Stoke–on–Trent

# Fuel Poverty Strategy 2016-20

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# FOREWORD

**Councillor Randolph Conteh**
Cabinet Member for housing, communities and safer city

**I am delighted to introduce Stoke-on-Trent City Council's new Fuel Poverty Strategy for the period 2016-2020.**

The success of the previous strategy has gone a long way to improving the energy efficiency of homes in Stoke-on-Trent, but many properties still need help out of fuel poverty.

Energy bills are likely to increase during the life of this strategy, and household incomes that rely on welfare benefits will also be at risk during the same period due to welfare reform changes.

This strategy aims to tackle the root causes of fuel poverty for all households in Stoke-on-Trent irrespective of what property they live in and will focus on the following key objectives:

1. Reduce energy consumption through behavioural change;
2. Improve building fabric and reduce cold-related illnesses;
3. Maximise household income and reduce household costs where possible; and
4. Increase the amount of energy generated from renewable and low carbon sources to provide secure, price predictable energy.

In a period of increasing pressures on resources, this strategy is the focus point for co-ordinating all the necessary solutions to attempt to break the cycle of fuel poverty in partnership with our key strategic stakeholders.

To support the implementation of this strategy the Council are reviewing and updating information about fuel poverty in the city by commissioning a new Private Sector Stock Condition Survey (completion Spring 2017) and developing a Renewable Energy Strategy (2017 -2021). This additional work will help us to focus measures to tackle fuel poverty where they are really needed in the city.

I would like to thank everyone who has contributed and helped in the development of this important strategy.

# FUEL POVERTY STRATEGY 2016-20

**Aim:**

**The aim of this strategy is to reduce the rate and risk of fuel poverty in Stoke-on-Trent**

**Objectives:**

- Reduce energy consumption through behavioural change
- Improve building fabric and reduce cold related illness
- Maximise household income and reduce household costs where possible
- Increase the amount of energy generated from renewable and low carbon sources to provide secure, price predictable energy.

**Outcomes:**

Delivery of this strategy will ensure that there is:

- A co-ordinated and comprehensive approach to tackling the rate and risk of fuel poverty in the city.
- A strategic framework for commissioners funding action on fuel poverty.
- A source of information to advise agencies and householders on practical ways to reduce the risk of fuel poverty.

**Fuel Poverty Target:**

All new projects should aim to achieve an EPC rating of C when designing, commissioning and delivering home retrofit schemes but it is acknowledged that a balance may need to be struck between taking an incremental or 'whole-house' approach to energy efficiency improvements, given the associated impacts on costs and thereby the numbers of homes that can be supported. Therefore, as a minimum, and in-line with national policy, the fuel poverty target is to ensure that as many fuel poor homes as is reasonably practicable achieve a minimum energy efficiency standard of Band E by 2020.

# INTRODUCTION

## STRONGER TOGETHER

*Working together to create a stronger city we can all be proud of*

**Work with residents to make our towns and communities great places to live**

- Deliver a significant improvement in housing quality by investing in homes and driving up housing standards
- Involve communities in making each town and neighbourhood a great, vibrant and healthy place to live and work
- Promote security of affordable energy for residents and businesses in the city

**Support vulnerable people in our communities to live their lives well**

- Support residents to manage their money effectively, improving uptake of benefits for those who are eligible

**A commercial council, well governed and fit for purpose, driving efficiency in everything we do**

- Invest in projects to generate a return to protect services

Fuel poverty is a distinct and national problem that can cause negative health impacts and considerable hardship. However, investing in actions that mitigate the risks of fuel poverty – low income, energy inefficiency and high energy prices – will not only reduce the rate of fuel poverty, but can reduce carbon emissions to help meet the UK legally binding carbon reduction targets; improve health and wellbeing, reduce cold-related ill health and the risk of excess winter deaths; lower NHS and social care costs; improve the UK's energy security by reducing our reliance on imported gas; and generate economic growth.

Doing nothing is not an option. Fuel poverty levels in the city are higher than the national average and there is a high risk that the number of fuel poor homes could increase due to rising energy prices and the investment required to transition to a low carbon economy.

In particular, the Fuel Poverty Strategy will help bring about behavioural change to enable residents to manage their use of energy more efficiently. The Strategy objective to maximise income and reduce household costs links closely to the city's wider objectives to support vulnerable people and address poverty related hardship in the city.

# DEVELOPMENT OF THE STRATEGY

An independent review[1] of fuel poverty led by Professor John Hills in 2012 determined that fuel poverty is a distinct and national problem. It is a major social problem, causing considerable hardship and negative health impacts, as well as impeding efforts to reduce $CO_2$ emissions. Households living in or on the brink of fuel poverty often face very difficult trade-offs between meeting their fuel bills, spending on other essentials such as food and falling into debt, all of which can exacerbate physical and mental health problems.

Improving the energy efficiency of the housing stock and providing affordable heat is the most cost-effective, sustainable and long-term solution to tackling fuel poverty. Improving home energy efficiency not only reduces the rate and risk of fuel poverty it can also:

- reduce carbon emissions helping to meet the UK's legally binding carbon reduction targets;
- improve health and wellbeing,
- reduce excess winter deaths
- lower NHS and social care costs
- improve the UK's energy security by reducing our reliance on imported gas
- Generate economic growth[2].

The fuel poverty status of a household depends on the interaction between three key factors: low income, energy inefficiency and high energy prices. Under the new definition of fuel poverty[3], 9.9% of all English households were living in fuel poverty in 2013. The rate of fuel poverty in the city is significantly higher than the national average, with an estimated 14.7% of households living in fuel poverty[4]. Future projections predict that the number of English households currently living in fuel poverty will increase from 2.28 million in 2012, to 2.33 million in 2014, (with increases in energy costs a key factor) posing a significant risk for low income households occupying energy inefficient properties in the city.

In March 2015, the government published its strategy to tackle fuel poverty in England and set a legally binding target that ensures that as many fuel poor homes as is reasonably practicable achieve a minimum energy efficiency standard of Band C by 2030. It includes non-legally binding interim targets to achieve Band E by 2020, and Band D by 2025. However, it should be noted that many fuel poverty charities and stakeholders are calling for tougher fuel poverty targets. For example, the Ending Cold Homes Manifesto[5] recommended that all low income households are brought up to an EPC C standard by 2025. The All Party Parliamentary Fuel Poverty and Energy Efficiency Group[6] argues that under the governments fuel poverty target and milestones, millions of household's could be left waiting up to 15 years to receive essential energy efficiency interventions. Additionally, because the interim target to reach Band E by 2020 is not legally binding interventions will need to be led and funded by local authorities. There is no onus on energy companies to meet this interim target.

