

Western isles Forum of Tenant and Residents' Associations

TPAS Annual Conference

Report and Fuel Poverty Handout

Alasdair Mackenzie



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TPAS Annual Conference & AGM 2011

Once again the TPAS conference and AGM was held in the Apex City Quay Hotel in Dundee with, in the region of 350 delegates attending from all over Scotland, The Western Isles were well represented once again with 4 members from WIFTRA and a further 4 from the Cearn Community Association attending. The conference was held over the weekend of the 21st to 23rd October with the AGM held as usual on the Friday afternoon, there being no changes to the Committee from last year, with our Calum (Barney) Mackay remaining on the committee for yet another year.

The programme for the conference was as usual well planned out, with workshop sessions, and plenary sessions before lunch then plenary sessions and a further workshop session after lunch, with the plenary sessions being "Scottish Housing Regulator, & Scottish Housing Charter, both were well attended and most informative.

The workshop sessions were wide and varied, ranging from engaging with Gypsy travellers, public speaking for tenants, getting people involved, how can housing associations deal with complaints and fuel poverty to name but a few. One of the sessions that I in particular found most interesting was the one on Fuel poverty, in which it was revealed that 900,000 Scottish households (1 in 4) are in fuel poverty (spending 10% or more of their income on fuel, and that 1 in 10 households are in extreme fuel poverty (spending 20% or more on fuel), there are many ways which the householder, and landlord can help with this situation, the landlord can help, as in the Western Isles by embarking on a program of cavity wall and loft insulation for suitable properties, a simple way that the Tenant can help is by monitoring the temperature in the house this can be done by placing a free thermometer in the living room, which the electricity companies have produced and if the temperature is over 21° centigrade, turn down the output of your heaters instead of opening doors or windows. The other ways a tenant can cut their fuel bills are by ensuring they are on the best Tariff, currently there are over 400 different tariffs, also changing the energy supplier may pay benefits, with possible lower tariffs and also some suppliers give customers incentives to change.

I believe fuel poverty to be a very big issue in the Western Isles and would recommend information being sent out to tenants, as this could have a positive benefit to HHP in the respect that if tenants have more money in their pockets due to paying less for their electricity, this could have a positive impact on the level of rent arrears.

I also enclose the hand-out from the fuel poverty workshop.

Alasdair Mackenzie Vice-chair WIFTRA

Every thing you need to know about Energy

2011



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1. Billing and Payment

Who supplies electricity and gas to the home?

To find out who supplies a home with electricity or gas contact the following companies:

Electricity: Southern Scotland **0845 270 9101**
Northern Scotland **0845 026 2554**

Gas:
Scotland **0845 601 3048**

What next – setting up an account?

- First, phone the electricity and/or gas supplier with the meter readings as the previous tenant might not have given a final reading and it's important to make sure that the new tenant's bills are accurate right from the start of their tenancy. **If the home already has a prepayment meter, ask the supplier to ensure that any debts outstanding from a previous customer are cleared from the meter.**
- If the householder wants to change their supplier, they do not usually need their landlord's permission, but it may be advisable to check first because some landlords have contracts with suppliers.

Why Change?

Changing energy supplier can be one of the easiest ways to save money, but it is worth shopping around for the best deals – that includes asking the current supplier whether the bill payer is on the best tariff they offer.

There are many different tariffs to choose from. If there is access to the internet, try using one of the independent price comparison websites. These list most of the tariffs available. Online deals are often amongst the cheapest.

Dual Fuel

If the householder's new home has both electricity and gas, they should consider buying both fuels from the same supplier because they may get a further discount.

Consumer Direct

Alternatively, ask for independent price factsheets from Consumer Direct.

For access to approved comparison websites: contact

Consumer Direct **08454 04 05 06**

Or look at www.moneysupermarket.com or moneysavingsexpert.com
(Martin Lewis web site)

Important points to note whilst switching supplier

- The householder must keep a note of their meter readings during the transfer process to ensure they are billed correctly by both their existing and new supplier(s).
- **However, if the householder has a debt of more than £200 with their current energy supplier that has been outstanding for 28 days or more they may prevent a transfer.**

How to pay for fuel

There are several different ways to pay for energy. Therefore it is important to choose the method of payment that suits the householder's circumstances – there are difficulties as well as benefits associated with all payment arrangements.

Meters and How to Read Them:

Electricity Meters

- There are three types of electricity meter in common use – standard (credit),
- variable rate (credit)
- prepayment meters

Standard (credit) meters: A standard meter usually measures electricity consumption in terms of kilowatt-hours – the amount of energy used by a load of one kilowatt over the period of one hour. With this type of meter, all electricity units are charged at the same rate, 24 hours a day.

Variable rate meters: Variable rate meters operate on the same principle as standard meters, but give more than one reading, i.e. for daytime/standard electricity usage, and for overnight/off-peak electricity usage.

Prepayment meters: Prepayment meters accept tokens/keys or cards that can be 'topped up' at a variety of local outlets. If a customer stops paying for electricity, the electricity supply can be cut off by a relay fitted into the meter. Prepayment meters are for both standard and off-peak supplies.

Gas Meters

There are two types of meter in common use – credit and prepayment meters.

Credit Meters

The majority of gas customers have a credit meter which records the amount of gas used. Gas consumption is measured in units. For many older meters –

imperial meters – gas usage is measured in cubic feet. For newer metric meters, gas usage is measured in cubic metres. These gas units need to be converted into kilowatt hours by:

- Multiplying units used by 2.83 to give the number of cubic metres of gas used (if the meter is a newer metric one measuring gas in cubic metres this part of the calculation is not needed)
- Multiply by the temperature and pressure figure (1.02264)
- Multiply by calorific value (approximately 39.25, though the exact calorific value can be found on a gas bill)
- Divide by 3.6 to get the number of kilowatt hours (kWh)

Prepayment Meters

Prepayment meters accept tokens/keys or cards that can be ‘topped up’ at a variety of local outlets. **If a customer stops paying for gas, the supply can be cut off by a relay fitted into the meter.**

Recognising Types of Meter

Digital Meters:

- These should be read from left to right
- Electricity and gas metric meters have five numbers in a row whilst old-style gas imperial meters have four numbers in a row.
- Always ignore the red digit when recording a meter reading.

Dial Meters:

Dial meters are less common and more difficult to read.

- If the householder has one of these meters they may wish to contact an energy advisor from the local council or from the local Energy Saving Scotland advice centre for assistance in recording meter readings. Telephone free on **0800 512 012**.

Off-Peak Meters:

- If the householder has electric central heating there will be either one or two meters showing up to three sets of numbers.
- Electricity is usually charged at two different rates with a night (off peak) rate considerably cheaper than a day (peak) rate.
- It may be worth using certain electrical appliances, such as the washing machine, during the cheaper night hours

- If there are three sets of numbers, all the electricity for heating is recorded separately at a 'control' rate.
- All the electricity used for lighting and appliances is recorded at day or night rates, depending on time of use.

Reading a Meter

Credit Meters:

The majority of credit meters are digital i.e. a straight row of numbers. All digital meters are read in the same way. For electricity and for modern gas meters which measure intake in cubic metres read the first five digits. For older gas meters which measure in cubic feet only the first four digits should be read. Meters should be read from left to right. Zeros should be included, but red number(s) or any number(s) after a decimal point should be ignored. However some older types are 'dial' meters. These have rows of dials with pointers which move from 0 – 9 which should be read from left to right. For electricity read all five dials, ignoring the final (usually red) dial. The majority of gas dial meters have been replaced with newer meters. However, imperial (cubic feet) gas dial meters should be read in the same way, but there are only four dials.

Prepayment Meters:

Visual displays are available usually by pressing a button. The display will 'scroll' through a cycle to show:

- Fuel used
- Fixed charges (if applicable)
- Rate(s) per unit of fuel
- Credit inserted (meter top-ups)
- Current credit
- Outstanding debt (if applicable)
- Debt repayments per week
- Emergency credit level

Different makes and models of prepayment meter may show slightly different ranges of information.

2. Tariffs and Switching Tariffs

There are an endless number and range of tariffs from different suppliers. Sometimes switching tariff with the existing supplier can save money, including by switching to online account management or paperless billing.

Consumer Focus Scotland provide regularly updated price comparison factsheets which display the average annual bills for Standard Tariffs, Economy 7 Tariffs and Online Tariffs for high, medium and low energy users with each of the Big Six energy suppliers.

These price comparisons are available online, and are split into North Scotland and South Scotland regions.

The phone number for Consumer Direct is 08454 04 05 06 they give independent advice and information on energy matters.

Switching

Most gas and electricity consumers can switch their supplier,

- **unless they have more than £200 of fuel debt, or have a term in their lease which prohibits them from switching supplier or they have a specific tariff from a supplier for their electric storage heating.**
- Switching supplier could save householders money, as tariffs change and suppliers compete with one another.

It is important that consumers ensure they are on the cheapest tariff possible and this may be with another supplier. Switching supply can take **six to eight weeks** and during that time supply continues from the existing supplier and there is no break in the supply of gas or electricity.

The process of switching requires having information to hand on the current payment arrangements and tariffs of the householder.

Price comparison websites

www.moneysupermarket.com

There are a number of price comparison websites which make the process of comparison straight-forward. The information that is used for these comparison tools should be as accurate as possible to ensure a correct picture of what is available and the likely savings.

- The consumer can switch through these price comparison sites or by directly contacting the energy supplier they have chosen to switch to.

- The new supplier will take the details of the customer and contact their existing supplier to make all the arrangements.
- This process is normally very straight-forward and the householder will receive written confirmation of their new contract, the tariff and the date at which it will commence.

Energy Best Deal Scotland

Consumer Focus Scotland currently runs Energy Best Deal Scotland which aims to promote switching as a way of ensuring that customers are paying the most competitive prices for their gas and electricity. As part of the campaign Consumer Focus Scotland published an Advisors Guide, which provides detailed step-by-step information on helping a householder through the switching process and working out what is best for their circumstances. This guide can be downloaded from the Consumer Focus Scotland Website Policy and Research / Energy and Environment Section - www.consumerfocus.org.uk/scotland

3 Understanding Fuel Bills and payment methods

Fuel bills may be calculated using an estimated meter reading or a reading provided by a meter reader. This information will be shown on bills as follows:

- 'E' next to the reading means the supplier has *estimated* usage
- 'C' next to the reading means the supplier has used the reading provided by the *customer*.
- 'A' next to the reading means the supplier has used an *actual* reading provided by the meter reader.

