dwelling. For example heat loss through the ground floor of a two storey house typically accounts for about 10% of total heat loss. For a single storey house this figure is about 15%. However, if a house is well insulated everywhere except for the ground floor, this percentage will be higher. A U-Value is a measure of the heat loss through the fabric of the building. The lower the U-Value the better and the higher the U-Value the greater the heat loss. Floors with a U-Value greater than 0.25 could be improved in a number of ways. A relatively simple way to reduce heat loss through a ground floor is to lay a carpet with foam backing or a foam underlay ensuring that both carpet and underlay are laid wall to wall. Sealing of gaps in the ground floor will help to reduce draughts. Modern insulation methods for new houses may also be implemented in existing houses. In some cases this would be disruptive and costly, but if work needs to be done on the floor anyway, this is a good time to consider an insulation upgrade. For further details please refer to publication 'A Detailed Guide to Insulating Your Home' available on www.seai.ie

Part of the floor area in this dwelling has a U-Value of less than 1 and greater than or equal to 0.6.

The insulation in this floor can be significantly improved.

Cost: High **Impact:** Medium

Part of the floor area in this dwelling has a U-Value of less than 0.6 and greater than 0.25.

The insulation in this floor can be improved.

Cost: High **Impact:** Low

Roofs

General Operational Advice on Roofs

Proper insulation will help retain valuable heat and improve overall comfort levels. If

insulation is disturbed or damaged at any time, e.g. in attic space, make sure to restore or replace it.

Heat loss through an un-insulated roof of a typical house can account for up to 30% of the total heat loss. Installing insulation will reduce this heat loss, and hence reduce the energy demand of the dwelling. A U-Value is the measure of the heat loss through the fabric of the building. The lower the U-Value the better and the higher the U-Value the greater the heat loss. Modern pitched roofs or habitable roof spaces that are insulated between the rafters, have a U-Value less than or equal to 0.2. Modern flat and pitched roofs that are insulated at ceiling level, have a U-Value less than or equal to 0.16. Blanket insulation, rigid board insulation or expanding foam may be used to achieve the required insulation level. Loose beads may also be used for roofs insulated on the ceiling. Installing roof insulation generally involves a considerable amount of work. The attic/roof space must have adequate ventilation to prevent dampness. This is achieved by leaving a continuous air gap along the eaves at each side. Electric cables should not be buried under insulation. Leave clearance for recessed lights to avoid them overheating. For further details please refer to publication 'A Detailed Guide to Insulating Your Home' available on www.seai.ie

Part of the pitched roof insulated on the ceiling in this dwelling has a U-Value of less than 0.4 and greater than 0.16.

The insulation in this roof can be improved.

Cost: Medium **Impact:** Low

Part of the flat roof in this dwelling has a U-Value of less than 0.4 and greater than 0.22.

The insulation in this roof can be improved.

Cost: High **Impact:** Low

Walls

Heat loss through the walls can account for up to 30% of the total heat loss. This can typically be reduced by two-thirds by insulating the walls and so reduce the energy demand of the dwelling. A U-Value is a measure of the heat loss through the building fabric. The lower the U-Value the better and the higher the U-Value the greater the heat loss. Walls with a U-Value greater than 0.27 could be improved. Insulation may be installed as cavity fill. This is where the gap between the inner and outer layers of external walls is filled with an insulating material. If cavity insulation is not applicable or is not technically possible, insulation may be installed internally or externally. Internal insulation involves a layer of insulation being fixed to the inside surface of external walls, and a suitable fire resistant finish being incorporated or applied. External solid wall insulation is the application of an insulant and a weather-protective finish to the outside of the wall.

For further details please refer to publication 'A Detailed Guide to Insulating Your Home' available on www.seai.ie

Part of the wall area in this dwelling has a U-Value of greater than or equal to 1.1.

The insulation in this wall can be greatly improved.

Cost: High **Impact:** High

Part of the wall area in this dwelling has a U-Value of less than 0.6 and greater than 0.27.

The insulation in this wall can be improved.