Whilst local authorities have a social and legal obligation to lead and enable action on fuel poverty, tackling fuel poverty cannot be achieved by local authorities alone. It will require effective partnership working with public, private and third sector agencies. Third sector agencies are on the front line of providing affordable warmth services but will require support if they are to continue to identify, access, deliver or support action on fuel poverty. The government has to ensure that the policy framework provides funding to support action on fuel poverty. Challenges that may impede action on fuel poverty include;

- local government financial constraints
- constantly changing energy policy
- capacity to develop public private partnerships
- the identification of fuel poor households (and households at risk of fuel poverty).

However, funding for the major energy generation (including supply and connection to affordable heat solutions for domestic consumers), supply chain and energy efficiency programmes is likely to remain the single greatest challenge to reducing the rate and risk of fuel poverty in Stoke-on-Trent.

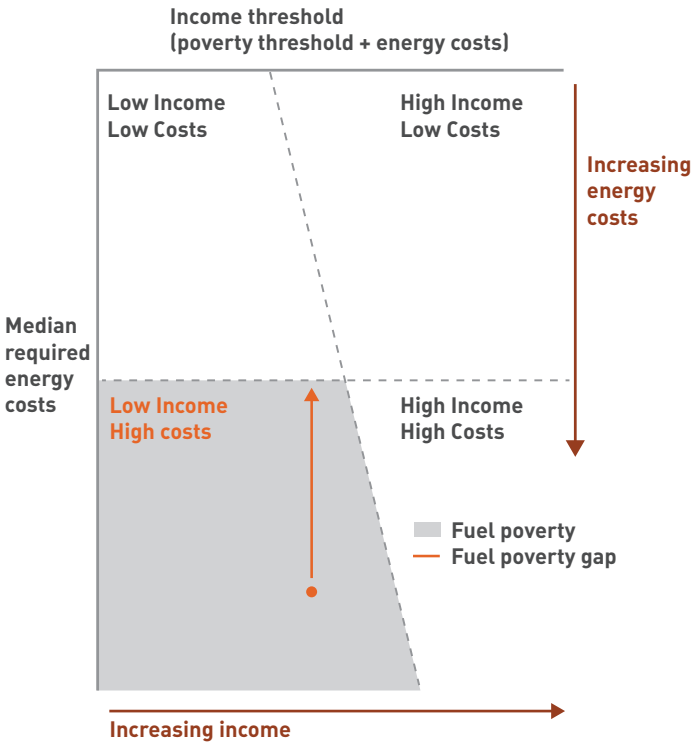
[1]Getting the measure of fuel poverty: Final Report of the Fuel Poverty Review, March 2012
[2]A housing stock fit for the future: Making home energy efficiency a national infrastructure priority, 2014
[3]'Low Income High Costs' indicator – see page 7 for further information
[4]Department of Energy and Climate Change; Fuel Poverty Annual Statistics Report 2015
[5]www.endfuelpoverty.org.uk/2014_manifesto
[6]Response to the Consultation on Cutting the Cost of Keeping Warm: a new fuel poverty strategy for England, www.nea.org.uk

## What is Fuel Poverty and how is it Measured?

The official definition of fuel poverty has changed. In the past, a household was defined as fuel poor if it needed to spend more than 10% of its income on fuel to maintain comfortable conditions (usually 21°C in the living room and 18°C in other rooms). However, this definition was criticised as being over-sensitive to price changes and technicalities in the calculation, and the Hills Review resulted in a more sophisticated definition of fuel poverty, based on households having both:

- Higher than average required fuel costs; and
- If spending this amount on fuel would push residual income below the official poverty line.

This is known as the 'Low Income High Costs' indicator (LIHC). Both indicators put an emphasis on heating, but the cost of hot water, lights, appliances and cooking are also included in the LIHC indicator. Heating and hot water represent 80% of the cost of energy for most domestic households. The new way of estimating fuel poverty reflects both the extent (how many households are in fuel poverty) and depth of the problem (also known as the 'fuel poverty gap') which is defined as the difference between modelled fuel bills and a reasonable cost threshold for each household.




For further information on how fuel poverty is measured, latest statistical trends and analysis of fuel poverty in England, please view the Annual Fuel Poverty Statistics Report 2015 and Fuel Poverty Strategy for England at www.gov.uk. An analysis of fuel poverty in the city can also be found in Appendix 1.

## Fuel Poverty Policy Framework

The key policies and plans informing the Fuel Poverty Strategy include:

- **Home Energy Conservation Act (HECA) 1995**
  HECA is a legal obligation placed on local authorities with housing responsibilities to put in place a plan to improve the energy efficiency of homes within the local authority area.

- **Fuel Poverty Strategy for England**
  The government published its fuel poverty strategy for England on 3 March 2015. The strategy sets out how it will achieve the statutory fuel poverty target of ensuring as many fuel poor homes as reasonably practicable achieve an energy efficiency standard of Band C by 2030 - which became law in December 2014.

- **Climate Change Act 2008**
  The Climate Change Act 2008 sets out a UK legally binding target to reduce greenhouse gas emissions by 16% by 2020 (against a 2005 baseline) and at least 80% in 2050 from a 1990 baseline. This target cannot be met if we continue to rely on fossil fuel based solutions, 95% of all heating in the UK is produced by burning either gas or oil.

- **Public Health Guidance on Excess Winter Deaths and Illnesses**
  The National Institute for Health and Care Excellence (NICE) published guidance in March 2015 for commissioners and practitioners working in local authorities and health services, providing guidance on effective approaches to prevent excess winter deaths and morbidity associated with cold homes, according to the best available evidence.

- **Health and Well Being Strategy 2016 - 2020**
  the strategy builds on the outcomes achieved through the previous 13-15 strategy and focuses on seven priorities. Fuel poverty is identified in the priority to 'keep older people safe and well.' The strategy sets out a vision for older people in which they 'will have a decent and safe home to live in which will be warm and suitable to live in a safe and pleasant environment.

- **Energy Policy**
  This emerging policy will co-ordinate existing and emerging delivery strategies relating to energy usage, generation and supply, linking these with elements of the council's core Policy Framework and ensuring alignment with political priorities and Stronger Together strategic objectives. The Energy Policy will also establish baseline data for current performance and set out clear targets and outcome-based actions and objectives around the council's commitments to energy efficiency, fuel poverty, renewables, carbon reduction and delivery of the District Heat Network project.

- **Emerging Housing Strategy**
  The Stoke-on-Trent City Council Housing Strategy 2016 – 2021 aims to progress the Council's approach to a balanced housing market and create innovative solutions for the delivery of new housing to the residents of Stoke-on-Trent. The strategy will support the growth of a balanced housing market, support employment growth with the right types of housing in the right areas, identify investment in high quality homes, neighbourhoods and services and seek to improve the social and economic wellbeing of our communities. The strategy will be designed in a collaborative way and it is planned that the strategy will be approved and in place by the end of November 2016.