When a bill arrives it is important to check that the fuel supplier has used the correct meter reading when calculating gas or electricity usage. Reading and keeping a record of meter readings on a regular basis will help keep track of how much fuel is being used. It may also prevent a large debit or credit balance building up on a fuel account. Fuel bills may also show a Standing Charge, but this will depend on the tariff and fuel supplier. Where there is a standing charge, it is usually shown as a daily amount and is the same regardless of the amount of fuel which has been used.

Paying by Direct Debit/Standing Order

A direct debit is an instruction from a customer to their bank or building society which allows the fuel supplier to collect varying amounts from the customer's bank account.

For those with bank accounts this is often the simplest way to pay bills. Most fuel suppliers give discounts for paying by direct debit, as it is easy to set up

and payments are automatic and so there is no need to remember when to pay.

Direct debit and standing order allow the customer to spread the cost of electricity and gas evenly over 12 months, with the same amount deducted from their bank account every month.

It is important that the monthly payments are sufficient to cover the consumer's annual consumption, as under-estimated payments will lead to a debt building up on their account.

Payments can be re-assessed up or down during the year if consumption levels change.

Advantages:

- budget for bills with equal monthly payments across the year
- avoiding larger winter bills
- bills will be paid automatically and on time
- secure and time efficient – don't need to post cheques
- direct debit charges are generally cheaper when compared with standard credit, in fact it is often the cheapest tariff
- choice of payment date.

Disadvantages:

- The customer will need to check their meter regularly to ensure that their consumption doesn't exceed likely payment over the year - otherwise the customer will have to make up any shortfall at the end of the year or negotiate higher payments for the next year
- There is also a danger that bank charges may be incurred if there are insufficient funds to cover the agreed payments.

This payment method suits:

- Those with regular incomes who find monthly budgeting easier and know roughly how much energy they use in a year

Quarterly billing

With this system fuel is used and paid for later – in other words the fuel is supplied on credit. Quarterly billing allows consumers to pay for fuel after every 3 months. A bill is sent for the fuel which has been used, or is estimated to have been used during the period that has just elapsed. This bill must be paid promptly. A wide variety of payment options are available, including cheque and Switch/debit card.

Advantages:

- The customer only has to think about bills when they arrive
- Always have access to fuel, assuming that the bills are paid
- Only pay for fuel after it has been used.

Disadvantages:

- It may be difficult to budget because of the large difference in winter and summer bills
- Problems can arise with estimated bills if the meter is not read.

Things to bear in mind:

It is important to make sure that fuel bills are based on actual, rather than estimated, meter readings to ensure that the consumer is paying enough to cover their ongoing usage. **Be aware that the price is usually higher with quarterly bills than with direct debit, but suppliers usually offer a discount for prompt payment.**

This payment method suits: Households whose income is regular and stable and which easily accommodates fluctuating bills.

Prepayment meter

Prepayment meters are special meters which only provide fuel after it is paid for. These meters are operated by tokens, cards or keys that have to be either bought or 'topped up'. A prepayment meter can help prevent any debt building up on an account. It also enables repayment of an outstanding debt. If a consumer has a fuel debt they should discuss an affordable level of repayment with their supplier before the meter is set. If there is a problem, contact the fuel company first. If the issue is not resolved, Consumer Direct can be asked to help.

- Contact them on 08454 040506.

There is generally an emergency temporary credit facility on the meter in case the supply runs out.

Advantages:

- The consumer pays for fuel as it is used , therefore enabling them to budget effectively to suit their means
- There are no large bills to worry about
- Meters can be set to recover debt gradually.

Disadvantages:

- The customer may have to visit specific outlets to make payments, but some suppliers can offer the facility to top up at home via the internet
- Consumers need to understand how standing charges and debts are collected through the meter so that they know the available credit for ongoing use after topping up
- Potential self-disconnection - electricity or gas may cut off because consumers are unable to make payments, although if credit runs out there is limited emergency credit before supply is disconnected. **(It's also worth noting that some suppliers offer key-operated repayment meters with a 'friendly non-disconnect period'. This type of meter won't disconnect a supply at a time when shops are unlikely to be open, for example overnight).**

Topping-Up:

PayPoint (www.paypoint.co.uk) and Payzone www.payzone.co.uk) payment outlets for topping up are usually located in local newsagents, shops and petrol stations. Card and keys can usually be topped up at most Post Offices (www.postoffice.co.uk).

Customers should only top up at official outlets and must beware of scams, including doorstep sales. See www.top-upsafe.com

This method generally suits:

- People who don't find accessing charging outlets difficult
- Customers who want to either avoid fuel debt or manage an existing debt.

Regular Payment Schemes

Consumers may be able to pay for fuel in equal amounts every week, fortnight or month.

- Payment books are suitable for people without a bank account and can help with budgeting.
- Quarterly statements are usually provided and show how much fuel has been used and how much has been paid.
- At the end of 12 months a 'settlement' notification is supplied to the customer. this will show either a credit (and a possible refund) or that there is a shortfall and that money is owed to the supplier.

Advantages:

- Can help budgeting by spreading out payments evenly across the year

Disadvantages:

- If actual use is less than was estimated, the fuel company has the benefit of the extra money until the end of the twelve months next year the customer can negotiate a reduced payment amount
- However, it relies on being able to travel to payment outlets, such as a bank, Post Office or a PayPoint on a regular basis
- Travel costs need to be taken into consideration and there may be a surcharge to pay for using the payment book, making it more expensive than direct debit.
- Not all fuel suppliers offer this form of payment.

This payment method suits:

- People without a bank account
- People who find it difficult to budget monthly or quarterly.

Fuel Direct

Fuel Direct (also referred to within the Department for Work and Pensions as 'third party deductions from benefit') is an option available to those in receipt of certain benefits – Income Support, Income-based Job Seekers Allowance, Pension Credit or Employment and Support Allowance - and who have an existing fuel debt.

It is generally considered a payment method of last resort for customers who qualify and who have major problems in budgeting. It is necessary to secure the agreement of both the Department for Work and Pensions and the fuel supplier.

Fuel Direct involves the direct deduction from benefit for both current consumption and for debt recovery. A standard debt recovery rate is set at 'a per week rate' although this can double if there are debts for both gas and electricity.

Contact your local Department for Work and Pensions (DWP) for further information.

Advantages:

- This scheme should protect people from disconnection
- The scheme ensures that further debt is unlikely (however if the amount set for ongoing consumption is too low for the consumer's usage needs further debt may build up)
- Unreasonably high debt repayments are avoided – there is a maximum repayment level per debt set by the government
- The cost of fuel is spread equally throughout the year, as with the regular payment scheme.

Disadvantages:

- Money is taken directly from benefits which reduces the household's budgeting flexibility.

This payment method suits:

- Customers who receive benefits
- Those with a fuel debt
- Those who have difficulty budgeting or who may forget to pay a bill on time

- Customers without a bank account.

4 How to save energy

Installing insulation and undertaking other physical measures such as draught-proofing ensure that a home is as energy efficient as possible which can help save money.

Energy Action Scotland runs a City and Guilds Energy Awareness training course. This course is aimed at those providing energy advice to clients and wishing to have a greater understanding of domestic energy efficiency.

For more information on this and other courses run by Energy Action Scotland, see the website – www.eas.org.uk

Home Energy Monitors and Smart Meters – Monitoring Energy Usage:

Home Energy Monitors

- A home energy monitor lets the householder see how much electricity they are using at a given time.
- They work by clipping a device to one of the cables coming from the electricity meter.
- This device wirelessly transmits a signal to a display device plugged in anywhere in the home.
- The amount of electricity being consumed will likely be given in kilowatt hours (kWh).
- If the monitor is programmed with the current electricity tariff being paid by the householder it can also provide a good indication of how much their electricity is costing at any given moment.
- The monitors may also be called real-time displays and the information displayed is continuously updated so that if an appliance is turned on or off the display will update, usually within a few seconds.
- Many energy suppliers offer these monitors to their customers on certain tariffs, however there are also some retailers who sell a wide range of monitors.
- Some trials have shown that monitoring energy usage has helped to reduce electricity bills

- However, there is a danger that if a concerned householder sees a high consumption level, they will turn off appliances/heating. This may lead to householders not heating their homes sufficiently, putting their health at risk.

Effective education about controlling energy consumption is necessary to the effectiveness of home energy monitors.

Smart Meters

Smart meters are a new kind of electricity meter which the Government has decided must be installed in every home in the UK by 2020.

Smart meters will replace existing electricity meters and differ in one significant way. Smart meters will be able to send constant updates of the electricity usage to the energy supplier. How and when they do this may depend to a large extent on the supplier, but householders will no longer have to take readings themselves or wait at home for the meter reader.

Some suppliers may take a reading once a month to ensure an accurate bill, while others may constantly monitor the usage of their customers to see patterns and maintain effective supply. Some suppliers are looking at retrieving this information using SIM technology like in mobile phones; others are exploring the use of long-range radio signals.

A smart meter will likely come with an in-home display; much like the home energy monitors it will give real-time information on electricity consumption. There is a lot of talk in the industry of using this technology to provide customers with greater control, including the ability to programme appliances to be automatically switched on at off-peak cheap energy times and provide customers with variable tariffs according to electricity demand.

Smart meters may also take the consumption reading to a new level by providing information on consumption divided up by appliance – so a householder can see at a given time exactly which of their appliances is using how much electricity, and how much it is costing. Some suppliers have already started rolling out smart meters however the industry and Government are still trying to work out technology compatibility between suppliers to ensure smooth processes as customers continue to switch in the future.

