

CARE HOME ENERGY GUIDE 2017



UTILITIES FOR HEALTH CARE

About Our Care Home Energy Guide

The following guide is intended as a brief illustration of the energy usage of care and nursing homes.

The guide introduces energy efficiency methods that may help to reduce fuel costs and avoid waste.

Our intention is to ensure a comfortable and warm environment for residents whilst keeping fuel costs as low as possible.

By improving energy management and general housekeeping processes fuel bills can be significantly lowered. It is not an expensive method of starting the energy conversation and the savings will pay for themselves in a relatively short time.



If you are minded to there are other measures that can also be instigated via general structural improvements or refurbishments.

The estimated savings from energy efficiency initiatives are typically:

- About 10 % for good housekeeping and energy management
- 10 -40 % for a comprehensive package of low cost measures including supplier negotiation

The benefits of an Energy Efficiency Initiative are therefore:

- Lower fuel bills
- Comfort in the home maintained to a high standard
- Reduction of environmentally damaging emissions

HOW DOES YOUR HOME PERFORM?



Follow the steps below to identify the energy performance of your home.

Step 1 Obtain fuel bills for previous 12 months or a full statement

Step 2 Work out your annual fuel consumption, separating electricity from gas or oil. Consumption can be measured in terms of fuel used, or cost. This information will be on your bills

Fuel use: Generally, mains gas and electricity consumption in kWh can be read directly from fuel bills.

Fuel cost: Read directly from your bills, but remember to exclude any standing charges

Step 3 Measure the floor area of the home in square metres (m²). If this is not practical, simply count the number of bed spaces in the home (*This figure uses an average floor area of 40m² per bed space and will be less accurate

Step 4 Divide your electricity and gas or oil use by either floor area or number of bed spaces



HOW TO CATEGORISE YOUR HOME

Once you have carried out the instructions you have the information required to categorise your home.

The following examples, using annual energy use and annual energy costs, will help you:

- If the total consumption of gas or oil in the home is 120 000 kWh per year and the floor area is unknown but there are 10 bed spaces, then the annual consumption is 12 000 kWh/bed
- Figure 1 shows that the home would therefore fall into the fair category for gas/oil consumption

It should be noted that, due to climate differences, homes located in southern England should require less space heating fuel and should therefore expect to perform slightly better than the average.

Similarly homes in northern Scotland may perform slightly worse than average due to the colder northern climate.

Conversion of fuel use into kWh Energy will be supplied to the home in the form of gas or oil and electricity. In order to compare energy use with the values shown in figure 1, each fuel must be converted into units of kWh. If the energy use shown on your fuel bills is not in units of kWh, then the following factors should be used for conversion:

Multiply by

1 M J 0.278 1 therm * 29.3

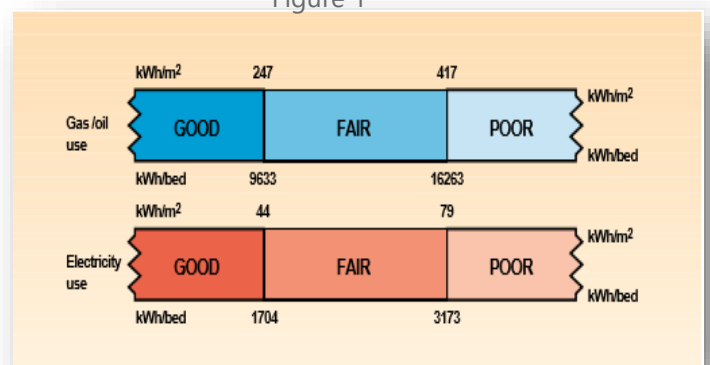
100 ft³ of natural gas * 30.0

1 tonne of liquefied petroleum gas (LPG) *13.78

1 litre of gas oil (35 sec) *10.6

1 litre light fuel oil (200 sec) *11.2

Figure 1



Energy and the environment

The burning of fossil fuels – coal, gas and oil – to generate energy also releases a number of environmentally damaging gases into the atmosphere. These include carbon dioxide (CO₂), which is primarily responsible for global warming, and oxides of sulphur and nitrogen which cause acid rain. The following shows the CO₂ emissions associated with various fuels:

