



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.

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

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

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

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).

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.

Cylinder Timer / Thermostat

The hot water cylinder in this dwelling should have both a cylinder timer and cylinder thermostat.

Consider installing a hot water cylinder timer and thermostat to reduce unnecessary heat loss from the hot water cylinder. A hot water cylinder thermostat enables the boiler to switch off when the water in the cylinder reaches the required temperature. This minimises the amount of energy that is used and lowers fuel bills.

The best setpoint for the thermostat is 60°C. Setting the temperature lower than this presents a health risk. Setting the temperature higher than this wastes energy.

Cost: Medium **Impact:** Low

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 circulation 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

Distribution System Losses and Gains (Control Category)

The heating system controls in this dwelling could be improved.

The heating system would benefit from a programmer/timer and room thermostat to enable the boiler to switch off when no heat is required. A seven day programmer will allow you to customise a heating schedule to meet your specific heating needs for each day of the week. This would reduce the amount of energy used and lower your fuel bills.

Thermostatic radiator valves (TRVs) could also be installed to allow the temperature of each room to be controlled to suit individual needs, adding to comfort and reducing heating bills. For example, they can be set to be warmer in the living room and bathroom than in the bedrooms. TRVs should be fitted to every radiator excluding the radiator in the same room as the room thermostat and to the radiator/towel rail in the bathroom. The room thermostat is needed as well as the TRVs, to enable the boiler to switch off when no heat is required.

Cost: Medium **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 is greater than 80% but less than 86%.

If your boiler is over 15 years old and/or has an efficiency of less than 86% you should consider upgrading it to a condensing boiler. A condensing boiler is capable of much higher efficiencies than other types of boiler, meaning it will burn less fuel to heat this dwelling. Boilers with an efficiency of over 90% are available on the market. While boiler upgrades can be undertaken at your own discretion, please note that, in the case of replacement boilers, it is a mandatory requirement under current Building Regulations that a replacement boiler has a minimum efficiency of 86%. When an old boiler is due for repair or replacement it is usually more cost effective to replace it with a condensing boiler. Condensing boilers need a drain for the condensate which may

limit where they can be located. This can be borne in mind if you are considering remodelling the room containing the existing boiler even if the existing boiler is to be retained for the time being. Renewable or Low Carbon heat sources should also be considered as replacements for oil or gas boilers. Two such alternatives are biomass boilers and heat pumps. A biomass boiler burns renewable fuel such as wood pellets and therefore is much less damaging to the environment. Heat pumps transfer the heat stored in the ground or outside air into the home for heating or hot water. Biomass boilers usually require more fuel storage space than gas/oil boilers. Heat pumps could also be used to improve energy consumption levels but are not as easily retrofitted, particularly when the dwelling does not have underfloor heating.

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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