

Home Energy Saving Grant Scheme



Home Energy Saving Grant Scheme (HES): an overview

By **Colin Bolger**, ORS Sustainable Energy Consultants, Mullingar, Co. Westmeath

Introduction

The Home Energy Saving (HES) scheme provides grants to homeowners who wish to improve the energy efficiency of their home in order to reduce energy use and costs as well as greenhouse gas emissions. The scheme is open to all owners of existing houses built before 2006 with Sustainable Energy Ireland administering the scheme. Landlords and owners of multiple properties may also apply to the scheme, but they must submit a separate application form for each property.

The Scheme itself

The scheme is aimed at middle-income homes and it is expected that energy savings of €700 per year can be achieved. Under the HES scheme, the government is offering grants of between €250 and €4,000 to improve insulation in Ireland's homes in order to save both money and reduce greenhouse gas emissions. These grants cover the installation of roof and cavity wall, internal and external wall insulation, which could save individuals up to €4,250 on insulation materials, and improve a home's BER score.

Six different types of work to houses to improve insulation are eligible under the scheme. There is a minimum level of investment required of householders to participate under the scheme of €500 which means that householders doing either attic insulation (grant of €250) or cavity wall insulation (grant of €400) will be required to carry out at least one other measure if they are to qualify. The estimates for payback on investment range from three years for attic insulation, to a maximum of 20 years for external wall insulation.

Grants are fixed for each type of measure as indicated in the table below. Grant approval must be in place before any purchase of materials or commencement of measures undertaken. Grants are paid after the measures are completed and the contractor has been paid by the homeowner. In the instance where the cost of the work (vat inclusive) is less than the fixed grant amount, the actual cost will be reimbursed.

MEASURE	CATEGORY	GRANT
Roof	Roof Insulation	€250
Wall	Cavity wall insulation	€400
	Internal Wall Dry-Lining	€2,500
	External wall insulation	€4,000
Heating Controls	High Efficiency Gas or Oil fired Boiler with Heating Controls	
	Upgrade	€700
	Heating Controls Upgrade	€500
BER Assessment	A <i>Before</i> works and an <i>After</i> works BER assessment	€200

Homeowners will have a choice between three forms: cavity wall; external; or internal. Cavity is the most economical and external the most expensive. The grant for cavity insulation is €400 which will be a third of the typical cost. Some €2,500 of the approximate €9,000 required for internal wall insulation will be grant-aided while €4,000 will be available of the approximate €19,000 needed for external wall insulation. Between €500 to €700 will be available for heating control upgrades.

In accordance with the scheme's Terms and Conditions, all works must be completed by a contractor from SEI Registered list, which is available on the SEI website.

External insulation works to your home under the Home Energy Saving scheme may be exempted from the planning code. However, it should be noted that external insulation of a structure would constitute exempted development under Section 4(1) (h) of the Planning and Development Act 2000 only if it “constituted works which do not materially affect the external appearance of the structure so as to render the appearance inconsistent with the character of the structure or of neighbouring structures”. If there is any doubt about whether or not the particular external insulation proposed for your home will affect the character of the structure as an SEI grant applicant you are advised to contact the planning authority in your area to clarify the matter.

How to Apply

For an application you can apply online at www.sei.ie/hes. Both the Guide and Form are available to download from the website at www.sei.ie/hes or upon request by calling SEI on 1850 927000. Applicants must ensure grant approval is received before proceeding with any product purchase or installation work. Homeowners availing of the BER grant may undertake the Before BER ahead of grant approval being in place which €200 will be paid towards a building energy rating assessment.

Sustainable Homes: Going Green

Introduction

Being sustainable in how you use energy has immediate benefits, it will save you money on your energy bills, your home will be more comfortable and convenient and you will also be making a contribution to reducing climate change.

Building form and orientation

The selection of a site which is exposed to the low-altitude winter sun can allow for passive solar heating. By selecting a location sheltered from the wind, heat loss from the building can be reduced. Shelter can be provided by nearby trees, adjacent buildings or surrounding hills. If no such shelter exists, it can be provided in time through planting trees or shrubs. In some, mainly rural, locations there may be potential for renewable energy sources other than solar or wind power or heat which can be extracted from the ground. A compact building form of minimum surface-to-volume ratio is best for reducing heat loss. Projections such as bay and dormer windows should be kept to a minimum, since by increasing the surface-to-

volume ratio of the building, they will increase heat loss and tend to be more difficult to insulate effectively.

Energy assessment

Many decisions affecting the energy performance of a house are taken early in the design process. During the design process a provisional BER cert should be carried out to calculate annual heating energy consumption and heat loss.