Gas 0.21 kg/kWh of fuel used

Oil 0.29 kg/kWh of fuel used

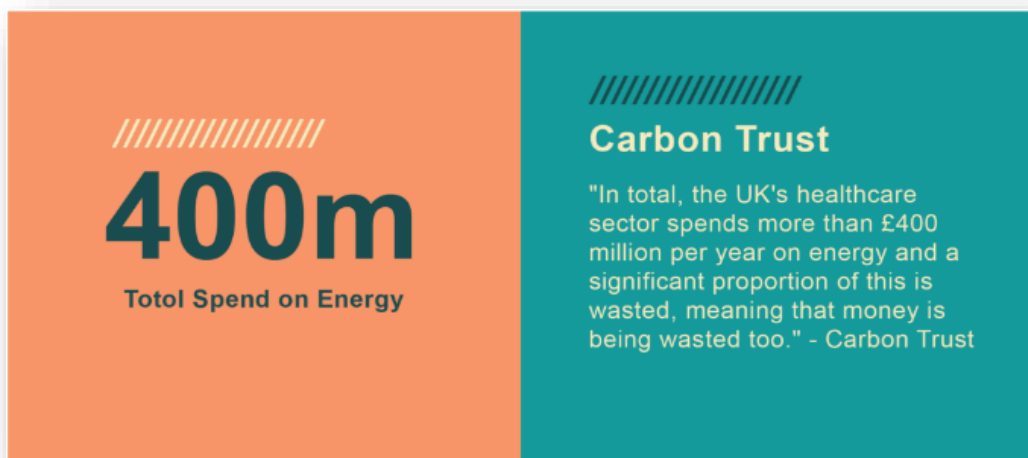
Electricity 0.70 kg/kWh of fuel used

A typical 30 bed care home categorised as fair, using 320 kWh/m² of gas and 50 kWh/m² of electricity would be responsible for the emission of over 120 tonnes of CO₂ every year.



It is worth noting that the CO₂ emission associated with the use of 1 kWh of electricity is more than three times that for 1 kWh of gas.

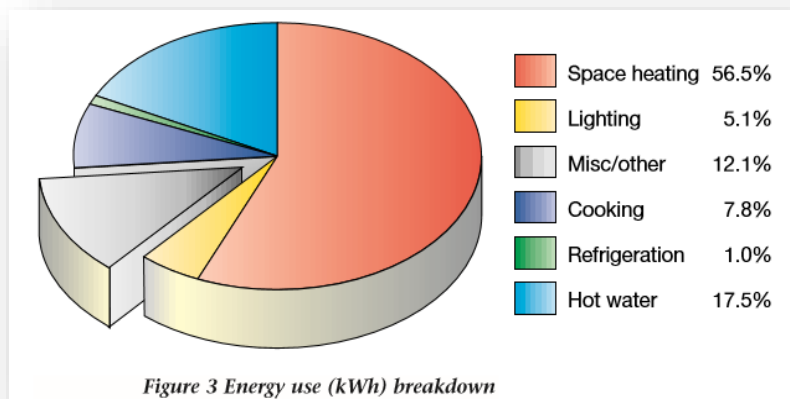
Savings in electricity consumption, no matter how small, will therefore produce greater environmental benefits than similar savings in gas or oil.



BREAKDOWN OF ENERGY USE

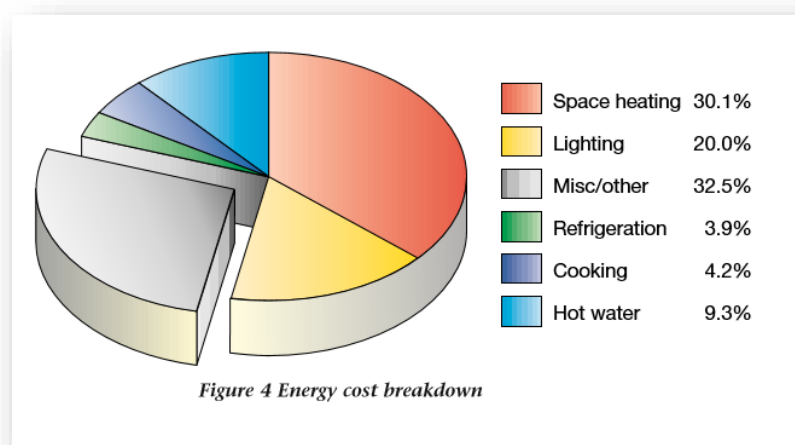
To enable an effective plan of action to be made it is important to understand where energy is used in the care home.

