

# Energy Performance Certificate

## Address of dwelling and other details

4 WESTHILL HEIGHTS,  
WESTHILL,  
AB32 6RY

Dwelling type:  
Name of approved organisation:  
Membership number:  
Date of certificate:  
Reference number:  
Total floor area:  
Main type of heating and fuel:

Detached bungalow  
Energy Assessor Scotland  
EES/006046  
15 August 2009  
0130-2436-2180-0101-1705  
117 m<sup>2</sup>  
Boiler and radiators, mains gas

## This dwelling's performance ratings

This dwelling has been assessed using the RdSAP 2005 methodology. Its performance is rated in terms of the energy use per square metre of floor area, energy efficiency based on fuel costs and environmental impact based on carbon dioxide (CO<sub>2</sub>) emissions. CO<sub>2</sub> is a greenhouse gas that contributes to climate change.

Energy Efficiency Rating		Environmental Impact (CO <sub>2</sub> ) Rating	
	Current	Potential	
Very energy efficient - lower running costs			Very environmentally friendly - lower CO <sub>2</sub> emissions
(92 plus) <b>A</b>			(92 plus) <b>A</b>
(81-91) <b>B</b>			(81-91) <b>B</b>
(69-80) <b>C</b>			(69-80) <b>C</b>
(55-68) <b>D</b>		<b>59</b>	(55-68) <b>D</b>
(39-54) <b>E</b>	<b>42</b>		(39-54) <b>E</b>
(21-38) <b>F</b>			(21-38) <b>F</b>
(1-20) <b>G</b>			(1-20) <b>G</b>
Not energy efficient - higher running costs			Not environmentally friendly - higher CO <sub>2</sub> emissions
<b>Scotland</b>	EU Directive 2002/91/EC		<b>Scotland</b>
			EU Directive 2002/91/EC

The energy efficiency rating is a measure of the overall efficiency of a home. The higher the rating the more energy efficient the home is and the lower the fuel bills are likely to be.

The environmental impact rating is a measure of a home's impact on the environment in terms of carbon dioxide (CO<sub>2</sub>) emissions. The higher the rating the less impact it has on the environment.

Approximate current energy use per square metre of floor area: 433 kWh/m<sup>2</sup> per year

Approximate current CO<sub>2</sub> emissions: 73 kg/m<sup>2</sup> per year

## Cost effective improvements

Below is a list of lower cost measures that will raise the energy performance of the dwelling to the potential indicated in the tables above. Higher cost measures could also be considered and these are recommended in the attached energy report.

- |                                      |   |
|--------------------------------------|---|
| 1 Increase loft insulation to 270 mm | 3 Low energy lighting for all fixed outlets |
| 2 Cavity wall insulation             |   |

A full energy report is appended to this certificate



Certification mark

Information from this EPC may be given to Energy Saving Trust to provide advice to householders on financial help available to improve home energy efficiency.

For advice on how to take action and to find out about offers available to make your home more energy efficient, call 0800 512 012 or visit [www.energysavingtrust.org.uk](http://www.energysavingtrust.org.uk)

**N.B. THIS CERTIFICATE MUST BE AFFIXED TO THE DWELLING AND NOT BE REMOVED UNLESS IT IS REPLACED WITH AN UPDATED VERSION**

## Energy Report

The Energy Performance Certificate and Energy Report for this dwelling were produced following an energy assessment undertaken by a member of Elmhurst Energy Systems Ltd. This is an organisation which has been approved by the Scottish ministers. The certificate has been produced under the Building (Scotland) Amendment Regulations 2006 and a copy of the certificate and this energy report have been lodged on a national register.

Assessor's name: Mr. John Mclaughlan  
 Company name/trading name: Energy Assessor Scotland  
 Address: 18 Queens Terrace, Ayrshire, Ayr, KA7 1DX  
 Phone number: 01292 610181  
 Fax number:  
 E-mail address: john@energyassessorscotland.co.uk  
 Related party disclosure:

### Estimated energy use, carbon dioxide (CO<sub>2</sub>) emissions and fuel costs of this home

	Current	Potential
Energy use	433 kWh/m <sup>2</sup> per year	298 kWh/m <sup>2</sup> per year
Carbon dioxide emissions	8.5 tonnes per year	5.9 tonnes per year
Lighting	£119 per year	£59 per year
Heating	£1,170 per year	£796 per year
Hot water	£196 per year	£196 per year

Based on standardised assumptions about occupancy, heating patterns and geographical location, the above table provides an indication of how much it will cost to provide lighting, heating and hot water to this home. The fuel costs only take into account the cost of fuel and not any associated service, maintenance or safety inspection. This certificate has been provided for comparative purposes only and enables one home to be compared with another. Always check the date the certificate was issued, because fuel prices can increase over time and energy saving recommendations will evolve.