- **Emerging Housing Renewable Energy Strategy**
  The Stoke-on-Trent City Council Housing Renewable Energy Strategy aims to provide a Renewable Energy Strategy for the Council's housing stock together with an associated action plan which will identify key technologies, programmes and investment to allow the council to meet national and local targets on carbon reduction and low carbon energy generation. The strategy will also cover the potential to generate income from renewable energy, explore the potential of revenue through incentives already in operation and develop the potential to save our customers money on their fuel bills. This strategy will be in place by the end of October 2016.

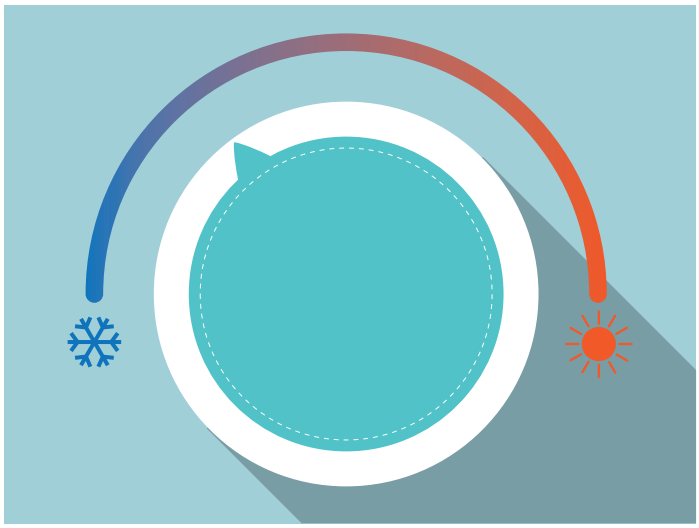
- **Older People's Housing Strategy**
  A priority for the strategy is to improve existing accommodation choices and neighbourhoods, providing age friendly communities where older people feel in control, safe and secure. Improving energy efficiency is identified as part of the ambition to provide high quality accommodation for older people in the city.

- **Emerging Asset Management Strategy 2015 - 2020**
  The Stoke-on-Trent City Council Housing Revenue Account Asset Management Strategy aims to develop a strategic framework within which we can build, develop, manage, maintain and invest in our housing assets drawing from the principles set out within the HRA Business Plan. Whilst the council will continue to place primary focus on the management, maintenance and refurbishment of its existing stock, the strategy will look at a wider scope for developing a Housing Revenue Account Asset Management approach that may include the use of vacant sites, the potential redevelopment of existing sites, use of vacant sites and possible options for the acquisition and/or development of new property and best practice for working with strategic partners. This strategy will be in place by the end of October 2016.

- **The Joint Strategic Needs Assessment – 2011 – 2016**
  Local Authorities and Health Authorities have a duty to produce a JSNA, the purpose of which is to assess current and future health needs to inform strategic decision making and commissioning. Locally the main finding of the JSNA report is that people living in Stoke-on-Trent have significantly poorer health and lower levels of wellbeing than many other areas of the country, with high levels of deprivation in the city being a major contributory factor.

## Energy Hierarchy Principles

The energy hierarchy sets out the easiest and most effective ways to reduce the rate and risk of fuel poverty which can also lead to a cut in a dwelling's CO2 emissions. The principles of the energy hierarchy should be applied to the design, commissioning and delivery of all fuel poverty projects.



### 1 – Use Less Energy

Minimise the demand for energy and cut unnecessary use e.g. switch off the television when not watching or boil only the required amount of water in the kettle. Provide more efficient heating systems.

### 2 – Use Efficiently

Consume optimally such as using energy efficient lights, insulating the loft, walls and floors, double glaze the windows and draught proof the doors and windows.

### 3 – Use Renewable Energy

Use energy from renewable resources such as solar photovoltaic, solar hot water panels, and ground or air source heat pumps. Connect to energy efficient low carbon District Heat networks where available. Alternatively, buy electricity from renewable energy suppliers (although this is a more expensive way to buy electricity).

## Review of 2012-2015 Fuel Poverty Strategy

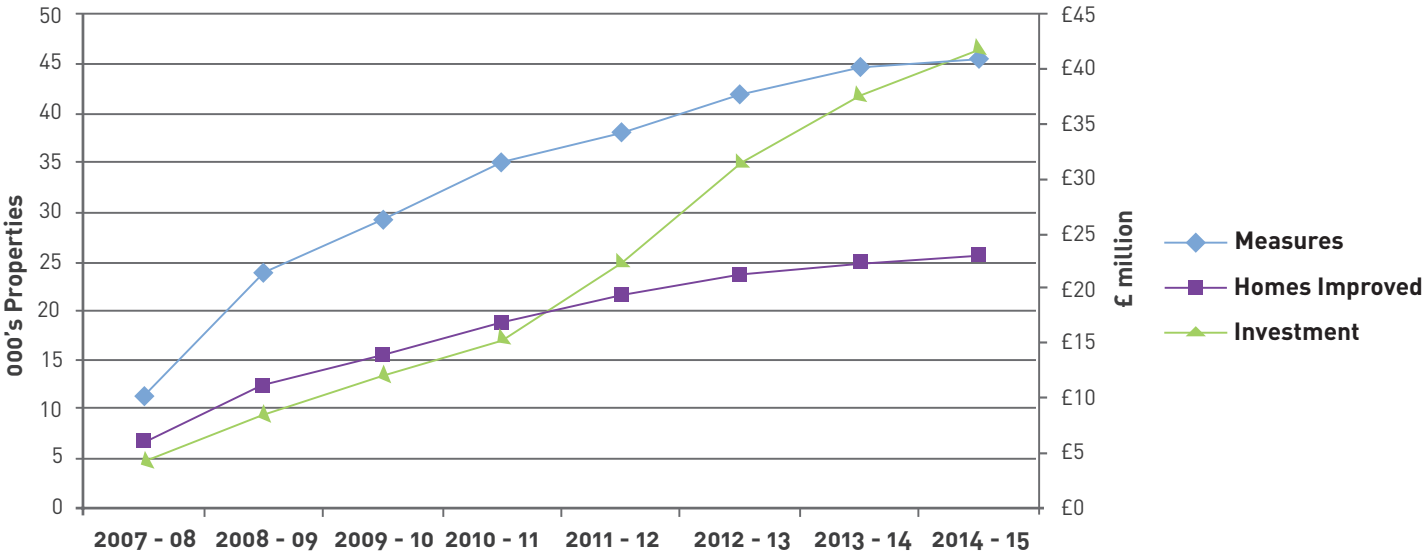



**Chart 1 – Fuel Poverty Investment and Activity in the City**

The aim of the city's previous fuel poverty strategy was to accelerate the installation of domestic energy saving and energy generation measures.