Figures 3 and 4 show the average fuel cost and consumption broken down according to use.



The miscellaneous category includes uses such as laundry, and small power such as televisions and hair driers.

It is clear that the most significant energy use is *space heating*, accounting for 57% of total use, and hot water generation which accounts for 18%. Lighting, whilst accounting for only 5% of energy use, actually makes up 20% of the total energy cost. Lighting forms a greater proportion of total fuel costs than domestic hot water generation. The figures highlight the fact that where electricity is used, for example for refrigeration and lighting, it makes up a proportionately larger amount of total fuel costs than gas or oil.



HOW TO REDUCE FUEL BILLS IN CARE HOMES

It is possible to make considerable savings in fuel bills in a care home, often for little or no cost, by managing energy use and using energy efficiently. Introducing energy efficient improvements during day-to-day maintenance or as part of refurbishment will also give fuel bill savings.

GOOD ENERGY HOUSEKEEPING

Using this Guide to compare the gas or oil and electricity use of the home with other homes is a major step in the management of fuel costs. It is important to read gas and electricity meters regularly, for example at least at the end of every month, and calculate how much fuel has been used. Plotting these figures on a graph such as the one illustrated will highlight significant changes.

If any increase cannot be explained by, for example colder weather, then it is appropriate to investigate further. Reasons for an increase in fuel bills may include:

- Heating and hot water thermostats set too high and timer settings changed
- Equipment left on or windows left open
- Insulation damaged or misplaced

Once monitoring has been carried out for more than 12 months you can compare readings with previous years to achieve year-on-year reductions in energy consumption in the home.

Other ways of managing fuel bills include:



- Speaking with an independent energy consultant
- Carrying out an energy efficiency survey in the home
- Running an energy saving campaign
- Incorporating energy efficiency in general maintenance surveys
- Checking equipment use
- Carrying out regular building energy checks

ENERGY EFFICIENT IMPROVEMENTS

Energy efficient improvements will reduce fuel bills while ensuring the same or better levels of comfort for residents. Many of these measures cost very little and pay for themselves in a short time. These measures can be addressed as part of:

- General maintenance
- Planned improvements
- Major works during refurbishment

General maintenance and housekeeping Energy efficiency in maintenance includes:

- Keeping thermostats and programmers set correctly
- Repairing dripping hot water taps
- Ensuring doors and windows close properly
- Checking draughtstripping on doors and windows
- Avoiding the use of supplementary electric heaters
- Repairing damaged or misplaced hot water cylinder and pipe insulation
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OPPORTUNITIES FOR ENERGY IMPROVEMENTS

Planned improvements Planned low-cost improvements could include:

- Installing draught stripping
- Fitting push-button light switches in cupboards and storerooms
- Replacing conventional bulbs with compact fluorescent bulbs or fluorescent strip lighting
- Installing thermostats and thermostatic radiator valves
- Improving loft, pipe and hot water cylinder insulation
- Installing cavity wall insulation
- Installing night temperature setback for the heating system. Energy improvements may also be carried out as part of a general refurbishment

Energy improvements in refurbishment Refurbishing any part of a home is an important time to consider energy efficiency improvements.

They can often be included at relatively little extra cost, with considerable benefits.

Improvements could include:

- Insulating solid walls in older homes (built before the 1940s)
- Installing a condensing boiler when replacing the heating system
- Fitting heating controls such as weather compensation
- Installing new lighting controls
- Fitting double glazing (when replacing windows) fitting trickle vents
- Decentralising the domestic hot water
- Using energy efficient appliances

FUEL COSTS AND TARIFFS

Fuel costs will vary between different regions. In addition, different regional electricity companies offer a range of tariffs. If a significant proportion of electricity is used at night or during the weekend there may be a tariff available which could reduce the electricity bill for the home.

Larger homes may also benefit from switching to a monthly billing system. Discounts are also usually available if bills are paid by direct debit. Contact an Energy consultant for further information.

We hope you have found our guide helpful and if you would like to learn more please feel free to contact us anytime save@utilitiesforhealthcare.co.uk to arrange a free energy audit so you can carry on with providing amazing care.