Hints and Tips

Here are some suggestions about what households can do to cut their energy bills without losing any comfort:

- If the home has a hot-water tank or cylinder, it should have at least 8cm (3 inches) of insulation. This will reduce the cost of heating the water and keep it hot for longer
- If there is no thermostat on the hot-water tank it is worth looking into having one fitted. The hot water thermostat should be set at 63°C (140°F), as this is usually hot enough for most household use
- Only switch the hot water on for the hours when hot water is needed. It is more expensive to leave it on all day. An hour in the morning and an hour in the afternoon is usually enough for most people's needs
- Heavy curtains at the windows will help to keep the heat in and closing them as soon as it starts to go dark also helps. But make sure the curtains are tucked behind any radiators at the windows
- The thermostat on the central heating should be set at 21°C (70°F) for the living room. Do not waste energy by opening windows – turn down the room thermostat or individual radiator controls instead
- Use low energy light bulbs in rooms where the lights are on for long periods of time. They last up to 12 times longer than ordinary light bulbs and use only a fifth of the electricity
- With storage heaters, it is important to close the damper or output dial, (sometimes called the boost) before going to bed or if the house is unoccupied during the day
- Do not leave appliances on standby but switch them off at the wall instead
- Small shelves placed about 5cm (2 inches) above radiators help push warm air towards the centre of the room. If the radiators have individual thermostats these can be turned down a little – especially in rooms that are not used all the time.

Draught proofing

Draught proofing is one of the cheapest and most efficient ways to save energy in any type of building. It should be fitted to:

- windows
- doors
- chimneys and fireplaces
- floorboards and skirting boards
- loft hatches

Windows: For windows, there are 2 main types of material:

- Self-adhesive foam strips – the cheapest option, and easy to install, however may not last as long as other methods.
- Metal or plastic strips with brushes or wipers attached – these are long-lasting, but cost a little more.
- Make sure the strip is the right size to fill the gap in your window. If the strip is too big it will get compressed and damaged and it may be difficult to close the window. If it's too small there will still be a gap.
- For sliding sash windows it's best to fit brush strips or consult a professional.
- Foam strips do not work well.
- For windows that don't open you can use a silicon sealant.

Doors: Draught proofing for outside doors can save a lot of heat and will only cost a few pounds.

There are 4 main things to think about:

1. the gap at the bottom – use a brush or hinged flap draught excluder
2. gaps around the edges – fit foam, brush or wiper strips like those used for windows
3. the keyhole – buy a purpose-made cover that drops a metal disc over the keyhole
4. the letterbox – use a letterbox flap or letterbox brush. Remember to measure the letterbox before buying.

Inside doors need draught proofing if they lead to a room not normally heated, like the spare room or kitchen. Keep doors to unheated rooms closed as much as possible to stop the cold air from moving into the rest of the house. Inside doors between two heated rooms don't need draught proofing – it's ok to let warm air circulate between different rooms.

Chimneys and fireplaces: If the fireplace is unused, the chimney is probably a big source of unnecessary draughts.

There are 2 main ways to draught proof a chimney:

1. fit a cap over the chimney pot – this might be better done by a professional
2. buy a chimney balloon – an inflatable cushion which blocks up the chimney.

Floorboards and skirting boards: block cracks using filler.

Floorboards and skirting boards often contract, expand or move slightly with everyday use, so you should use a filler that can tolerate movement – these are usually silicon-based.

Fillers block gaps permanently so be careful when applying them and wipe off any excess or mess with a damp cloth before it dries. Fillers may break down over time, but can easily be re-applied.

Loft hatches: Draught proofing the loft hatch is essential, since hot air rises and is lost into the cold space in the loft. Cold air can also blow in through the gaps around the loft hatch. Loft hatches can be draught proofed by using strip insulation, like on a door.

Which rooms don't need draught proofing?

Be careful about draught proofing rooms that need good ventilation, including:

- areas where there are open fires or open flues – It is essential that areas like this have adequate ventilation, rooms where a lot of moisture is produced, such as the kitchen, bathroom or utility room.
- good ventilation helps reduce condensation and damp.

Draught proofing products and installers

For a list of registered installers see the National Insulation Installers website - www.nationalinsulationassociation.org.uk

For information on products, installers and manufacturers, see the Draught proofing Advisory Association website - www.dpaaassociation.com.

Tank & Pipe Insulation

Both tank and pipe insulation keep water hotter for longer by reducing the amount of heat that escapes.

The most common type of water heater blanket (jacket) is fibreglass insulation with a vinyl film on the outside. The insulation is wrapped around the tank and the ends are taped together. It is important that the blanket be the right size for the tank and not block air flow or cover safety and drainage valves, the controls, or block airflow through the exhaust vent, if any. Insulating a hot water cylinder is one of the simplest and easiest ways to save energy and money.

Fitting a jacket around a cylinder will cut heat loss by over 75%. A well-fitted 75mm thick hot water cylinder jacket will save around £35 per year. A jacket costs less than half that. Fitting a jacket to a hot water cylinder is a straightforward DIY job.

Pipe insulation is used to prevent heat loss and gain from pipes, to save energy and improve effectiveness of thermal systems. In addition to reducing costs and environmental impacts of energy consumption, the benefits include:

- Reducing or eliminating condensation on cold pipes
- Protection from dangerous pipe temperatures

- In domestic hot-water systems, the water temperature at the point of use can be closer to the temperature at the water heater, and wait time for hot water can be reduced
- Control of noise
- Reduction of unwanted heat gain to air-conditioned spaces.
- Insulation for hot water pipes will cost around £10 and can save around £10 a year.

Fitting insulation to pipes is easy if the pipes are accessible, but professional help may be required to fit insulation to harder-to-reach pipework, which would incur extra cost.

Loft Insulation

As much as a third of the heat produced in a home could be escaping through the roof. Most loft insulation materials work by preventing the movement of heated air through the material. Loft insulation is located between the joists on the loft floor of a property (roof insulation is located between the tiles and the rafters). The materials most commonly used are quilted mineral wool, blown mineral wool and blown cellulose (usually recycled newspaper).

Quilts: Sold in flexible blankets of different thicknesses. Made from glass or rock fibre, some of which will have been recycled. Mineral wool is the most common form of loft insulation quilt in the UK.

Blown insulation: Blown loose into specific, sectioned-off area to the required depth. Blown cellulose fibre or mineral wool should only be installed by professionals. Loft insulation quilts should be laid horizontally between the joists and reach the top of the joist. Typically, this will make the insulation around 100mm to 150mm deep. More layers should then be added at right angles, to close up any gaps between the joist and the quilt, and to bring the depth to the recommended 270mm. Quilts are suitable for DIY installation, but blown insulation should only be installed by professionals with specialist equipment.

Air vents (and soffit, tile or ridge vents) must be kept clear to help prevent condensation. All electric wires, cables and light fittings must be kept visible to avoid overheating. If in doubt, it may be best to contact a professional installer.

The recommended depth for loft insulation is 270 mm for glass wool, 250 mm for rock wool or 220 mm for cellulose.

Remember to insulate the pipes and water tank. Insulating between the joists of a loft will keep a house warmer but make the roof space above colder. So, without their own insulation, pipes are more likely to freeze. Also, the cooler air of an insulated loft could mean cold draughts through the hatch, so this should also be insulated.

For a list of professional installers, see the National Insulation Association website - www.nationalinsulationassociation.org.uk

Loft insulation can help lower heating bills (annual saving of between £45 and £150), lower wear and tear on boilers and reduce global warming and climate change.

There are a number of grants and schemes available to home owners which can substantially reduce the cost of installing these products.

Cavity Wall Insulation

The external wall of a house is constructed of two masonry (brick or block) walls, with a cavity (gap) of at least 50mm between. Metal ties join the two walls together.

The cavity wall is injected with insulating material by drilling holes in the external wall, through the mortar joint. Holes are generally of 22-25mm diameter and are 'made good' after injection. Each hole is injected in turn, starting at the bottom.

Before the installation, the installing firm will undertake an assessment of a property to confirm that it is suitable for insulation.

There are several different types of insulation:

- Bonded bead (polystyrene beads)
- Glass or rock wool (yellow/white or grey/brown in colour)
- Urea formaldehyde foam (white foam)

Note: both glass wool and rock wool are known as 'mineral wool'.

All systems of CWI have been tested, assessed and approved by the British Board of Agreement (BBA) or the British Standards Institution. All are suitable for their purpose. Except for Urea Formaldehyde foam, the systems can be used in all parts of the UK. All systems have a similar insulation value. A technician must undertake checks before and after installation, including a check of any heating appliances, so it is essential that they have access inside the property.

Ventilators supplying combustion air to fuel burning appliances must be safeguarded. Similarly ventilators at ground level that ventilate below timber floors must be safeguarded. A technician will investigate them to check they are already sleeved. If they are not sleeved, the technician will remove them and seal around them to stop them being blocked by the insulation. Other vents, which may be redundant, such as cavity vents or vents that are used to supply air to open fires in bedrooms may be closed off. Redundant airbricks may be filled.

CIGA (Cavity Insulation Guarantee Agency) issue an independent 25 year guarantee covering materials and workmanship. All professional approved installing firms are members of CIGA and can apply for a CIGA Guarantee, for properties built with traditional cavity walls. With CWI, a house should hold its temperature for longer, therefore the time between heating cycles may be longer. The result should be a more even temperature throughout the house and/or a reduced fuel bill. Filling cavity walls is not a DIY job. Installation must always be carried out by a professional installation company, registered with one of the following organisations:

1. The National Insulation Association (NIA)
2. The Cavity Insulation Guarantee Agency (CIGA)
3. The British Board of Agreement (BBA)

There are a number of grants and schemes available which can substantially reduce the cost of installing cavity wall insulation.

Solid Wall Insulation

Internal and External Insulation

Solid wall properties tend to be more difficult and expensive to improve in terms of adequate insulation and heating. Solid walls lose heat more quickly than cavity walls, but because they are solid there is no easy way to insulate them. A solution to this is external and internal wall insulation.

External wall insulation

This involves adding a decorative weather-proof insulating treatment to the outside of the house. The thickness of the insulation needs to be between 50mm and 100mm and is usually installed where there are severe heating problems or the exterior of the building requires some form of other repair work, providing the opportunity of adding insulation.