### About the building's performance ratings

The ratings on the certificate provide a measure of the building's overall energy efficiency and its environmental impact, calculated in accordance with a national methodology that takes into account factors such as insulation, heating and hot water systems, ventilation and fuels used.

Not all buildings are used in the same way, so energy ratings use 'standard occupancy' assumptions which may be different from the specific way you use your home.

Buildings that are more energy efficient use less energy, save money and help protect the environment. A building with a rating of 100 would cost almost nothing to heat and light and would cause almost no carbon emissions. The potential ratings in the certificate describe how close this building could get to 100 if all the cost effective recommended improvements were implemented.

### About the impact of buildings on the environment

One of the biggest contributors to global warming is carbon dioxide. The way we use energy in buildings causes emissions of carbon. The energy we use for heating, lighting and power in homes produces over a quarter of the UK's carbon dioxide emissions and other buildings produce a further one-sixth.

The average household causes about 6 tonnes of carbon dioxide every year. Adopting the recommendations in this report can reduce emissions and protect the environment. You could reduce emissions even more by switching to renewable energy sources. In addition there are many simple everyday measures that will save money, improve comfort and reduce the impact on the environment. Some examples are given at the end of this report.

### Summary of this home's energy performance related features

The following is an assessment of the key individual elements that have an impact on this home's performance rating. Each element is assessed against the following scale: Very poor / Poor / Average / Good / Very good.

Elements	Description	Current performance	
		Energy Efficiency	Environmental
Walls	Cavity wall, as built, no insulation (assumed)	Poor	Poor
Roof	Pitched, 50 mm loft insulation	Poor	Poor
Floor	Suspended, no insulation (assumed)	-	-
Windows	Fully double glazed	Average	Average
Main heating	Boiler and radiators, mains gas	Good	Good
Main heating controls	Programmer, TRVs and bypass	Poor	Poor
Secondary heating	Room heaters, mains gas	-	-
Hot water	From main system, no cylinderstat	Average	Average
Lighting	No low energy lighting	Very poor	Very poor
Current energy efficiency rating		E 42	
Current environmental impact (CO <sub>2</sub> ) rating		F 37	

### Low and zero carbon energy sources

These are sources of energy (producing or providing electricity or hot water) which emit little or no carbon dioxide into the atmosphere. There are none applicable to this home.

### Recommended measures to improve this home's energy performance

The measures below are cost effective. The performance ratings after improvement listed below are cumulative, that is they assume the improvements have been installed in the order that they appear in the table. However you should check the conditions in any covenants, warranties or sale contracts, and whether any legal permissions are required such as a building warrant, planning consent or listed building restrictions.

Lower cost measures (up to £500)	Typical savings per year	Performance ratings after improvement	
		Energy efficiency	Environmental impact
1 Increase loft insulation to 270 mm	£131	E 46	E 41
2 Cavity wall insulation	£258	D 57	E 51
3 Low energy lighting for all fixed outlets	£44	D 59	E 52
<b>Sub-total</b>	<b>£433</b>		
<b>Higher cost measures (over £500)</b>			
4 Replace boiler with Band A condensing boiler	£203	D 68	D 62
<b>Total</b>	<b>£636</b>		
<b>Potential energy efficiency rating</b>		<b>D 68</b>	
<b>Potential environmental impact (CO<sub>2</sub>) rating</b>			<b>D 62</b>

### Further measures to achieve even higher standards

The further measures listed below should be considered in addition to those already specified if aiming for the highest possible standards for this home. Some of these measures may be cost-effective when other building work is being carried out such as an alteration, extension or repair. Also they may become cost-effective in the future depending on changes in technology costs and fuel prices. However you should check the conditions in any covenants, warranties or sale contracts, and whether any legal permissions are required such as a building warrant, planning consent or listed building restrictions.

5 Solar water heating	£25	C 69	D 64
6 Solar photovoltaic panels, 2.5 kWp	£167	C 77	C 72
7 Wind turbine	£49	C 80	C 74
<b>Enhanced energy efficiency rating</b>		<b>C 80</b>	
<b>Enhanced environmental impact (CO<sub>2</sub>) rating</b>			<b>C 74</b>

Improvements to the energy efficiency and environmental impact ratings will usually be in step with each other. However, they can sometimes diverge because reduced energy costs are not always accompanied by a reduction in carbon dioxide (CO<sub>2</sub>) emissions.

## About the cost effective measures to improve this home's energy ratings

If you are a tenant, before undertaking any work you should check the terms of your lease and obtain approval from your landlord if the lease either requires it, or makes no express provision for such work. ----

### Lower cost measures (typically up to £500 each)

These measures are relatively inexpensive to install and are worth tackling first. Some of them may be installed as DIY projects. DIY is not always straightforward, and sometimes there are health and safety risks, so take advice before carrying out DIY improvements.