Over the 2012-2015 period:

The city council managed and/ or facilitated delivery of a **c.£19.4 million programme of housing retrofit investment**

Installed **c.7,200 measures** into **c.4,100 homes**

Sourced approximately **£17.5 million of was external investment** from private and public sector partners to support capital investment programmes

As a result of the city council's investment and activity, an independent report prepared in 2013 by energy consultancy 'Homely' rated Stoke-on-Trent **5th out of 384** councils in the UK for improving energy efficiency in the city's ageing housing stock[7].

But despite the level of investment to date and the success of previous retrofit programmes the nature of the city's housing stock, which includes a high density of solid wall properties plus non-traditional and high rise flats, is such that there is an extensive and continuing need for retrofit measures to treat properties. This need must be balanced against the cost of retrofit with costs estimated at £20,000 per house. The cost of retrofit must be set against the benefits achieved. It may be more appropriate to focus on providing affordable heat through District Heat networks which will impact on fuel poverty and reduce carbon emissions.

[7] http://wearehomely.com/cosy-index/

## Cooperative Working

Cooperative Working is a partnership between public and voluntary services, which offers a more joined up and co-ordinated approach to supporting individuals and households. Instead of residents accessing help from a variety of sources to address a range of problems, those with complex needs will be assigned one key worker who will work with them to find solutions. This key worker will 'pull in' expertise from other agencies including the police, fire service, NHS and the voluntary sector if needed.

By bringing the services together service users only need to tell their story once and receive tailored support which meets their needs, at the right time and place. Cooperative Working will also result in better outcomes for local neighbourhoods and value for money for the taxpayer. Public sector savings will come through reducing the need for more costly interventions, such as court proceedings, A&E admissions or escalation of Children's Services involvement with families. Over a three-year period, the programme is estimated to save the city council and its partners in the region of £36 million.

The purpose of Cooperative Working from the customers' point of view is "Help me to solve the problems in my life so I can live my life well". Our vision is a city where residents are empowered to live independent and fulfilling lives. The Cooperative working environment will be crucial to helping deliver parts of this Strategy, by providing advice and support to households and working with teams in the council to help signpost households for more detailed advice.

## Consultation

In November 2014, the city council established a Fuel Poverty Technical Group consisting of officers from commercial, public and third sector partners. The group identified the key objectives that were later consulted on more widely in a workshop held in February 2015. The workshop was attended by over 20 representatives from local authorities, energy suppliers, third sector agencies and Registered Providers. The results of this workshop were recorded and fed into the development of the strategy. Further meetings were held with:

- representatives from the Financial Inclusion Group;
- North Staffordshire and Stoke Citizens Advice Bureau;
- Co-operative and service users from the Working Fifty and Counting Team;
- Engage 50+ Forum.

Comments received during a public consultation on line also fed into the development of the strategy.

The consultation process helped to refine the aims and objectives and shape the final strategy.

# THE BUSINESS CASE

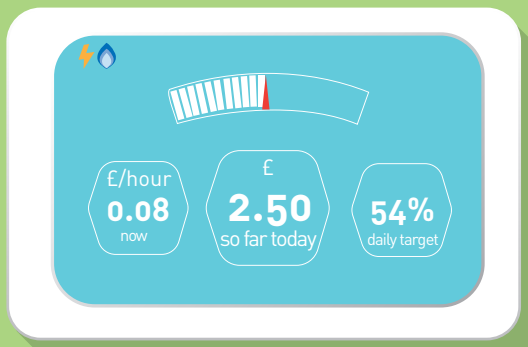
Appendix 2 provides a list of key indicators that may impact the rate and risk of fuel poverty in the city. The following indicators are reviewed:

- Fuel Poverty
- Household Income
- Energy Efficiency and Building Fabric
- Gas and Electricity Consumption
- Renewable Energy Generation
- Energy Prices
- Health Impacts
- Carbon Dioxide Emissions

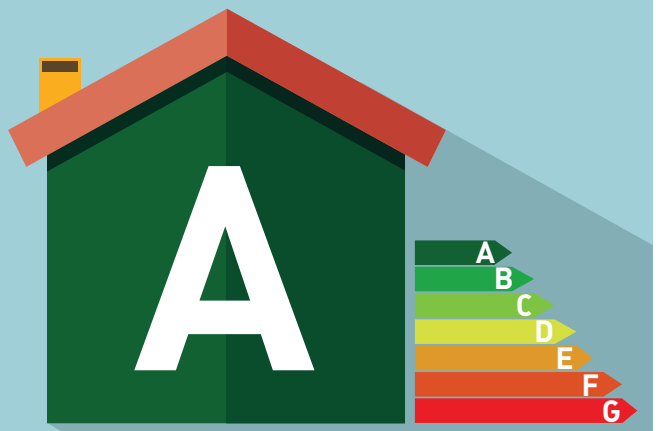
This information is intended to provide designers, commissioners and delivery partners with supporting evidence that demonstrates the need for action on fuel poverty. This may help partners set out the business case when developing funding bids and help policy makers identify the scale of the fuel poverty in the city to ensure that fuel poverty action is included as a priority in emerging policies and plans.

**Strategic Objectives**

**Strategic Objective 1: Reduce energy consumption through behavioural change**

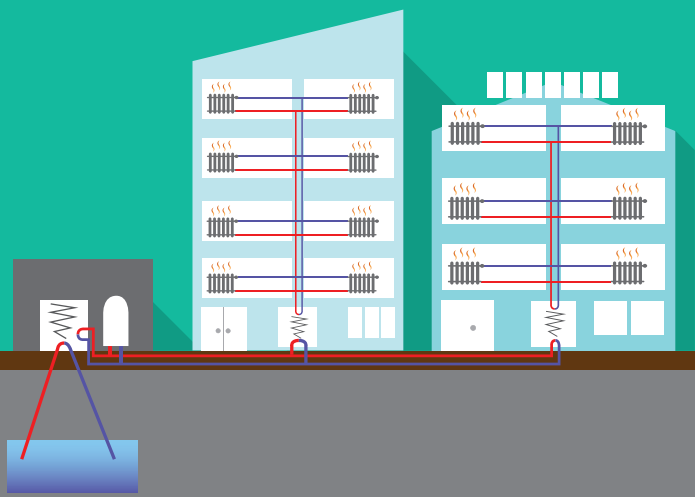



**Strategic Objective 2: Improve building fabric and reduce cold related illness**

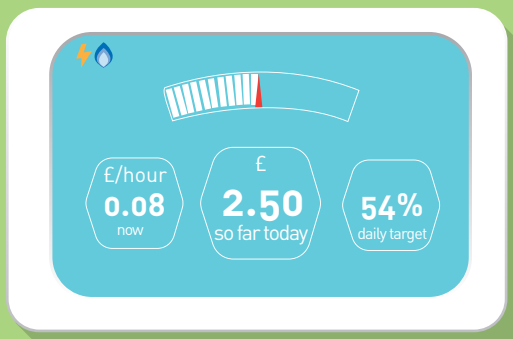



**Strategic Objective 3: Maximise household income and reduce household costs where possible**

**Strategic Objective 4: Increase the amount of energy generated from renewable and low carbon sources to provide secure, price predictable energy**