External insulation systems are made up of an insulation layer fixed to the existing wall, using a combination of mechanical fixings and adhesive - depending on the insulation material used. This is then covered completely with a protective render or cladding finish. Most external renders consist of either thick sand/cement render applied over a wire mesh, or a thinner, lighter polymer cement render applied over a 'GRP scrim'.

External wall insulation must be fitted by a specialist installer trained by approved system designers. To find such an installer visit the Insulated Render & Cladding Association (INCA) website or the National Insulation Association (NIA). The installer will need full access to all the walls from the outside. It is not recommended for homes with structurally unsound outer walls that cannot be repaired.

To prevent condensation, recessed areas around windows must be insulated as well as the walls – with the depth of insulation depending on the width of the window frame. External insulation is likely to change the appearance of a

home and will cover up existing brickwork. Planning permission may therefore be required.

For information on planning permission in Scotland, visit the Scottish Government Building Standards webpage

www.scotland.gov.uk/Topics/Built-Environment/Building/Building-standards

Internal wall insulation

Solid walls can also be insulated by applying internal wall insulation, usually ready-made insulation/plaster board laminates or wooden battens in-filled with insulation or flexible linings.

Thermal boarding is a composite board made of plasterboard with a backing of insulation. The insulation backing can be specified in a variety of thicknesses. Insulation in excess of 60mm will typically be required to achieve best practice performance. Up to 100mm of insulation can be included.

Thermal boards are fixed to the wall surface using continuous ribbons of plaster or adhesive, plus additional mechanical fixings. Insulation/plaster board laminates consist of plasterboard backed with insulating material typically to a total thickness of up to 90mm. Installing them involves the boards being fitted directly to the inside of the wall and the thicker the board the better the insulation.

Alternatively, wooden battens in-filled with insulation and covered with a plasterboard finish can be fitted to a wall. Flexible insulating linings (a form of dry lining) can also be used. These are cheaper and less disruptive to install, though savings on energy bills are lower. Flexible thermal linings are insulation on a roll specifically for use in solid wall homes, mansard roofs and dormer ceilings.

5 Government schemes and programmes

Energy Assistance Package

The Energy Assistance Package (EAP) is a holistic package to help maximise incomes, reduce fuel bills and improve the energy efficiency of homes. It is funded by the Scottish Government and managed by the Energy Saving Trust and delivered by their network of Energy Saving Scotland advice centres (ESSac).

The EAP has four stages:

Stage 1 offers free energy advice to anyone who phones the Home Energy Hotline on 0800 512 012

Stage 2 provides benefits and tax credit checks and advice on low cost energy tariffs to those at risk of fuel poverty

Stage 3 provides a package of standard insulation measures - cavity wall and loft insulation - to homeowners and tenants of private sector landlords:

- aged 70 or over with no central heating or
- aged 75 or over or
- receiving a qualifying benefit.

Landlord permission must be obtained.

Local authority or housing association tenants may be able to access similar measures, funded through a partnership between Scottish Government, landlords and utilities. These tenants should contact the landlord.

Stage 4 offers a package of enhanced energy efficiency measures including a new central heating system if appropriate, to homeowners and tenants of private sector landlords who are most vulnerable to fuel poverty:

- aged 60 or over and have no central heating or
- living in a home with a poor energy rating and:
- aged 75 or over
- aged 60 or over, receiving a qualifying benefit
- child under 16, receiving a qualifying benefit
- pregnant, receiving a qualifying benefit
- receiving the highest rate of the care
- component or the higher rate of the mobility
- component of disability living allowance
- are terminally ill (in receipt of DS1500 certificate)

The property must have been the only/main home for at least one year. Landlord permission must be obtained where relevant. If the householder is terminally ill they do not need to have lived in their property for at least one year.

Anyone seeking information on Scottish Government home energy initiatives and help and advice on how to save energy and money in the home should call 0800 512 012 or www.homeenergyscotland.org.uk

Appendix to Energy Assistance Package

Additional Information:

Qualifying benefits for Stage 3:

- NB if the client is 75 or over or 70 or over with no central heating system present, you don't need benefits to qualify.
- Pension credit
- Child tax credit or working tax credit (where income is less than the qualifying threshold*)
- Employment and support allowance
- Attendance allowance
- Disability living allowance
- Income support, income based jobseekers allowance
- Housing benefit
- Council tax benefit
- Disablement pension which includes a constant attendance allowance
- War disablement pension which includes a mobility supplement or a constant attendance allowance

Qualifying benefits for Stage 4

- Attendance allowance
- Child tax credit - where income less than £17,474
- Council tax benefit
- Housing benefit
- Income support
- Income-based jobseekers allowance
- Disability living allowance
- Industrial injuries disablement pension which includes a constant attendance allowance
- State pension credit - with guarantee element
- War disablement pension which includes a mobility supplement or a constant attendance allowance
- Working tax credit - where income less than £17,474
- Employment and support allowance

Enhanced package measures:

Depending on individual circumstances, the package may consist of but is not limited to:

- installation of a new central heating system including, where appropriate, air source heat pumps
- new boiler/central heating system
- draughtproofing

- internal or external wall insulation
- cavity wall insulation
- loft insulation
- room thermostats and heating controls
- tank and pipe insulation

Energy inefficient homes

'Energy inefficient homes' are defined as those where an energy audit identifies that the dwelling has a SAP score of less than 55.

Feed-In Tariffs

Feed-In Tariffs (FiTs) are payments to ordinary energy users for the renewable electricity they generate. The tariffs have been introduced by the UK Government to help increase the level of renewable energy in the UK towards the legally binding target of 15% of total energy from renewables by 2020 (in 2009 this was under 2%).

The initial fast track review of the FiTs scheme was completed in May 2011. The review resulted in tariff reductions for solar PV larger than 50kW / standalone PV and increases for some anaerobic digestion installations. The first full review of the scheme is due in 2012.

The tariffs are payments to anyone who owns a renewable electricity system, for every kilowatt hour (kWh) of electricity they generate. They are applicable to households, landlords and businesses. Depending on the type of technology there is a maximum size (kWh capacity) of installation which will be eligible for FiTs.

The tariffs provide three benefits:

- A payment for electricity produced (including electricity used by the individual, landlord or organisation)
- Additional payments for electricity exported to the grid
- A reduction on electricity bills, from using energy produced by the renewable technology installed

Tariffs will be paid for up to 25 years and vary depending on the type and scale of the installation. FiTs payments are exempt from income tax. All generation and export tariffs will be linked to the Retail Price Index (RPI). Tariffs became payable in April 2010. All qualifying systems installed now are eligible, if they are MCS certified (Microgeneration Certification Scheme).

A payment of 3pence/kWh will be made for any surplus electricity generated **and** exported back to the grid. This is a fixed rate (though there is the option to negotiate an alternative rate with an electricity supplier), regardless of the type of renewable technology. Until or unless a Smart Meter is installed the export element will be deemed to be 50% of the power generated by the renewable system. FiTs is being paid for by the energy suppliers, however the costs for the scheme will ultimately be passed through to all electricity consumers through increased prices.

Renewable Heat Incentive (RHI)

Heat generated from renewable energy sources currently meets 1% of the UK's total heat demand. To reach the 2020 renewable energy target, around 12% of the UK's heat needs to be generated from renewable sources.

Policies were introduced to increase the uptake of renewable heat systems, by establishing broad enabling powers in the Energy Act 2008. This will see the Renewable Heat Incentive (RHI) scheme to be launched in July 2011, and remove non-financial barriers such as air quality issues and building regulations. RHI is a payment for generating heat from renewable sources. RHI is set by the UK Government, administered by Ofgem and paid for directly by the UK Treasury. RHI will be introduced in two Phases. In the first phase commencing in July 2011 RHI will provide two forms of support:

- Renewable Heat Premium Payments for domestic installations
- Ongoing tariff support for non-domestic renewable heat installations

The Premium Payments will be one off payments intended to subsidise the installation of renewable heat technology in single domestic properties. The non-domestic installation tariff support will provide a 20 year tariff for a range of renewable heat technologies and includes installations which serve more than one domestic property or cover a whole community, such as district heating schemes. In its first phase RHI will be available for most of the established renewable heat technologies:

- Ground source and water source heat pumps
- Solar thermal heat and hot water
- On-site biogas for heat production
- Biomass heat generation and combined heat and power (CHP)
- Deep geothermal
- Energy produced from waste
- Biomethane injection

The main benefit of the RHI is the generation tariff, which is paid for every kilowatt-hour of energy produced. The level of payment varies depending on the technology and the system size. Under the non-domestic tariff the heat produced will be metered rather than estimated contrary to previous suggestions.

Systems installed after 15 July 2009 will be able to join the Renewable Heat Incentive scheme, but will only get paid for any generation from June 2011 onwards. Furthermore in the case of non-domestic installations any public subsidy obtained earlier must have been repaid by the commencement of the scheme.

Green Deal

The Green Deal is a new initiative, due to start in 2012, part of the UK Government's drive to improve energy efficiency as it seeks to reduce greenhouse gas emissions. Green Deal is designed to facilitate the retrofitting of energy saving measures. Consumers and businesses will be encouraged to make their premises more energy efficient at no upfront cost. Instead, the Green Deal will provide a mechanism for home owners and small businesses to access low cost funding packages - removing the capital cost investment

barrier for making a property more energy efficient. The measures are aimed in particular at curbing heat loss from homes, which accounts for a quarter of the country's carbon dioxide emissions.

The Government intends that private companies will deliver the Green Deal, financing the cost of the installations. As well as fuel utilities, the 'trusted high street names' expected to become involved include companies such as Tesco, B&Q and Marks & Spencer. There is a 'golden rule', according to Department of Energy and Climate Change (DECC), that the estimated savings will equal or exceed the cost of the measures.

These Green Deal providers will recoup their costs through a charge on the customer's energy bill that is intended to be less than the savings made by the improvements. The funding package will be applied to the meter and the property, not the person/business occupying it. The funding package will continue to be repaid if, for example, there is a tenure change or if a householder switches supplier.