Cost: High **Impact:** Low

Windows

Glass allows heat to escape more readily than most other building materials. For this reason, it is important that the windows are as energy efficient as possible. Windows can account for around 15% of the heat loss in your home. Installing energy efficient windows such as low-E double glazing helps to retain heat and improves comfort through elimination of cold window surfaces and associated draughts and condensation. The use of shutters, lined curtains and blinds can improve heat retention at night and further reduce draughts.

A U-Value is a measure of the heat loss through the building fabric. The lower the U-Value the better and the higher the U-Value the greater the heat loss. Windows with a heat loss greater than the current building standards (i.e. have a U-Value greater than 2) could be improved. The best benefits are achieved through replacing single glazed windows with low-E double glazing or triple glazing.

Note that single glazing can also be improved by adding secondary glazing (installing a secondary window and frame on the room side of the existing window).

Some of the windows in this dwelling with a U-Value of less than 2.7 and greater than 2.

The heat loss through these windows can be reduced.

Cost: High **Impact:** Low

Doors

Heat is lost from dwellings through doors which often have relatively poor thermal insulation compared to other elements of the building. Installing insulated doors will reduce this heat loss, and also generally reduce draughts through air gaps at the frames. Replacement doors, whether glazed or half glazed, should have insulated cores. A U-Value is a measure of the heat loss through the fabric of the building. The lower the U-Value the better and the higher the U-Value the greater the heat loss. Doors with a U-Value greater than 2.0 could be improved. For further details please refer to publication 'A Detailed Guide to Insulating Your Home' available on www.seai.ie

Part of the door area in this dwelling has a U-Value of less than 4 and greater than or equal to 2.7.

The heat loss through this door area can be significantly reduced.

Cost: Medium **Impact:** Low

Lighting

General Operational Advice on Lighting

Compact Fluorescent Lamps (CFLs) use 20% of the energy used by typical incandescent bulbs to give the same amount of light. A 22 Watt CFL has the same light output as a 100 Watt incandescent. LED (Light-emitting diode) lights use less

than 10% of the energy required for corresponding tungsten lights. Low energy lighting will give highest savings in rooms that are most often used.

Lighting - Low Energy Bulbs

There is 100% low energy lighting in this dwelling.

No specific action is advised.

Space Heating

General Operational Advice on Space Heating

A reduction of 1°C on your thermostat can reduce annual space heating costs by 10% or more. An automatic timer switch or programmer allows you to schedule the heating duty on the hot water and heating system and to turn the system on and off as required. Use this facility to limit the running time for the heating system to fit your specific needs and you will save money.

Room thermostats normally turn the boiler and heating circulation pump off when the room temperature has reached the desired level. A room thermostat is normally located in a living area or circulations area (hall or landing). Guide temperature settings are 20°C for a living room and 16 - 18°C for circulation areas. However, the most appropriate setting depends on location of the thermostat and the heating system design. Choose the lowest setting that gives acceptable comfort conditions. Finding the setting to suit you may take some experimentation.

Thermostatic Radiator Valves (TRVs) can be set to suit the heating requirements of the room(s) in question.

For further details please refer to "A Detailed Guide to Home Heating Systems" available on www.seai.ie

Efficiency of Main Heating System (Solid Fuels)

This dwelling has a solid fuel main heating system. The efficiency of the boiler is less than or equal to 75%.

If your solid fuel burner burns fossil fuels it may be worthwhile replacing it with a biomass boiler. A biomass boiler burns renewable fuel such as wood pellets or wood chip and therefore is much less damaging to the environment. They can provide a direct replacement for a regular boiler. Biomass boilers generate considerably less net carbon dioxide than gas, oil or non wood burning solid fuel boilers. Condensing boilers (usually burning gas or oil) are capable of much higher efficiencies than other types of boiler, meaning they will burn less fuel to heat this property.

Cost: High **Impact:** High

Further advice on improving the energy efficiency of your home is available from the Sustainable Energy Authority of Ireland, www.seai.ie

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