# STRATEGIC OBJECTIVE 1: REDUCE ENERGY CONSUMPTION THROUGH BEHAVIOURAL CHANGE




- **Positive behavioural change is the most effective and cheapest way to reduce energy consumption and CO2 emissions.**
- **Third sector agencies are well placed to provide behavioural change services but without additional funding, have limited capacity.**
- **Partners should promote the roll out of smart meters and the local authority should liaise with DECC to make local data on smart meter installations available.**
- **NICE guidance recommends that awareness is raised among practitioners and the public about how to keep warm.**
- **All agencies should ensure that residents are able to access information and advice that enables positive behavioural change.**
- **There is a need to raise the profile of behavioural change activity in local and national energy efficiency and climate change policy.**

Despite energy efficiency improvements to many properties across the city and in the UK, domestic energy consumption is still variable and determined chiefly by the way people use energy in their home. Energy use behaviours are often established as well-rooted habits which are hard to alter (e.g. leaving lights and appliances on, how cooking equipment and cooling equipment is used, or how people charge electronic devices and manage heating and hot water controls). If altered, positive behavioural change is the most effective and cheapest way to reduce energy consumption and CO2 emissions.

A poll conducted by National Energy Foundation in September 2014[8] revealed that most British adults say they would like to reduce their energy consumption, either because of the financial cost of using energy or because of the environmental impact. However, around two thirds of British adults interviewed do not know the most effective way to make a typical home energy efficient. Therefore it is imperative that all organisations delivering fuel poverty services ensure that residents are able to access up-to-date information and advice that is clearly sign posted on websites and in customer contact points (e.g. receptions).

The National Energy Foundation report identified that people were more likely to save energy if they were given feedback on their energy bills. Providing residents with feedback on their energy bill could be achieved by supporting and helping co-ordinate the roll out of smart meters cross the city and undertaking home visits for more vulnerable households to explain their fuel bills and what action they can take to reduce energy consumption in their home – for example, by making more efficient use of their heating controls. In line with the principles set out in the energy hierarchy, local authorities and all organisations involved in the delivery of fuel poverty action should include positive behavioural change when designing, commissioning and delivering fuel poverty projects. Third sector agencies already provide behavioural change services but without additional funding, they will have no capacity to support new and emerging programmes unless it is appropriately resourced.

[8]National Energy Foundation, National Energy Study - Providing advice, changing behaviours: understanding energy use in the home, September 2014

An evaluation of the council's housing retrofit schemes prove high take up rates can be achieved if the funding conditions are attractive; there are community advocates; and residents are engaged throughout the schemes. Whilst participation in projects installing energy saving measures has been successful (largely due to schemes being fully funded), providing information and advice that encourages positive behavioural change can be omitted from project delivery as this is a service that is significantly under-resourced, usually as a result of energy policy not incentivising funding providers to finance this action.

Whilst many households are able to access web based behavioural change information and advice, many older and vulnerable households living at risk of fuel poverty do not have the capability to access the same services. These households may need additional support but may not be known to local service providers. These householders are considered hard to reach. Identifying and accessing hard to reach households to deliver support can be difficult and resource intensive as these households may require multiple visits before access (and trust) is gained and advice that results in effective and efficient use of energy is embedded.

Cooperative Working services are working with a range of partners to develop referral pathways into services when they identify a customer with additional support needs. This could include a referral to a fuel poverty agency to help the customer

reduce their energy consumption (and therefore fuel bills) through behavioural change advice. This activity is in-line with the recently published NICE guidance which makes a number of recommendations that if implemented will help front line social care, primary health care, installers and housing staff identify households at risk of fuel poverty.

Smart Meters will provide more flexibility and new control systems can intelligently learn local behaviour. For more vulnerable groups this could be managed automatically to ensure that homes are warm.

There is also a need to raise the profile of behavioural change activity in local and national energy efficiency and climate change policy. This could be achieved by signing up to national initiatives like Climate Local , a Local Government Association

## Behavioural change - Case Study

**Beat the Cold** is a fuel poverty agency working across the city to address issues of fuel poverty and cold related illness. Its services are specifically geared towards supporting those with financial or existing health problems. For example: Mrs M is of pensionable age, has limited mobility, respiratory and pulmonary illnesses. She was initially being supported to find funding to replace a failed boiler and address issues of fuel debt, as Mrs M has excessively high bills for the size and type of property in which she lives.

On installation of the new boiler Mrs M was supported to correctly set the room thermostats and Thermostatic Radiator Valve's, and to set the 7 day programmer to fit in with her lifestyle. At these visits it was noticed that Mrs M would also benefit from making some basic habitual changes, and as a result of our guidance, she has started tucking the curtain behind her radiator, and not over them; using the washer less regularly, and with a full load; switching off appliances that she wasn't using; and filling the kettle appropriately. Through this, she has noticed significant savings in both her gas and electricity bills.

initiative supported by the Environment Agency Climate Ready service, to drive, inspire and support council action on climate change. Locally, in 2014/2015, the city council undertook a study of Energy Efficiency Opportunities in the city to inform the development of a corporate Energy Strategy to be published in 2016. The review, sponsored by the 'European Planning for Energy Efficient Cities' project, considered behavioural, technological and planning perspectives. The development of a corporate Energy Strategy should reflect the city's Fuel Poverty strategy objectives and support behavioural change activity by providing a business case that can draw in funding to support this action.

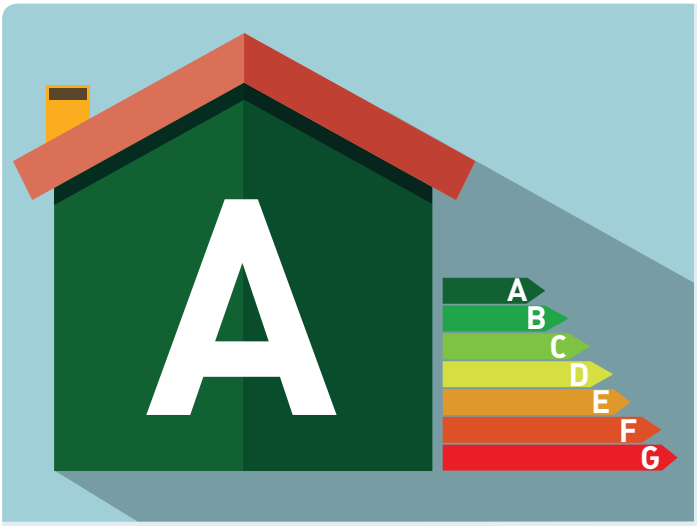
## Behavioural change - Practical Solutions

**The Energy Saving Trust -** helps people to save energy every day. Through their impartial advice, commitment to undertaking research and work with businesses and governments, they are influential in driving behaviour change and inspiring new energy efficiency programmes and policies. Visit the Energy Saving Trust for further information on actions that can save you money.

