

## Address of dwelling and other details

32 WINDSOR ROAD  
KIRKHILL  
PENICUIK  
EH26 8EA

Dwelling type: Semi-detached house  
Name of approved organisation: Elmhurst Energy Systems Ltd  
Membership number: EES/008367  
Date of certificate: 29 September 2011  
Reference number: 3400-8814-0729-4221-1193  
Type of assessment: RdSAP, existing dwelling  
Total floor area: 76 m<sup>2</sup>  
Main type of heating and fuel: Boiler and radiators, mains gas

## This dwelling's performance ratings

This dwelling has been assessed using the RdSAP 2009 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

|  | Current                 | Potential |
|--|-------------------------|-----------|
| <i>Very energy efficient - lower running costs</i> |                         |           |
| (92 plus) <b>A</b>                                 |                         |           |
| (81-91) <b>B</b>                                   |                         |           |
| (69-80) <b>C</b>                                   |                         |           |
| (55-68) <b>D</b>                                   | <b>55</b>               | <b>61</b> |
| (39-54) <b>E</b>                                   |                         |           |
| (21-38) <b>F</b>                                   |                         |           |
| (1-20) <b>G</b>                                    |                         |           |
| <i>Not energy efficient - higher running costs</i> |                         |           |
| <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.

Approximate current energy use per square metre of floor area: 304 kWh/m<sup>2</sup>per year

Approximate current CO<sub>2</sub>emissions: 58 kg/m<sup>2</sup>per year

### Environmental Impact (CO<sub>2</sub>) Rating

|  | Current                 | Potential |
|--|-------------------------|-----------|
| <i>Very environmentally friendly - lower CO<sub>2</sub>emissions</i> |                         |           |
| (92 plus) <b>A</b>   |                         |           |
| (81-91) <b>B</b>   |                         |           |
| (69-80) <b>C</b>   |                         |           |
| (55-68) <b>D</b>   |                         |           |
| (39-54) <b>E</b>   | <b>51</b>               | <b>57</b> |
| (21-38) <b>F</b>   |                         |           |
| (1-20) <b>G</b>  |                         |           |
| <i>Not environmentally friendly - higher CO<sub>2</sub>emissions</i> |                         |           |
| <b>Scotland</b>  | EU Directive 2002/91/EC |           |

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.

## 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 Upgrade heating controls |
| 2 Low energy lighting for all fixed outlets |                            |

*A full energy report is appended to this certificate*



Remember to look for the Energy Saving Trust Recommended logo when buying energy-efficient products. It's a quick and easy way to identify the most energy-efficient products on the market.

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

## 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. Keith Bressay Gifford  
Company name/trading name: Hardies Chartered Surveyors  
Address: 19 South Street Dalkeith EH22 1AH  
Phone number: 0131 663 2780  
Fax number: 0131 660 4594  
E-mail address: keith.gifford@hardies.co.uk  
Related party disclosure: No related party

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

|                          | Current                         | Potential                       |
|--------------------------|---------------------------------|---------------------------------|
| Energy use               | 304 kWh/m <sup>2</sup> per year | 263 kWh/m <sup>2</sup> per year |
| Carbon dioxide emissions | 4.5 tonnes per year             | 3.9 tonnes per year             |
| Lighting                 | £73 per year                    | £41 per year                    |
| Heating                  | £692 per year                   | £621 per year                   |
| Hot water                | £142 per year                   | £132 per year                   |

The figures in the table above have been provided to enable prospective buyers and tenants to compare the fuel costs and carbon emissions of one home with another. To enable this comparison the figures have been calculated using standardised running conditions (heating periods, room temperatures, etc.) that are the same for all homes, consequently they are unlikely to match an occupier's actual fuel bills and carbon emissions in practice. The figures do not include the impacts of the fuels used for cooking or running appliances, such as TV, fridge etc.; nor do they reflect the costs associated with service, maintenance or safety inspections. Always check the certificate date because fuel prices can change over time and energy saving recommendations will evolve.