Insulation

Insulating to a higher standard than required in the Building Regulations is in most cases economically justified. It is better to have a good overall level of insulation than, for example, a highly insulated floor with an average roof insulation. Attention should be given to the avoidance of thermal bridges. This is where short circuits across insulation, typically around windows and doors, allow increased heat loss and possible condensation problems and is mainly a result of poor quality workmanship in installing insulation. To achieve the level of energy efficiency envisaged by the design, it is very important to ensure good quality workmanship and supervision during construction.

Ventilation

Adequate ventilation is essential to provide fresh air and to remove water vapour and smells. Too much ventilation during the colder months will cause energy wastage and discomfort due to draughts. Controlled vents should be installed in every room in the form of slot vents window frames which can be opened up or closed. Small fan vents allow for removal of moist air from kitchens and bathrooms, and prevent this air from condensing in cooler rooms such as bedrooms. New buildings are now required to meet a minimum level of air tightness to ensure that



the building is well sealed. Services should be designed with minimum penetration of pipes and cabling through the building's insulated shell. Porches and draught lobbies can reduce draughts as external doors never seal up a house completely, a minimum of fresh air is required for health and safety reasons. A balanced ventilation system involving fans, ductwork and a heat exchanger can transfer heat from warm stale outgoing air to incoming fresh air (this is called "mechanical ventilation with heat recovery"). Stale air is extracted from rooms such as kitchens and bathrooms, and warmed fresh air supplied to living rooms and bedrooms. For such systems to work well, the house must be well sealed. Correctly sized systems can reduce ventilation heat loss considerably.

Passive solar features

If the house is exposed to the low-altitude winter sun, glazing should be concentrated on the south facade. Window area on the north facade should be minimised to limit heat loss. The heating system should have a fast response time and good controls to maximise the usefulness of solar gains. Overheating protection in south-facing rooms in summer can be provided by overhanging eaves, blinds, natural ventilation. In general, it is not wise to increase south-facing glazed areas too dramatically. Otherwise additional measures will be required to avoid overheating in summer and excessive heat loss at night and on overcast days in winter. Windows should have a high resistance to heat loss. 'Low emissivity' double glazing, which has a special coating to reduce heat loss, is required. A well-designed sunspace or conservatory on the south side of a building can reduce the heating needs of a house by acting as a buffer against heat loss and collecting solar energy on fine days but many conservatories are poorly designed from an energy point of view. These type of rooms should not be regarded as being habitable all year round. The energy losses from one heated sunspace can negate the savings of ten unheated ones. Active solar heating systems, including a solar collector on a south-facing roof, can contribute to heating needs. A solar water heating system can provide about 60% of a family's annual hot water requirement, with back-up heating coming from the conventional system. A solar space heating system can contribute to heating needs, particularly in spring and autumn.

Building materials

The embodied energy of a product is the energy used to produce it, and includes energy used in extracting raw materials, processing and transport, e.g. Irish-grown timber will incur lower transport energy use than timber imported from overseas. The embodied energy of a house is typically over five times its annual energy consumption and therefore equates to approximately 5-10% of the total energy consumption during

the life of the house. The building materials selected should have minimum environmental impact during their entire life cycle, including manufacture, use and disposal. Building components should be designed for long life and durability, and ideally should be recyclable at the end of their operating lives. Energy efficient houses need smaller heating systems than conventional houses. The resulting savings will help to pay for the cost of additional insulation.

Boilers

The heating system should be efficient, not only at full load, but also at lower loads. If looking at oil or gas boilers, you should ensure that the boiler complies with the Building Regulations. In the case of gas boilers, you should consider condensing boilers, which cost a bit more but are highly energy-efficient.

Hot water systems

It is generally more energy-efficient to heat water using an efficient boiler or other fuel-burning appliance than with an electric immersion heater. The hot water cylinder should be well-insulated; factory applied insulation is more effective and durable than a lagging jacket. By locating the heating and hot water systems, including pipework, entirely within the insulated building shell, heat losses can become heat gains. Ensure good ventilation to the boiler and take account of fire regulations. Attention should be given to minimising the lengths of pipe runs and associated heat losses. Heating system controls should be installed to ensure that heat is provided only when and where it is needed. The Building Regulations require thermostatic radiator valves that allow control of temperatures in individual rooms. Separate time and temperature control in two or more zones is necessary where floor area is greater than 100m². Open fires, whether of the solid fuel or gas, are wasteful of energy, and even when they are not in use, the chimney gives rise to uncontrolled ventilation heat loss. A closed stove is preferable to an open fire in terms of controlled efficient heat.

Lighting and Appliances

Energy-efficient lamps and fittings should be chosen for all rooms where lights are likely to be switched on for long periods living rooms, kitchens, halls, security lighting etc. While a compact fluorescent lamp (CFL) costs more to buy than an ordinary tungsten bulb, the energy savings it will yield will more than recoup the investment over its long operating life. All fridges, freezers, washing machines and tumble dryers on display in shops are now required by law to display Energy Labels indicating their energy efficiency. These labels can assist the purchaser in selecting an energy efficient model. ■