**Install a Smart Meter in your home** - Smart meters are the new generation gas and electricity meters. Your gas and electricity company will provide and fit your smart meter for you – you don't have to pay anything upfront. With a smart meter you can see how much gas and electricity you're using and what it's costing, in near real time. And they send accurate meter readings to your energy supplier, so you get an accurate bill.

**Tenancy Information Films - Energy Efficiency** – A series of Tenancy Information Films have been produced by Stoke-on-Trent City Council and published on YouTube to raise awareness of what the council is doing to improve the energy performance of its housing stock and to provide tenants with practical energy saving tips.

# STRATEGIC OBJECTIVE 2: IMPROVE BUILDING FABRIC AND REDUCE COLD RELATED ILLNESS




- Policies that improve the efficiency of the housing stock provide a cost-effective, sustainable and long-term solution to fuel poverty.
- Previous UK-wide policies have been too short and subject to peaks, troughs and abrupt transitions, creating the effect of a 'boom and bust' cycle for the retrofit industry.
- Retrofit is an area where local authorities can support economic development by creating and sustaining local employment and economic opportunities.
- There is a need for a longer term plan strategic collaboration with the supply chain and between Registered Providers on housing retrofit.
- Achieving the strategy's fuel poverty target will require all properties with a low energy rating to be identified and appropriately targeted for energy efficiency improvements.
- Householders, landlords and tenants can install a range of energy saving measures to improve the energy performance of their property (see Practical Solutions, p 24)
- For government led or facilitated schemes, there is always a balance to be struck between taking an incremental or 'whole-house' approach to energy efficiency improvements, given the associated impacts on costs and thereby the number of homes that can be supported.
- Retrofit is a risky business if not done well. Developing a high retrofit standard that can be used as a practicable application to inform the design, commission and delivery of retrofit projects will help mitigate risks to retrofit delivery.
- There are significant health benefits to be had from tackling fuel poverty, in terms not only of health outcomes for individuals, but also of health and social care cost savings and wider public benefits.
- Local authorities – through the Directors of Public Health, Health and Well-Being Board and Public Health Teams – are well placed to lead effective strategic planning and deliver action on fuel poverty and cold homes.
- With limited budgets available, local authorities and other agencies would reap the greatest health benefits by focusing on the most cost effective improvements to the poorest housing occupied by the most vulnerable people.

**Improving Building Fabric**

The Fuel Poverty Strategy for England recognises that a permanent solution to fuel poverty is to retrofit[11] the existing housing stock to a high energy efficiency level. Policies that improve the efficiency of the housing stock provide a cost-effective, sustainable and long-term solution to the problem. Improving the energy efficiency of the housing stock not only helps reduce energy consumption, it can generate positive social, environmental and economic benefits.

To improve the energy efficiency of properties the government has two key policy incentives; the Green Deal and Energy Company Obligation (ECO). The Energy Act 2011 paved the way for the Green Deal, which was designed to improve energy efficiency in the nation's homes at no upfront cost to householders, at the same time as cutting carbon emissions and helping the vulnerable. The Green Deal has now ended. The Energy Company Obligation has been extended to 2017 but there are concerns that this is not delivering value for money. It is likely that this will be replaced with a new system, as yet undefined.

The Department of Energy and Climate Change (DECC) publish quarterly statistics on ECO and Green Deal activity by local authority area. The latest report (July 2015)[12] shows that 8,168 households were in receipt of ECO measures in the city. This activity is significantly higher than neighbouring Staffordshire authorities and is above the regional average – households in receipt of ECO measures per 1000 households in the city is 75.6 compared to a regional rate of 61.8. However, the number of Green Deal plans entered into is significantly less. Only 4 plans in the city have been entered into despite 2,844 Green Deal Assessments being completed. This is in line with performance across the rest of the county and wider region, where only 524 'live' plans are reported for the West Midlands Region. This clearly shows a number of market barriers prevented the take up of Green Deal with some households and installers suggesting the interest rate charge is too high and the scheme too complicated.

For further information about Green Deal and ECO please go to www.gov.uk.

An evaluation[13] of the government's energy efficiency scheme (CESP) by the Department of Energy and Climate Change identified the most common challenges to the successful delivery of retrofit schemes, which include:

- A lack of awareness and understanding of ECO amongst local authorities and Registered Housing Providers.
- A range of funding issues, including: expectations from local authorities and Registered Housing Providers that ECO schemes would be fully-funded by energy companies, public spending constraints, the costs of additional works not being covered under ECO, local authority and Registered Housing Provider investment plans being already committed to other priorities, and retrospective payments (whereby local authorities and HAs are paid only once measures are installed) leading to local authorities and HAs taking on significant financial risk.
- The significant amount of up-front housing stock data required in order to judge a scheme's viability, coupled with a large variation in the quality and quantity of housing stock information held by local authorities and HAs.

In addition to these operational challenges, the UK government has to ensure that the policy framework provides the incentives needed to encourage the wider take up of domestic retrofit. This needs to be done in a long term, pro-active way that is consistent, clear and provides stability for the industry. Previous UK-wide policies (such as ECO) have been too short and subject to peaks, troughs and abrupt transitions, creating the effect of a 'boom and bust' cycle for the retrofit industry, whereby a period of funding generates huge demand and stretches the industry to its limits. This is then followed by a significant contraction of demand when funding stops. This short term cycle can prevent the industry from adopting a longer term view and building capacity in a strategic, holistic way.

A recent report[14] says exports from the UK's energy efficiency sector were already worth over £1.8 billion in 2011-2012. In theory there are 20 million homes requiring some degree of refurbishment by 2050 if we are to achieve the target carbon savings. This equates to 10,000 homes per week, or one home per minute. Retrofit is an area where local authorities can support economic development by taking into account the Public Services (Social Value) Act 2012, which came into force on 31 January 2013. The Act provides an opportunity for the council to consider how it can improve the economic, environmental and social wellbeing of Stoke-on-Trent in relation to what is being procured and how it is to be procured.