#### 1 Loft insulation

Loft insulation laid in the loft space or between roof rafters to a depth of at least 270 mm will significantly reduce heat loss through the roof; this will improve levels of comfort, reduce energy use and lower fuel bills. Insulation should not be placed below any cold water storage tank, any such tank should also be insulated on its sides and top, and there should be boarding on battens over the insulation to provide safe access between the loft hatch and the cold water tank. The insulation can be installed by professional contractors but also by a capable DIY enthusiast. Loose granules may be used instead of insulation quilt; this form of loft insulation can be blown into place and can be useful where access is difficult. The loft space must have adequate ventilation to prevent dampness; seek advice about this if unsure. Further information about loft insulation and details of local contractors can be obtained from the National Insulation Association ([www.nationalinsulationassociation.org.uk](http://www.nationalinsulationassociation.org.uk)). It should be noted that building standards may apply to this work.

#### 2 Cavity wall insulation

Cavity wall insulation, to fill the gap between the inner and outer layers of external walls with an insulating material, reduces heat loss; this will improve levels of comfort, reduce energy use and lower fuel bills. The insulation material is pumped into the gap through small holes that are drilled into the outer walls, and the holes are made good afterwards. As specialist machinery is used to fill the cavity, a professional installation company should carry out this work, and they should carry out a thorough survey before commencing work to ensure that this type of insulation is suitable for this home and its exposure. They should also provide a guarantee for the work and handle any building standards issues. Further information about cavity wall insulation and details of local installers can be obtained from the National Insulation Association ([www.nationalinsulationassociation.org.uk](http://www.nationalinsulationassociation.org.uk)).

#### 3 Low energy lighting

Replacement of traditional light bulbs with energy saving recommended ones will reduce lighting costs over the lifetime of the bulb, and they last up to 12 times longer than ordinary light bulbs. Also consider selecting low energy light fittings when redecorating; contact the Lighting Association for your nearest stockist of Domestic Energy Efficient Lighting Scheme fittings.

### Higher cost measures (typically over £500 each)

#### 4 Band 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 property. This improvement is most appropriate when the existing central heating boiler needs repair or replacement, but there may be exceptional circumstances making this impractical. Condensing boilers need a drain for the condensate which limits their location; remember this when considering remodelling the room containing the existing boiler even if the latter is to be retained for the time being (for example a kitchen makeover). Building regulations may apply to this work, so it is best to obtain advice from your local authority building standards department and from a qualified heating engineer.

## About the further measures to achieve even higher standards

Further measures that could deliver even higher standards for this home. You should check the conditions in any covenants, planning conditions, warranties or sale contracts before undertaking any of these measures. If you are a tenant, before undertaking any work you should check the terms of your lease and obtain approval from your landlord if the lease either requires it, or makes no express provision for such work.

#### 5 Solar water heating

A solar water heating panel, usually fixed to the roof, uses the sun to pre-heat the hot water supply. This will significantly reduce the demand on the heating system to provide hot water and hence save fuel and money. The Solar Trade Association has up-to-date information on local installers and any grant that may be available or call 0800 512 012 (Energy Saving Trust). Building regulations may apply to this work.

#### 6 Solar photovoltaic (PV) panels

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A solar 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 in the same way as the electricity purchased from an energy supplier. The British Photovoltaic Association has up-to-date information on local installers who are qualified electricians and on any grant that may be available, or call 0800 512 012 (Energy Saving Trust). Planning restrictions may apply in certain neighbourhoods and you should check this with the local authority. Building regulations may apply to this work, so it is best to obtain advice from your local authority building standards department and from a suitably qualified electrician.

### 7 Wind turbine

A wind turbine provides electricity from wind energy. This electricity is used throughout the home in the same way as the electricity purchased from an energy supplier. The British Wind Energy Association has up-to-date information on suppliers of small-scale wind systems and any grant that may be available, or call 0800 512 012 (Energy Saving Trust). Wind turbines are not suitable for all properties. The system's effectiveness depends on local wind speeds and the presence of nearby obstructions, and a site survey should be undertaken by an accredited installer. Planning restrictions and/or building regulations may apply and you should check this with the local authority.

## What can I do today?

Actions that will save money and reduce the impact of your home on the environment include:

- Ensure that you understand the dwelling and how its energy systems are intended to work so as to obtain the maximum benefit in terms of reducing energy use and CO<sub>2</sub> emissions.
- If you have a conservatory or sunroom, avoid heating it in order to use it in cold weather and close doors between the conservatory and dwelling.
- Check that your heating system thermostat is not set too high (in a home, 21°C in the living room is suggested) and use the timer to ensure you only heat the building when necessary.
- Make sure your hot water is not too hot - a cylinder thermostat need not normally be higher than 60°C.
- Turn off lights when not needed and do not leave appliances on standby. Remember not to leave chargers (e.g. for mobile phones) turned on when you are not using them.
- If you're not filling up the washing machine, tumble dryer or dishwasher, use the half-load or economy programme. Minimise the use of tumble dryers and dry clothes outdoors where possible.
- Close your curtains at night to reduce heat escaping through the windows.