### About the building's performance ratings

The ratings on the certificate provide a measure of the buildings 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 table below gives an assessment of the key individual elements that have an impact on this home's energy and environmental performance. Each element is assessed by the national calculation methodology; 1 star = very poor (least efficient), 2 stars = poor, 3 stars = average, 4 stars = good and 5 stars = very good (most efficient). The assessment does not take into consideration the physical condition of any element. 'Assumed' means that the insulation could not be inspected and an assumption has been made in the methodology based on age and type of construction

| Element               | Description                                 | Current performance |               |
|-----------------------|---|---------------------|---------------|
|                       |   | Energy Efficiency   | Environmental |
| Walls                 | System built, with external insulation      | ★★★★☆               | ★★★★☆         |
| Roof                  | Pitched, 50 mm loft insulation              | ★★☆☆☆               | ★★☆☆☆         |
| Floor                 | Suspended, no insulation (assumed)          | —                   | —             |
| Windows               | Single glazed                               | ★★☆☆☆               | ★★☆☆☆         |
| Main heating          | Boiler and radiators, mains gas             | ★★★★☆               | ★★★★☆         |
| Main heating controls | Programmer, TRVs and bypass                 | ★★★☆☆               | ★★★☆☆         |
| Secondary heating     | Room heaters, mains gas                     | —                   | —             |
| Hot water             | From main system                            | ★★★★☆               | ★★★★☆         |
| Lighting              | Low energy lighting in 25% of fixed outlets | ★★★☆☆               | ★★★☆☆         |

Current energy efficiency rating

D 55

Current environmental impact (CO<sub>2</sub>) rating

E 51

## 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 homes 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. The indicative costs are representative for most properties but may not apply in a particular case.

| Lower cost measures                         | Indicative Cost | Typical savings per year | Ratings after improvement |                      |
|---|-----------------|--------------------------|---------------------------|----------------------|
|   |                 |                          | Energy Efficiency         | Environmental Impact |
| 1 Increase loft insulation to 270 mm        | £100 - £300     | £49                      | D 57                      | E 54                 |
| 2 Low energy lighting for all fixed outlets | £15             | £25                      | D 59                      | D 55                 |
| 3 Upgrade heating controls                  | £350 - £450     | £37                      | D 61                      | D 57                 |
| Sub-Total                                   |                 | £111                     |                           |                      |
| Higher cost measures                        |                 |                          |                           |                      |
| 4 Replace boiler with new condensing boiler | £1,500 - £3,500 | £47                      | D 63                      | D 60                 |
| Total                                       |                 | £158                     |                           |                      |

Potential energy efficiency rating **D 63**

Potential environmental impact (CO<sub>2</sub>) rating **D 60**

## 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. The indicative costs are representative for most properties but may not apply in a particular case.

|   |                   |      |      |      |
|---|-------------------|------|------|------|
| 5 Solar water heating                                     | £4,000 - £6,000   | £38  | D 65 | D 63 |
| 6 Replace single glazed windows with low-E double glazing | £2,500 - £6,500   | £90  | C 69 | C 69 |
| 7 Solar photovoltaic panels, 2.5 kWp                      | £11,000 - £20,000 | £214 | C 80 | C 79 |

Enhanced energy efficiency rating **C 80**

Enhanced environmental impact (CO<sub>2</sub>) rating **C 79**

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 performance 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

These measures are relatively inexpensive to install and are worth tackling first. The indicative costs of measures included earlier in this EPC include the costs of professional installation in most cases. 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 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.

#### 3 Heating controls (room thermostat)

The heating system should have a room thermostat to enable the boiler to switch off when no heat is required. A competent heating engineer should be asked to do this work. Insist that the thermostat switches off the boiler as well as the pump and that the thermostatic radiator valve is removed from any radiator in the same room as the thermostat. 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. Building regulations may apply to this work. You could be eligible for Renewable Heat Incentive payments which could appreciably increase the savings beyond those shown on your EPC, provided that both the product and the installer are certified by the Microgeneration Certification Scheme (or equivalent). Details of local MCS installers are available at [www.microgenerationcertification.org](http://www.microgenerationcertification.org).

#### 6 Double glazing

Double glazing is the term given to a system where two panes of glass are made up into a sealed unit. Replacing existing single-glazed windows with double glazing will improve comfort in the home by reducing draughts and cold spots near windows. Double-glazed windows may also reduce noise, improve security and combat problems with condensation. Building standards may apply to this work, so it is best to obtain advice from your local authority building standards department.

#### 7 Solar photovoltaic (PV) panels

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. 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. The assessment does not include the effect of any Feed-in Tariff which could appreciably increase the savings that are shown on this EPC for solar photovoltaic panels, provided that both the product and the installer are certified by the Microgeneration Certification Scheme (or equivalent). Details of local MCS installers are available at [www.microgenerationcertification.org](http://www.microgenerationcertification.org).

### 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.
- Close your curtains at night to reduce heat escaping through the windows.
- 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.
- Check the draught-proofing of windows and replace it if appropriate.
- If you have unused open chimneys consider blocking them off (making provision for a ventilation opening and a cowl on top of the chimney to avoid dampness).

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