[11]Retrofit is the transformation of buildings to make them more energy efficient
[12]http://bit.ly/2ci3L4e
[13]Department of Energy and Climate Change, Evaluation of the Community Energy Saving Programme, October 2011
[14]A housing stock fit for the future: Making home energy efficiency a national infrastructure priority, 2013

## Improving the Fabric - Case Studies

**Energy Company Obligation (2013-2017)** – ECO is a legal obligation placed on energy suppliers to reduce carbon emissions from the UK' housing stock. Suppliers achieve this by fully funding or part funding the installation of energy saving measures. In the city, the council has worked with five energy suppliers to manage or facilitate delivery of a £31.6 million programme. This investment led to the installation of c.37,200 energy saving measures (including 1,600 Solid Wall Insulation systems) in c.26,000 homes. The energy saving measures installed under ECO include; Solid Wall Insulation; heating system and control upgrades; draught proofing; and loft insulation. The Energy Saving Trust[15] publishes industry accepted standards for how various measures can benefit households.

**The Private Rented Sector (PRS) Energy Efficiency Regulations (Energy Act 2011)** – will improve the energy efficiency of domestic and non-domestic privately rented properties across England and Wales.

The Regulations will require:

- From April 2016, residential private landlords will not be able to unreasonably refuse consent to a tenant's request for energy efficiency improvements.
- From April 2018, private domestic and non-domestic landlords will need to ensure that their properties reach at least an E EPC rating, or have installed those improvements that could be funded.
- These requirements will apply to all private rented properties – including occupied properties – from April 2020 in the domestic sector, and from April 2023 in the non-domestic sector.

Achieving the strategy's fuel poverty target will require all properties with a low energy rating to be identified and targeted for energy efficiency improvements. The local authority can identify low income communities at risk of fuel poverty by data from DECC on Lower Super Output Areas (which consist of c.675 households). Property condition indicators such as stock condition data or Housing Health and Safety Rating System (HHSRS) are also effective ways to identify energy inefficient properties within these communities. Furthermore, undertaking stock condition surveys every 5 years would be a reliable way to provide local level data to show progress against the strategy's aim and fuel poverty target. It would also enable the local authority to respond effectively and efficiently to a change in future funding frameworks.

Once properties have been identified, retrofit projects should adopt a 'fabric first', and if appropriate, whole house approach which aims to bring a property up to an EPC Band C energy efficiency standard. If this standard is not technically or financially viable, the property should achieve a minimum EPC Band E rating, in line with the targets set out in this strategy and as required by national strategy. A whole house approach to retrofit may help save costs in the long term by reducing the number of visits to the property and mitigating the more than one set of mobilisation, project management and disturbance costs. However, for government led or facilitated schemes, there is always a balance to be struck between taking an incremental or 'whole-house' approach to energy efficiency improvements, given the associated impacts on costs and thereby the number of homes that can be supported.

Retrofit can be a risky business if not done well and retrofit mistakes tend to be hidden behind render and facades, which makes returning to snag projects intrusive and costly. Projects tend to go wrong around the junctions and edges, where trade meets trade, building fabric meets building services, and system meets system. Existing standards and training do not go far enough and serve only to reinforce the silo mentality that has historically characterised the building industry. Working with partners, a high retrofit standard could be developed which could be used to inform the design, commission and delivery of housing retrofit projects to help mitigate risks to retrofit delivery.

[15] www.energysavingtrust.org.uk

Registered Providers (RP) of Social Housing are responsible for their own housing stock. It may be beneficial for RP's to work in partnership when designing and delivering retrofit projects to create economies of scale and maximise efficiencies in project delivery costs. Whilst there are lots of good examples where RP's are already working in partnership with the local authority (for example, the delivery of affordable housing units), there is currently a gap in the strategic collaboration between RP's on housing retrofit. This may be a role led or championed by the Local Enterprise Partnership (LEP) to ensure engagement and strategic planning between RP's across the Stoke and Staffordshire LEP area. Whatever the partnership arrangement, community based schemes are the most effective at targeting support not only to fuel poor households but also to  households at risk of fuel poverty. The cost of works may prohibit private landlords and homeowners from undertaking whole house improvements but landlords will be required to consider what incremental improvements they can make to their properties to be compliant with energy efficiency legislation.

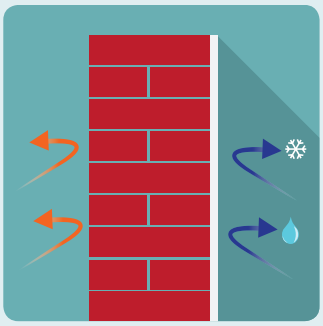
Improving the energy efficiency of new homes is regulated by Part L Building Regulations. Homes built with government funding over the 2011-2015 period were required to achieve the Code of Sustainable Homes Level 3 standard – which was a 25% improvement on the Part L Building Regulations. However, a review by the Homes and Communities Agency[16] for the 2015-2018 funding period concluded that all homes built with government funding only need to achieve Part L Building Regulations. For all new build homes built without public funding, the Sustainability and Climate Change Supplementary Planning Document (SPD adopted in February 2013) provides detailed guidance to the Newcastle-under-Lyme Borough Council and Stoke-on-Trent Core Spatial Strategy (adopted October 2009).  The objective of the SPD is to take forward the policy within the Core Spatial Strategy, policy CSP3, and deliver measurable improvements to the sustainability of the built environment. The council is currently preparing a Joint Local Plan with Newcastle-under-Lyme Borough Council, which once adopted will replace the Core Spatial Strategy and Saved Local Plan policies.  The Joint Local Plan will set out strategic priorities for the area, identifying land for development and planning policies.

A Sustainability Appraisal scoping report has been produced as part of the new Local Plan. The report reviews and builds on the previous objectives used to assess the Core Spatial Strategy, taking into account the latest baseline data.  The report was subject to consultation with statutory consultees (Natural England, Historic England, Environment Agency, Staffordshire County Council and neighbouring authorities) between the 5th August 2015 and 9th September 2015.  The Council are currently in the process of updating the scoping report to reflect comments and this will be used to assess the Joint Local Plan.

An objective to contribute to carbon reduction, including increasing the use of renewable energy and energy efficiency in existing new development and re-development has been included in the Sustainability Appraisal report.  This has been reflected in the action plan for delivery of this fuel poverty strategy.

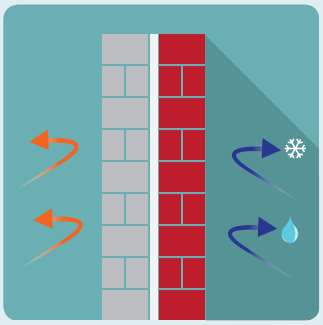
There are many ways to insulate a property to make it warmer and cheaper to heat. These measures are described below. Further information about each of the measures can be found on the Energy Saving Trust Website.