Much of the detail has still to be finalised and confirmed. At this stage, it is expected that the 'eligible' measures will be fairly standard energy efficiency measures i.e. loft insulation, cavity wall insulation and internal/external wall insulation. The organisations involved in delivery – utility, finance provider, installer – will clearly need to cover their administrative costs and will expect a contribution to 'the bottom line'. It is particularly important that the basis for estimating savings for each measure installed is robust, since this will in turn form the basis (amount, timescale) for repayment of the funding package.

6. Help from suppliers

Carbon Emissions Reduction Target (CERT)

The Carbon Emissions Reduction Target (CERT) 2008 – 2011 is a domestic energy supplier obligation requiring all gas and electricity suppliers (with more than 50,000 customers) to make savings in the amount of CO₂ emitted by householders. CERT has been extended to the end of 2012 when a new Energy Company Obligation will be introduced. The primary aim of CERT is to make a contribution to the UK's legally binding targets to reduce greenhouse gas emissions.

However it is also used as part of the UK Government's programme to reduce fuel poverty and increase the energy efficiency of homes. It does this by ensuring that a certain amount of work under CERT is targeted at low-income and vulnerable households. CERT sets targets for energy suppliers to achieve improvements in energy efficiency by providing measures - such as cavity wall and loft insulation and energy efficient boilers and appliances - to households across Great Britain. CERT targets are set by the UK Government and the regulator OFGEM has the responsibility for monitoring delivery.

Obligated suppliers must target at least 40% of the energy savings achieved at a Priority Group of low-income domestic consumers including those who are over 70 years old and on certain credits and benefits. Since the extension to 2012, the targeted group must include a Super Priority Group of the poorest households most vulnerable to fuel poverty, which should make up 15% of the targeted households. The Super Priority Group includes people claiming specific credits and benefits: income-related Employment and Support Allowance, income-based Job Seeker's Allowance, Income Support and State Pension Credit or who have parental responsibility for a child under 5 years of age who lives with them.

In the extension period (from March 2011), suppliers are no longer permitted to use provision of energy saving light bulbs as a means of fulfilling the obligation and insulation must provide at least 80% of the obligation. Real time home energy displays and home energy advice packages will also become qualifying actions.

Measures can be provided to any domestic household in Great Britain and the funding for the installation or distribution of measures comes from the obligated suppliers, usually collected via a 'levy' on customer bills. However, they are not required to spend a fixed amount of money. Suppliers are not limited to offering measures to their own consumers and can partner with other organisations for the distribution of measures or to encourage the uptake of measures. Suppliers must demonstrate that their activity has led to additional energy efficiency measures being installed.

Beyond 2012 - the Energy Company Obligation

The Government has confirmed that beyond 2012 there will be a new Energy Company Obligation (ECO) which will exist alongside the Green Deal. The ECO is expected to provide targeted assistance to those who are vulnerable and on low incomes. It is also expected to assist those living in hard to treat and expensive to treat homes who would not benefit under the Green Deal scheme because repayments for the work could not, in their circumstances, be expected to outweigh their energy bill savings.

Community Energy Saving Programme (CESP)

CESP is part of the UK Government's programme to save energy and carbon dioxide. It requires all electricity suppliers and electricity generators of a certain size to deliver energy saving measures to domestic customers in specific low income areas of Great Britain. In Scotland it targets the lowest 15% of areas ranked in the Scottish Index of Multiple Deprivation (SIMD). Delivery of the programme is through the development of partnerships between local authorities, community-based organisations and the energy suppliers, taking a street-by-street area based approach.

The energy suppliers are obligated to undertake programmes resulting in a total carbon emissions reduction of 19.25 million tonnes of carbon dioxide in the period from 1 October 2009 and 31 December 2012. By August 2010 Ofgem, who administer the scheme on behalf of the Government, had

received 81 proposals for CESP activities from obligated energy suppliers, with 8 of these based in Scotland.

The activities proposed have been very different to those undertaken under CERT, with 91% of schemes proposing external solid wall insulation and half of schemes proposing double glazing as part of the package of measures. Other measures also include heating replacements. Whilst most proposals have targeted fuel switching and replacement of traditional boilers, there are also a number of proposed schemes which have taken up the incentive to consider installation of renewable technologies including solar thermal, biomass and heat pumps. OFGEM administers the scheme while the UK Government sets the overall policy objectives and targets. See www.ofgem.gov.uk and www.decc.gov.uk

Social Tariffs

Since the introduction of the Warm Home Discount on 4 April 2011 social tariffs are being phased out over the course of three years. This information is included as background, and because some customers on these tariffs at the time of the change may remain on them until their contract ends or the tariff is phased out.

Social tariffs were introduced by energy suppliers as part of their voluntary social spending. These tariffs were at least equivalent to or cheaper than their lowest available direct debit tariff.

Not all energy suppliers applied the same eligibility criteria, nor did they all offer the same tariffs. Some social tariffs were only available to older people or families with young children; some were only available to people in receipt of certain benefits and others were only available to customers in fuel poverty. Details of the social tariffs available from the 'Big Six' energy companies are currently still available at:

www.consumerfocus.org.uk/get-advice/energy/households/energy-tariffexplained/social-tariffs

NB – Energy companies also offered additional support which sometimes took the form of a lower rate tariff (though not necessarily the cheapest, depending on how the customer paid for their fuel). Additional social support may also include help in managing accounts, or debt reduction via a trust fund.

Social Tariffs of the Big Six Suppliers – accurate as at February 2011 British Gas (Scottish Gas) - Essentials Combined

British Gas 'Essentials' tariffs had three separate packages to assist specific customer groups. The Social Tariff version called Essentials Combined was aimed at vulnerable and low income consumers.

Key features of the package included:

- Equivalent to lowest online tariff - Websaver (latest version)

- Energy efficiency advice and benefits check
- To be eligible consumers must have had a household income of less than £15,000 per year and be in receipt of means tested benefits, **plus:**
- be on Disability Living Allowance **or**
- Attendance Allowance **or**
- be over 70 (in receipt of Pension credit) **or**
- suffer from a chronic illness
- To find out more about the Essentials Combined Tariff call **0800 072 5230** (pre-payment consumers should call **0800 294 8604**).

EDF Energy - Energy Assist

Energy Assist was a social product offered by EDF Energy.

Its key features were:

- Eligible consumers regardless of payment method are charged on the same tariff as direct debit customers, plus there is an annual discount of £75 for dual fuel customers (pro-rata for single fuel customers)
- free energy efficiency advice
- free or discounted energy efficiency measures
- benefits entitlement check
- To qualify it was necessary to be a customer of EDF Energy and either:
- spend more than 10% of income on household energy costs each year, **or**
- be in receipt of Income Support and/or receive Pension Credit benefits

Electricity prepayment customers were able to pay the Energy Assist tariff price using their meter, rather than receiving a rebate, however prepayment gas consumers were sent rebates.

For further information on availability and eligibility criteria, please contact the EDF Energy Priority Services Team on **0800 269 450**.

E.ON – Warm Assist social product

- Up to 15% discount on standard electricity and gas prices
- Personalised energy efficiency advice
- Free energy efficiency measures
- Benefits entitlement check

To qualify it was necessary to be aged 60 or above, be on a low income and meet one of the following criteria:

- be in receipt of Pension Credit, **or**
- be in receipt of Disability Living Allowance, **or**
- be in receipt of Attendance Allowance, **or**
- have high energy consumption arising from a medical condition (at E.ON's discretion)

For more information about Warm Assist call **0800 404 6287**.

npower - Spreading Warmth Tariff

This tariff offered average annual savings of over 20% compared to standard prices (based on a consumer who had dual fuel and paid by cash, cheque or via a prepayment meter).

To be eligible a consumer must have had an annual income below £13,500 and someone in the household who was either:

- 60 or over, **or**
- disabled, **or**
- chronically sick, **or**
- a child under 16

Scottish Power - Fresh Start

Features offered as part of tariff:

The tariff was equal to the cheapest Scottish Power tariff at any time regardless of payment method

Benefits check to ensure consumers are claiming all the benefits they are eligible for Energy efficiency advice

The tariff was available to anyone over the age of 60 and in receipt of one of the following social welfare benefits:

- Attendance Allowance
- Council tax benefit (not including single occupancy discount)
- Disability Living Allowance
- Disabled persons tax allowance
- Child Tax Credit (where income is less than than £15,460)
- Housing benefit
- Income-based Job Seekers Allowance
- State Pension Credit
- Working Tax Credit (where household income is less than £15,592)
- War Disablement Pension (which either includes a mobility supplement or constant attendance allowance)
- Industrial injuries disablement benefit (must also have a constant attendance allowance)

For more information on Fresh Start call **0845 2700 700**.

Scottish and Southern Energy (Scottish Hydro) - Energyplus Care

Key features included:

- Minimum 20% reduction on cheapest tariff in that geographical area
- Free energy efficiency advice
- Free energy efficiency measures (can range from low energy light bulbs to a free fridge or a discounted fridge/freezer)
- Free benefits entitlement check

Customers may have qualified for Energyplus Care if they spent over 20% of income on energy bills. To qualify they also must have completed a questionnaire over the phone or in person.

The key categories were as follows:

- Total household income including any benefits received
- Home and how energy efficient it is
- Annual fuel costs
- Other additional support needs

For more information contact SSE about Energyplus Care on **0800 622 838**.

Warm Home Discount (WHD)

The Warm Home Discount requires energy companies by law to give a discount on energy bills to some of their most vulnerable customers. This mandatory scheme has replaced the previous voluntary agreement with the energy companies. Over the four years of the scheme to 2015, WHD will be worth up to £1.1bn and is expected to help around two million households per year.

Energy companies are required to provide a discount on electricity bills to a 'core group' of low income pensioners (initially comprising those in receipt of the 'guarantee' element of Pension Credit, expanding to include every pensioner in receipt of the Savings Credit element by 2015). They are also required to provide the same discount to a 'broader group' of their customers, although they retain discretion over who will be eligible for the discount. The discount for customers in both the core and broader groups is £120, increasing to £140 in year four.

