



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 one or more fans/vents.

The fans and vents in this dwelling increase heat loss by allowing heated air to escape but can be important in ensuring adequate ventilation.

If there is no cover on the inside of the vents, installing controllable vent covers will allow you to control the air flow through the vents, and so can help reduce heat loss. It

is important not to permanently close or cover over air vents as they are required to provide ventilation for the removal of moisture, pollutants and operation of combustion appliances. It is important for safety reasons to have proper ventilation in any room which contains combustion appliances. For further details please refer to publication 'A Detailed Guide to Insulating Your Home' available on www.seai.ie.

Cost: Low **Impact:** Low

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.

Draught Stripping

This dwelling has 100% draught stripping.

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.

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

Hot Water

General Operational Advice on Hot Water.

Ensure that the hot water cylinder insulation is not disturbed or damaged. Incomplete insulation increases heat loss and costs money.

A cylinder thermostat is not required for the hot water system in this dwelling.

No specific action is advised.

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

The low energy lighting in this dwelling is less than 50%.

Replacement of traditional light bulbs (tungsten or incandescent) with energy saving bulbs (CFL or LED) can reduce lighting costs significantly. They also last considerably longer than ordinary light bulbs thereby saving on replacement costs. Consider replacing traditional light bulbs with energy saving bulbs.

Cost: Low **Impact:** Medium

Main Heating System

General Operational Advice on Main Heating System

You should have your boiler professionally serviced at least once per year. A clean and serviced appliance will operate more economically and will have a longer service life.

Efficiency of Main Heating System (Gas or Oil)

This dwelling has an oil/gas main heating system. The efficiency of the boiler in this dwelling is greater than or equal to 86%.

No specific action is advised.

Thermal Solar Panels

This dwelling has no solar water heating.

Solar Panels, also known as "collectors", can be fitted to a building's roof. They use the sun's heat to warm water, or another fluid, which passes through the panel. The fluid is then fed to a heat store (e.g. a hot water tank) and helps provide hot water directly or can provide a source of hot water for the central heating system in the dwelling. Solar panels work throughout daylight hours, even if the sky is overcast and there is no direct sunshine. Solar panels can also be used to meet some space heating demand. Ideally the panels should be located on an unshaded, south facing roof at a tilt angle of 30°- 45° to the horizontal. Space will be need to accommodate an appropriately sized cylinder for the system and a thermal mixing (anti-scald) valve should also be installed.

Cost: High **Impact:** Medium

PV Solar System or Microturbine

This dwelling has no Photo Voltaics (PV) or Microturbine installed.

A solar photovoltaic (PV) system is one which converts light directly into electricity via panels placed on the roof with no waste and no emissions. This electricity is used throughout the home to supplement the electricity purchased from an energy supplier. Ideally the panels should be located on an unshaded, south facing roof at a tilt angle of 30°- 45° to the horizontal. Batteries can be used to store electricity from the PV array or wind turbine. However, this increases the installation and equipment cost as well as maintenance cost.

A Micro-windturbine is a small turbine placed on the property which uses wind to generate electricity. The electricity is used throughout the home to supplement the

electricity from an energy supplier. The turbine should not be subject to wind shelter. To be effective, the turbine should be at a height well clear of nearby roofs and other obstructions.

Cost: High **Impact:** High

General Advice on Energy Use in Your Home

The way we use energy in our homes can reduce energy consumption. Some simple everyday measures will save money, improve comfort and reduce your impact on the environment. Some of these are outlined below.

Appliances: New kitchen appliances carry an energy rating label which rates energy efficiency on a scale of A to G. When buying new appliances look for A rated products which are more energy efficient and cost less to run. Do not under or overload appliances, such as dishwashers and washing machines. For washing machines, a 40°C rather than a 60°C wash cycle cuts electricity use by approximately a third. (Modern washing powders and detergents can work equally effectively at lower temperatures.) Defrost your freezer regularly to save energy and extend the operating life. Equipment on standby uses up to 20% of the energy it would use when fully on. When an appliance is not in use, turn it off fully.

Lighting: Avail of natural daylight whenever possible and avoid leaving electric lights switched on in unoccupied rooms. All lighting lamps carry an energy label similar to that on appliances (i.e. an A to G label) so always choose the most efficient to suit your particular needs.

Useful Links and Sources of Further Information

Useful energy saving tips are available on www.change.ie (Tel. 1890 242643) and www.powerofone.ie. For specific queries on BER please contact SEAI on 1890734237 or by email info@ber.seai.ie. There are many useful documents available on The Sustainable Energy Authority of Ireland's (SEAI) website www.seai.ie

The most recent Technical Guidance Documents for the Building Regulations and other supporting documents are available from the Department of Environment, Heritage and Local Government website www.envron.ie on the link to Building Standards (Tel. 1890 202021). Some of these documents are listed below.

Technical Guidance Document Part L Conservation of Fuel and Energy - Dwellings;
Technical Guidance Document Part J Heat Producing Appliances;
Technical Guidance Document Part F Ventilation.

When performing building works it is important to take the correct health and safety measures. Useful health and safety information on ventilation, radon and combustion devices can be found on the Carbon Monoxide safety website:

www.carbonmonoxide.ie Tel. 1850797979 and The Radiological Protect Institute of Ireland website www.rpii.ie/radon Tel. 01 269 77 66.

Please consider the environment before printing this document

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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