Under their voluntary agreements energy companies had commitments such as social tariffs. They must manage down expenditure on these commitments because their 'legacy spend' will be capped, and phased out over the first three years of WHD.

Energy companies can (with Ofgem approval) spend a maximum of £30m per year on industry initiatives. These initiatives might include: financing of organisations which refer customers in fuel poverty to suppliers; providing or funding the provision of benefit entitlement checks; and also providing or funding energy efficiency measures. The Department for Energy and Climate Change (DECC) expects the expenditure to break-down as follows:

Source: UK Government Response to the Consultation on the Warm Home Discounts, 2011.

Priority Service Register (PSR)

Energy suppliers are required to keep a register of priority service customers who, by virtue of being of pensionable age, disabled or chronically sick, require information or advice on the special services available. Suppliers must provide the following services free of charge (where appropriate) to **eligible customers who request it**:

- password schemes
- bills available in large print and braille as well as talking bills
- quarterly meter reading services (if no person occupying the premises is able to read the meter)
- having a prepayment meter moved to improve access
- bill nominee scheme
- priority in an emergency (this could include providing alternative heating and cooking facilities in the event of supply disconnection).

Suppliers are prohibited from disconnecting a premises occupied by a customer eligible for the PSR during the winter months (1 October – 31 March).

Contact details:

British Gas, including Scottish Gas (Home Energy Care)

Tel: 0800 072 8625

Web: www.britishgas.co.uk

ScottishPower (Care Free)

Tel: 0845 2700 700

Web: www.scottishpower.co.uk

EDF Energy

Tel: 0800 169 9970

Web: www.edfenergy.com

E.ON (Caring Energy)

Tel: 0800 096 3080

Web: www.eon-uk.com

Scottish and Southern Energy, including Scottish Hydro (Careline)

Tel: 0800 622 838

Web: www.southern-electric.co.uk

npower Warm Response Service

Tel: 0808 172 6999

Web: www.npower.com

Funds/Foundations/Trusts

Some energy companies have trust funds which aim to help customers who are in debt, or which may fund projects which provide support for the fuel poor

E.ON

The E.ON Caring Energy Fund aims to assist E.ON customers who are living in low income households (a household income of less than £16,040 pa and savings below £8,000).

The E.ON Caring Energy Fund can offer the following assistance to successful applicants:

- payments in full or part to cover the cost of repairing or installing heating measures
 - payments in full or part to cover the cost of essential household appliances.
- Call on Freephone **0800 051 1480**. Lines open Monday to Friday 8am-6pm.

British Gas & Scottish Gas

All customers of British Gas and Scottish Gas with current debt are able to apply to the British Gas Energy Trust Fund. The British Gas Energy Trust offers two types of grant:

- 1) Grants to clear arrears on domestic gas/electricity bills
- 2) To clear arrears of other essential domestic bills or purchase of essential household items.

- Download a form/complete online or phone to request a form
- Website: www.britishgasenergytrust.org.uk
- Online Form: www.charisonline.co.uk/bget/
- Application Request Number: 01733 421060

EDF Energy

All customers of EDF Energy with current debt are able to apply to the EDF Energy

Trust Fund. The EDF Energy Trust offers two types of grant:

- 1) To clear gas or electricity debt
- 2) To help with other essential household bills and appliance purchases

- Download a form/complete a form online or phone to request a form
- Website: www.edfenergytrust.org.uk
- Online Form: www.charisonline.co.uk/edfet/
- Application Request Number: 01733 421060

npower

npower's Energy Trust may provide one-off payments (Further Assistance Payments) for household bills, energy arrears or essential household appliances.

- Download a form/complete a form online or phone.
- Website: www.npowerenergytrust.org.uk
- Online form: npet@charisgrants.com
- Application Request Number: 01733 421060

Scottish and Southern Energy/Scottish Hydro

No specific scheme available for individual consumers. The website includes information on the support services available.

- Website: www.hydro.co.uk/helpandadvice

Scottish Power

No specific scheme available for individual consumers. Not-for-profit organisations can apply for funding to provide support for those in fuel poverty. Priority is given to projects aimed at helping families with young children.

- Apply via website or phone to request a form
- Website: www.energypeopletrust.com
- Application Request Number: 0141 568 3492

Home Heat Helpline

The Home Heat Helpline is a free, central phone number offering practical advice for people concerned about paying their energy bills. The Helpline is staffed by specially trained advisors. In addition to providing support for individuals, the Helpline handles calls from care professionals, community workers and from organisations such as the Citizens Advice Bureau and housing providers.

Call the Helpline on **0800 33 66 99**

Open 9am-8pm Monday-Friday and 10am-2pm Saturday.

It also offers an online enquiry service: www.homeheathelpline.org.uk

Home Heat Helpline is a free national service to help electricity and gas customers who are considered to be vulnerable. It is funded by the energy companies and is aimed particularly at those who:

- are of pensionable age
 - have young children and are on a low income, or
 - are disabled or have a long-term health condition.
- **The helpline may be able to help customers by:**
- identifying ways to save energy
 - explaining how to access reduced and social tariffs

- helping with applications for grants for free home insulation
- enabling them to join the Priority Service Register
- helping agree a flexible payment option for those who have fallen behind on bill payment
- carrying out a benefit entitlement check
- providing a disconnection safety net to ensure that no vulnerable customer will be knowingly disconnected, even if they are unable to pay their bill.

6a Other Sources of Help and Advice

- **Consumer Direct**

08454 04 05 06

Provides independent help and advice to energy customers.

- **Home Energy Scotland Hotline**

0800 512 012

Offers free, impartial energy advice as well as information on the **Energy Assistance Package** and other energy saving grants and schemes.

- **Home Heat Helpline**

0800 33 66 99

Provides free, practical energy advice for people concerned about paying their gas and electricity bills.

- **Citizens Advice Bureaux**

Offer free impartial advice on a wide range of subjects including benefits, debt and money advice and consumer issues.

An online advice service is available at www.adviceguide.org.uk. For general information on Citizens Advice Scotland and to locate the nearest Bureau see www.cas.org.uk

- **National Debtline**

0808 808 4000

Offers free, confidential and independent advice on ways to deal with debts.

- **NHS 24**

08454 24 24 24

Provides information on health issues.

Information can also be found at www.nhs24.com

- **Solid Fuel Association**

0845 601 4406

For tips on saving energy and advice on open fires and solid fuel central heating systems.

- **Jobcentre Plus**

0800 555 6688

Provide information and support on a range of benefits, including Cold Weather Payments.

- **Winter Fuel Allowance Helpline**

08459 15 15 15

Provides information on the Winter Fuel Allowance

- **Energy Saving Trust**

0800 512 012

A network of advice centres which provide free, independent and local energy saving advice to householders. In Scotland the same organisation provides advice on the Energy Assistance Package and other grants or loans available to householders through the same hotline. www.energysavingtrust.org.uk

- **Macmillan Cancer Support**

0808 808 00 00

Provides up-to-date information on cancer for patients, relatives and carers, including financial support.

www.macmillan.org.uk

- **Age Scotland**

0845 125 9732

The Scottish Helpline for Older People helps older people and those who care for or work with older people to find an answer to questions about community care, tax, pensions, benefits or any other issue. www.agescotland.org.uk

Main Customer Service Phone Numbers for the Big Six Suppliers

- **ScottishPower 0845 270 0700**
- **EDF Energy 0800 096 9000**
- **Scottish Gas 0800 048 0202**
- **E.ON 0845 301 5793**
- **Scottish Hydro Electric 0800 223 377**
- **npower 0800 316 2604**

Department for Work and Pensions (DWP)

This is the main Government department responsible for ensuring that people get any financial help to which they may be entitled.

They are there to assist families with children, pensioners, the disabled and their carers and also people of working age.

The DWP contact details are listed in the phone directory and they are happy to assist with enquiries. Jobseeking, benefits and pensions – who to contact

Jobcentre Plus benefits

To make a claim for benefit call 0800 055 6688.
Lines are open from 8.00 am to 8.00 pm, Monday to Friday.

The Pension Centre

Contact the local pension centre to make an enquiry about:

- making State Pension claims
- making Pension Credit claims
- existing State Pension or Pension Credit claims

Call 0800991234 or online at www.direct.gov.uk

Disability benefits

The Benefit Enquiry Line is a telephone advice and information service. People can call if they are sick or disabled or if they are caring for someone and acting on their behalf.

Telephone: 0800 88 22 00 -It is open from 8.30 am to 6.30 pm Monday to Friday and from 9.00 am to 1.00 pm on Saturday.

The Benefit Enquiry Line gives general advice on benefits. Enquiries relating to a specific benefit claim should be directed to the office dealing with your claim.

Disability Living Allowance and Attendance Allowance Helpline – after a claim has been made/when already in receipt of these benefits

Telephone: 08457 123 456 -The helpline is open from 7.30 am to 6.30 pm, Monday to Friday.

Employment and Support Allowance and Incapacity Benefit

To enquire about claiming Employment and Support Allowance, contact the contact centre. Lines are open Monday to Friday, 8.00 am to 8.00 pm. Telephone 0800 055 6688 -If the householder is already receiving Employment and Support Allowance or Incapacity Benefit, contact the office dealing with their claim. The address and phone number on letters that were sent to the claimant by the office.

Carer's Allowance Unit

The Carer's Allowance Unit provides information regarding Carer's Allowance, the main state benefit for carers, including eligibility and how to make a claim. Telephone: 0845 608 4321 -The Unit is open Monday to Thursday from 8.30 am to 5.00 pm, and Friday from 8.30 am to 4.30 pm.

Directgov

Directgov is an online portal to public services information as well as contact telephone numbers for the agencies and units dealing with benefits and other claims. It also states the eligibility criteria for benefits. See www.direct.gov.uk

Winter Fuel Allowance

Everyone aged over 60 should receive a yearly Winter Fuel Allowance from the Government. People should usually claim in the first year they become

eligible. The allowance is then paid automatically every year and for winter 2011/12 it will be £125 - £300 per household depending on circumstances. See www.direct.gov.uk for more details. For further information, contact the **Winter Fuel Allowance helpline** on **08459 15 15 15**.

Cold Weather Payments

Cold Weather Payments of £25 are issued to those meeting the eligibility criteria when the average temperature at the closest weather station falls below **00C for seven consecutive days (during the period 1 November to 31 March)**.

The payment is made automatically to people receiving Pension Credit, Income Support, income-based Jobseeker's Allowance or income related Employment and Support Allowance and with one of the following:

- A pensioner premium, higher pensioner premium or enhanced pensioner premium
- A disability premium, enhanced disability premium or severe disability premium
- A disabled child premium
- Child Tax Credit that includes a disability or severe disability element
- A family with a child who is under five

Many people are not claiming all the benefits that they could. Cold Weather Payments (which don't affect entitlement to any other benefits) will only be made to people claiming one of the qualifying benefits.

For further information contact **Jobcentre Plus** free on **0800 555 6688**.

7. Renewables

1. Renewable Technologies and Planning
2. Solar PV
3. Solar Thermal
4. Wind Turbines
5. Ground Source Heat Pumps
6. Air Source Heat Pumps
7. Water Source Heat Pumps
8. Micro Combined Heat and Power
9. Biomass
10. Micro Hydro

Installing renewable technologies can help to limit the amount of electricity and gas which households need to 'buy' from energy suppliers, or minimise how much heating fuels a household needs to purchase for its heating requirements. This can help save money. Energy Action Scotland runs a City and Guilds Renewable Energy in the Home training course. This course aims to increase the knowledge and understanding of energy advisors on household renewables and low carbon technologies as realistic interventions to reduce fuel poverty.

Renewable Technologies and Planning

There are a number of micro generation renewable technologies now available that can be incorporated into both new developments and existing homes. These can reduce greenhouse gas emissions (which contribute to climate change) and save money by providing cheap energy and reducing the impact of gas and electricity price rises. Anyone intending to install domestic renewable technologies should be advised to first install 'traditional' energy efficiency measures such as cavity wall or loft insulation where possible.

The Town and Country Planning (General Permitted Development) (Domestic Micro generation) (Scotland) Amendment Order 2009 grants rights to carry out certain limited forms of development on the home, without the need to apply for planning permission. The scope of the TCP (GPD) in Scotland now extends to the following technologies:

Solar PV and solar thermal (roof mounted) is permitted unless:

- panels protrude more than 200mm when installed
- installed on any part of the external walls of the building if the building contains a flat panels, when installed on a flat roof, are situated within 1 metre from the edge of the roof or protrude more than 1 metre above the plane of the roof panels, when installed, project higher than the highest point of the roof (excluding the chimney)

- the building is within a conservation area and the solar PV or solar thermal equipment is installed on a roof which forms the front of the building and is visible from the road.

The solar PV or solar thermal equipment must, as far as is reasonably practical, minimise its effect on the amenity of the area and be removed when it is no longer needed or used for domestic micro generation.

Solar PV and solar thermal (stand alone) is permitted unless:

- more than 4 metres in height
- above a maximum area of array of 9m²
- installed a distance from the boundary of the curtilage of the dwelling house which is less than the height of the array
- within the curtilage of a listed building
- results in more than one free standing solar
- the building is within a conservation area and the solar PV or solar thermal equipment is installed on a wall or roof which forms the front of the building and is visible from the road.

The solar PV or solar thermal equipment must, as far as is reasonably practical, minimise its effect on the amenity of the area and be removed when it is no longer needed or used for domestic microgeneration.

Wood burning boilers and stoves, and micro-CHP is permitted unless:

- the flue exceeds 1m above roof height (excluding the chimney)
- installed on the principal elevation and visible from a road in buildings in Conservation Areas
- the flue is situated within an Air Quality Management Area (when CHP is wood fuelled)

Ground source heat pumps:

Permitted

Water source heat pumps:

Permitted

Micro and small wind

TCP (GPD) does not cover micro or small wind. Further legislation is expected later this year and it is expected that roof mounted and free standing wind turbines will be permitted at detached properties that are not in conservation areas. Consult with the local authority regarding planning permission.

Air source heat pumps

TCP (GPD) does not cover air source heat pumps. Further legislation is expected later this year and it is expected that air source heat pumps will be permitted developments. Consult with the local authority regarding planning permission.

Note that permitted development rights are not extended to Listed Buildings which are covered by other planning regulations.

Most renewable technologies must be installed by an appropriately qualified/registered/approved installer.

Always check with the local authority to find out whether planning permission is required or not.

Solar PV

Solar Photovoltaic is a technology in which daylight is converted into electrical power. The most common systems comprise a number of semiconductor cells (the cells comprise one or two layers of a semi conducting material, usually silicon, which converts solar energy into electrical energy) interconnected to form a solar panel or module. A number of modules are usually connected together in an array. Solar PV can either be roof mounted or free-standing in modular form, or integrated into the roof or façades of buildings as solar shingles, solar slates or solar glass laminates. Solar PV can be connected to the national grid or used as a stand-alone system.

Solar PV:

- Does not generate greenhouse gases or cause pollution when in use. Each kilowatt-peak (kWp) of electricity produced can save approximately 455 kilograms of carbon dioxide emissions compared with electricity generated from fossil fuels
- Has no moving parts, and is low maintenance
- Can be integrated into the building fabric
- Does not require direct sunlight.

Solar Panels (Thermal)

Solar collectors are panels containing fluid that absorb the sun's energy and use this to heat water contained within a storage tank for use within the home, normally for domestic hot water heating.

Solar water panels come in two main forms: flat plate (the collectors are in a box which is usually glazed and insulated behind); and evacuated tubes (where vacuum glass tubes enclose each pipe and its associated absorber plate acts as the insulation). Flat plate tends to be cheaper to buy but evacuated tubes are more efficient.

Solar panels:

- can meet almost all domestic hot water requirements during the summer months (approximately half all total annual requirements) for an average household
- have no moving parts (excluding plumbing system parts) and are low maintenance
- produce energy even with diffused sunlight.

The cost of a solar system varies depending on the type of system used and the amount of hot water required. A collector area of 3-5m² is typically installed for a family of four.

For solar energy collectors the optimum location is facing slightly west of due south and at a tilt of 30 - 40°. If the roof surface is in shadow for parts of the day, the output of the system decreases. Solar panels are heavy and the roof must be strong enough to take their weight.

Wind Turbines

Wind turbines convert the power in the wind into electricity, using rotating blades to drive a generator. The electricity produced can be used directly, used to charge batteries or linked directly into the national grid. The power of a wind turbine increases exponentially in relation to the speed of the wind, and the diameter of the blades. This makes larger turbines with higher wind speeds more cost effective e.g. the energy payback for larger turbines in windy places is multiplied.

There are two types of domestic-sized micro wind turbine:

Mast mounted:

- these are free standing and are erected in a suitably exposed position

Roof mounted:

- these are smaller than mast mounted systems and can be installed on the roof of a home

If a micro wind turbine eligible for feed in tariffs (FiTs) is connected to the grid in a location with high wind speeds, consumers can sell excess or surplus generated electricity to an electricity supply company, and earn an added export tariff. If a wind turbine is not connected to the grid, surplus electricity can be stored in a battery. Wind turbines need to be appropriately sited on or off the electricity grid. The issue of intermittency has to be taken into consideration, as well as amenity issues in terms of noise and visual amenity. NB - Field trials have demonstrated that small wind turbines need to be sited in appropriately windy and usually exposed locations to operate optimally. Approved installers can advise on the best locations and should be able to provide fairly accurate predictions on energy outputs. Energy outputs for wind are very site-specific, so at least a three month period of advance wind speed testing is recommended, as well as certified products and installation.

Ground Source Heat Pumps (GSHP)

Ground source heat pumps (GSHP) transfer low-temperature heat from the ground into the home to provide space heating and in some cases, to pre-heat domestic hot water. Beneath the surface, the ground stays at a fairly constant temperature, so a ground source heat pump can be used throughout the year.

GSHP needs electricity to run, but it should use less electrical energy than the heat it produces. A GSHP system comprises a ground loop and a heat pump at ground level. The ground loop is a network of pipes sunk in a borehole or

buried in a straight or horizontal ('slinky coil') trench. It is a closed circuit and filled with a mixture of water and antifreeze, which is pumped round the pipe absorbing heat from the ground. The heat pump raises the temperature (through a process of evaporation, compression and condensation) for supplying a heating system.

The heat produced by GSHP is at a lower temperature than other forms of heating – making it best suited to under floor heating, which requires lower temperatures, rather than radiators (or, if radiators are used, they should be properly-sized). Those installing GSHP need to consider whether a back-up system will also be required.

GSHPs differ in size and complexity, so cost and payback are difficult to specify. Payback is also influenced by: efficiency of the system; the type of system being replaced by GSHP; energy efficiency of the home; whether GSHP is also being used for heating the domestic hot water supply. The efficiency of a GSHP system is measured by the Coefficient of Performance (CoP). This is the ratio of units of heat output for each unit of electricity used to drive the compressor and pump for the ground loop. Typically, for every unit of electricity used to pump the heat, 3 to 4 units of heat are produced. In addition to planning requirements, consideration needs to be given to the area and type of land and access for machinery.

The Energy Saving Trust has just completed field trials of ground and air source heat pumps, in order to get a better idea of how they perform and the savings they achieve in real life environments. Read the final report 'Getting warmer: a field trial of heat pumps' on their website at www.energysavingtrust.org.uk

Air Source Heat Pumps (ASHP)

Air source heat pumps (ASHP) absorb heat from the outside to heat buildings. There are two types of air source heating systems. Air-to-air systems provide warm air, which is circulated to heat a home. Air-to-water systems heat water to provide heating to a home through radiators or an underfloor system. ASHP can extract useful heat from air at temperatures as low as minus 15°C. ASHP needs electricity to run, but it should use less electrical energy than the heat it produces

Typically, for every unit of electricity used to power the pump, 3 to 4 units of heat are produced. ASHPs extract heat from the outside air, and use it to heat your home and hot water. An air source heat pump has three main parts: an evaporator coil which absorbs heat from the outside air; a compressor which drives the refrigerant through the heat pump, compressing it to increase its temperature and; a heat exchanger which transfers the resulting heat to air (for warm air convection systems) or water (for radiators, underfloor heating or pre-heating water in a storage tank).

Water Source Heat Pumps

Water source heat pumps (WSHP) absorb heat from a source of groundwater to heat buildings. There are two types of WSHP, water-to-air systems provide warm air, which is circulated to heat a home and water-to-water systems heat water to provide heating to a home through radiators or an underfloor system. A water source heat pump system extracts heat from a local water source and usually operates exactly like ground source heat pumps within a 'closed loop' system. In a closed loop system, the pipe work will simply be sunk to the bottom of a water course. However in some instances a water source heat pump can operate using an 'open loop' system. This involves water being abstracted from a borehole and discharged via a heat exchanger to a river or sewer. These systems can be very efficient because of consistent water temperatures.

Micro Combined Heat and Power (CHP)

Micro-CHP is a specific form of CHP designed for individual households. It replaces a standard domestic gas boiler, generating heat and electricity simultaneously, from the same energy source. A typical domestic system is expected to have the potential to generate up to 1kW of electricity per hour, which would be enough to power the lighting and appliances in an average home. The amount of electricity generated ultimately depends on how long the system is running.

Most domestic micro-CHP systems use mains gas or Liquid Petroleum Gas (LPG) as a heating fuel, although they can also be powered by oil or bio fuels. While gas and oil are not renewable energy sources (they are fossil fuels), the technology is still considered to be a 'low carbon technology' because it is more efficient than just burning the fossil fuel for heat and getting electricity from the national grid.

Micro-CHP systems should always be installed and run to meet the heating needs of the building, rather than to generate more heat than is needed just to meet electricity demand. The electricity generated should be treated as a useful by-product of heat generation. For this reason, electricity will only be generated when there is a heat demand.

Wood Fuelled Heating (Biomass)

Wood fuel is often referred to as biomass, bioenergy or biofuel. Biomass is produced from organic materials, either directly from plants or indirectly from industrial, commercial, domestic or agricultural products. It is considered to be a carbon neutral fuel. Wood fuel includes forest products, untreated wood products, energy crops and short rotation coppice (SRC), e.g. willow. Small-scale domestic applications of wood fuel usually take the form of wood pellets, wood chips and wood logs.

Homes can either use stand-alone stoves providing space heating for a single room, or boilers connected to central heating and hot water systems. Stoves (which can often be fitted with a back boiler to provide water heating) can be fuelled by logs or pellets but only pellets are suitable for automatic feed. Boiler

systems are suitable for pellets, logs or chips. Many boilers will dual-fire both wood chips and pellets, although the wood chip boilers need larger hoppers to provide the same time interval between refuelling. Boilers can be designed with an integral hot water energy storage or accumulator tank that stores water up to 90° C.

The vent material must be specifically designed for wood fuel appliances and there must be sufficient air movement for proper operation of the stove. Chimneys can be fitted with a lined flue. Wood can only be burnt on exempted domestic appliances, under the Clean Air Act. Installation must comply with the appropriate safety, planning and building regulations (e.g. Part J of the Building Regulations). The cost for boilers varies depending on the fuel choice and payback depends both on the fuel being used and the fuel being replaced.

Micro Hydro

Hydro-power systems convert potential energy from water to kinetic energy (or the energy used in movement) to turn a turbine to produce electricity. Micro hydro refers to generation capacity below 100kW. Hydro power requires the water source to be relatively close to where the power will be used, or to a suitable grid connection. Hydro systems can be connected to the main electricity grid or as a part of a stand-alone (off-grid) power system. In a grid-connected system, any electricity generated but not used can be sold to electricity companies.

In an off-grid system, electricity can be supplied directly to the devices powered or through a battery bank and inverter set up. A back-up power system may be needed to compensate for seasonal variations in water flow. Energy available in a body of water depends on the water's flow rate (per second) and the height that the water falls from. The actual output will depend on conversion efficiency (the power of the water into electrical power). Total system costs can be high but may be less than the cost of a grid connection and with no electricity bills to follow. It should be noted that in off-grid applications the power is used for lighting and electrical appliances. However space and water heating can be supplied when available power exceeds demand.

Relevant planning authorities should be consulted to ensure that site and design are acceptable and to identify any other permissions required.

8 Heating and Health

The Impact of Cold Temperatures on Health

A World Health Organisation Report in 1985 established that there is a link between poor health and low indoor temperatures.

Some existing conditions can be affected badly by cold and others can be brought on as a result of prolonged exposure to the cold.

Respiratory disorders can be worsened by prolonged exposure to low indoor temperatures. People living in cold homes have an increased tendency to suffer colds, flu, bronchitis and pneumonia.

At temperatures below 12°C blood tends to thicken, leading to an increase in blood pressure and increased risk of heart attack and stroke as the heart works harder to pump blood round the body.

Hypothermia is caused by longer-term exposure to the cold (though longer term may only be a matter of a couple of hours). The chronically sick, disabled and those with lower mobility levels are particularly at risk from hypothermia.

In addition cold conditions in a home can contribute to condensation dampness and mould growth. These have a detrimental effect on some allergies.

Mould spores and dust mites in the air can cause allergic reactions, which in turn can cause problems for people with respiratory illnesses such as asthma. In Britain, a cold spell during an otherwise mild winter can see the following depending on its duration:

- After two days a sudden rise in heart attacks, by up to a third;
- After five days there is a big rise in the number of strokes;
- And twelve days into a cold spell there is a rise in respiratory illnesses.

Increased Winter Mortality

In most north European countries more people die in the four months from December to March than during the rest of the year.

This “excess mortality” is considerably higher in the UK at 14% than other countries - typically 4-7% and even Siberia has a lower rate. There were 2,760 “additional” deaths in Scotland during the winter of 2009- 2010, which was less than the 3,510 the previous winter.

Winter cold kills 300 people per day (in the UK) on average, most of them elderly.

Contributing factors include low income, inefficient heating systems, external temperature fluctuations, and excessive dampness and mould growth associated with poor housing stock.

In Scotland we have long and damp winters which are worse for health. Factors affecting excess winter mortality are varied and complex, but there is a strong relationship between thermal standards in housing and excess winter deaths.

The UK has much higher winter deaths rates than other countries with more severe winter climates, implying that it is not outdoor exposure to cold that is the key determinant. It is generally accepted that the majority of excess winter deaths could be prevented if everyone could be kept warm in their homes during the winter months.

Asthma and damp homes

Children are more likely to stay asthmatic if they live in a damp home, according to new research.

A German study, published in the journal Thorax, has found that dampness - long associated with wheezing and coughing - is also a risk factor for asthma, partly because it helps the growth of the house dust mites which irritate asthmatics' airways. Night-time wheezing and shortness of breath was strongly linked to dampness in the home.

- The UK has one of the highest rates of asthma symptoms in the world
- Around 5.2 million people are diagnosed in the UK (Asthma UK 2008) – 500,000 in Scotland
- The NHS spends £850 million per year treating asthma
- Teenage asthmatics living in damp homes are three times as likely to suffer night-time wheezing.

Getting the Temperature Right

Low indoor temperatures are connected with a number of health issues and most people spend more than 90% of time indoors. The link between fuel poverty and health has often been examined. Professor Christine Liddell, of the University of Ulster, reported in 2008 that every £1 spent on reducing fuel poverty saved the NHS 42 pence. Decreasing indoor temperature below the comfort zone progressively influences the respiratory, cardiovascular and thermoregulatory systems and consequently the maintenance of good health. The start of discomfort is likely to indicate the commencement of health risks, so that the temperatures required for comfort and for health are broadly the same.

- **For comfort and health, the temperature of the main occupied room should average 21°C.**

- **For other areas such as bedrooms, bathrooms and halls 18°C is recommended.**

Two groups that may need higher temperatures are the sick and disabled. Restricted mobility inevitably results in more time spent in the home and the reduced level of activity means that a higher temperature is needed to achieve comfort. An important point to note is that many very old people find it harder to detect temperature changes than other age groups. In some cases, temperatures of **15-16°C may not be experienced as 'cold'** by the old person but will nevertheless be injurious to health. Ensuring the home is adequately heated is very important. Inadequate heating can contribute to other problems in housing which affect health, namely dampness and condensation.

Condensation and Dampness

Warm air holds more moisture than cold air. Condensation occurs when warm, moist air comes into contact with a cold surface, such as a single glazed window or an uninsulated external wall. When the moist air comes into contact with the cold surface it turns back into water droplets – condensation. Everyday activities contribute to the amount of moisture in the air around our homes:

- **Bathing** can result in 0.5 to 1 litre of additional moisture
- **Cooking by gas** over 24 hours can result in 2 to 4 litres of additional moisture
- **Using a bottled gas heater** can result in 4 litres of additional moisture
- **Drying clothes** can result in 3 to 7.5 litres of additional moisture
- **2 people active for 16 hours** can result in 1.5 to 3 litres of additional moisture
- **2 people sleeping for 8 hours** can result in 0.5 litre of additional moisture

Condensation in the home is caused by:

- Inadequate Heating
- Inadequate Insulation
- Inadequate Ventilation
- Producing Excessive moisture

Human beings produce water vapour - this cannot be avoided. However, condensation dampness is different to other forms of dampness because the inhabitants may be able to exercise some control over the amount of condensation in the home.

Condensation dampness can occur in houses that are insufficiently heated, poorly insulated, or not properly ventilated. Installing loft insulation, cavity wall insulation and draught proofing measures will reduce and minimise

condensation in the home, as will effective use of heating. However, it is equally important to ensure that houses are properly ventilated.

Helpful tips on avoiding/minimizing condensation dampness include:

- **Keep lids on pans when cooking**
- **Dry clothes outside when possible**
- **Avoid using flueless bottled gas heaters**
- **Ventilate all the time. Increase ventilation in the kitchen and bathroom when in use**
- **Maintain a background heat all day in colder weather**