# Improving Fabric - Practical Solutions

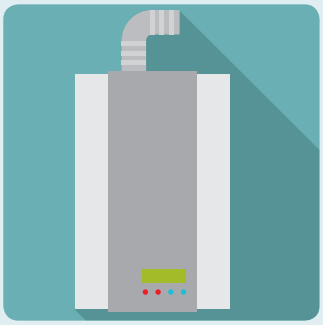


**Solid Wall Insulation** - If your home was built before 1930, it's likely that it has solid walls, rather than cavity walls. If your home has solid walls, you could be losing up to 45% of your heat through your walls. By insulating them with solid wall insulation, you'll not only have a warmer home, but you could significantly reduce your heating bills too. The savings you could make on your energy bill are dependent on the size of your home, number of occupants and how much heating you use, as well as the efficiency of your heating system and the type of fuel you use. The full cost of having solid wall insulation installed is generally around £5,000 - £13,000 depending on the size of your property, the type of insulation and the finish you choose.

**Loft Insulation** - Loft insulation is a simple, cost-effective way of improving the energy efficiency of your home. Loft insulation is effective for up to 40 years, so you can take advantage of both immediate cost-savings and significant long-term financial benefits. The most common material used for loft insulation is mineral wool, which should be 270mm deep. However, different materials may be used, depending on the conditions in your loft – these may have different depths.



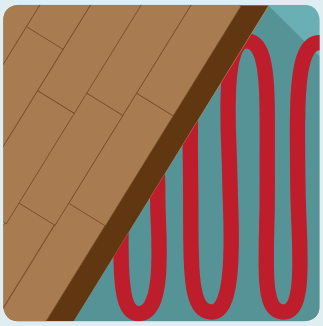
**Cavity Wall Insulation** - If your home was built after 1920 it is likely that you have cavity walls. This means the outside walls are made up of two layers with a gap or cavity in between. By filling the cavity with insulation you'll stop a third of the heat from your home escaping. So, not only will you have a cosier home, but you could spend less on heating it too.



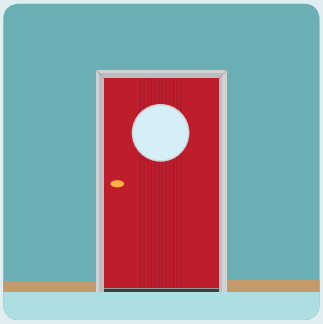
**Energy Efficient Gas Boilers** - With boilers accounting for around 55 per cent of what you spend in a year on energy bills, switching to a more efficient boiler can make a big difference. If you have mains gas, then a gas boiler is usually the cheapest heating system for you. Most old gas and oil boilers are back boilers - they have a separate hot water cylinder to store hot water, rather a newer combi, which provides it directly from the boiler. When you replace your boiler you have a choice of buying a new back boiler, and keeping your hot water cylinder, or buying a new combi that doesn't need a cylinder. But, either way, they'll both be more efficient and reduce your energy bill.

[16] 2014 Housing Standards Review, Homes & Communities Agency

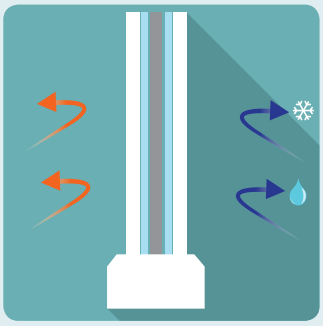
# Improving Fabric - Practical Solutions



**Under floor Insulation** - Insulating under the floorboards on the ground floor will save you about £45 - £55 a year, and you can seal the gaps between floors and skirting boards to reduce draughts too. Gaps and draughts around skirting boards and floors are simple to fix yourself with a tube of sealant bought from any DIY store. Floorboards will rot without adequate ventilation so don't block under-floor airbricks in your outside walls. Older homes are more likely to have suspended timber floors. Timber floors can be insulated by lifting the floorboards and laying mineral wool insulation supported by netting between the joists. Many homes – especially newer ones – will have a ground floor made of solid concrete. This can be insulated when it needs to be replaced, or can have rigid insulation laid on top.



**Draught Proofing** -Draught-proofing is one of the cheapest and most efficient ways to save energy – and money – in any type of building. Both draughts and ventilation let fresh air into your home, but good ventilation helps reduce condensation and damp. Draughts are uncontrolled: they let in too much cold air and waste too much heat. To draught-proof your home you should block up unwanted gaps that let cold air in and warm air out.



**Insulating Windows** - All properties lose heat through their windows. But energy-efficient glazing keeps your home warmer and quieter as well as reducing your energy bills. That might mean double or triple-glazing, secondary glazing, or just heavier curtains.

**Insulating tanks, pipes and radiators** - Insulating your hot water cylinder is one of the easiest ways to save energy and, therefore, money. If you already have a jacket fitted around your tank, check the thickness. It should be at least 75mm thick; if it isn't, consider buying a new one. Fitting a British Standard jacket around your cylinder will cut heat loss by more than 75 per cent and could save you around £25-£35 a year, which is more than the cost of the jacket. By slipping pipe insulation around your exposed hot water pipes you'll keep your hot water hotter for longer. Fitting insulation to pipes is easy if the pipes are accessible; if your pipes are hard to reach, you may need to engage a professional.

## Improving Fabric - Practical Solutions

**Saving Water** - Each household uses on average around 360 litres per day. About 21% of a typical gas heated household's heating bill is from heating the water for showers, baths and hot water from the tap. This is on average about £140 a year. Saving water can reduce your energy use and bills, reduce the impact on your local environment, and reduce carbon dioxide emissions by using less energy to pump heat and treat the water. The Energy Saving Trust lists all of the water-saving products (e.g. water-efficient showerheads, low flow taps) and water-saving habits that can help you save water.

To find out how to save water you can download a Saving Water Guide from Severn Trent Water. Severn Trent Water also supplies free water saving products to all Severn Trent customers. To view the water saving products or download a copy of the guidance go to www.stwater.co.uk/saving-for-the-future.

**Energy Efficient Lighting** - Lighting accounts for 18% of a typical household's electricity bill. Cutting your lighting bill is one of the easiest ways to save energy and money. Houses typically use a mixture of standard light fittings and down lighters or spotlight fittings. Energy efficient bulbs are available for both types of fittings. Changing which bulbs you use and how you use them will instantly save your home energy and money.

(Source: Energy Saving Trust)

### Reducing Cold related ill- Health

Fuel poverty is a known and recognised risk factor for health. It's well-documented that poor housing conditions have strong links with; ill-health (particularly respiratory and circulatory conditions); social isolation; anxiety; depression; an increase in trips and falls; as well as contributing to the excess winter death (EWD) rate. It is estimated that 43,900 EWD's[17] occurred in the winter of 2014-2015. This is an increase of 151% from the 17,460 EWD's in 2013/14 and is the highest number since the recorded high of 48,440 EWD's in 1999/2000. In the city, an average 110 people died from EWD each year over the 2009-2012 periods[18].

For householders, living in a cold damp home that they struggle to afford to heat can be a miserable and stressful experience.

The UK Cold Weather Plan documents the effect cold temperatures have on the health and wellbeing of people in homes – shown on the table overleaf.

[17]ONS – Statistical Bulletin, 'Excess Winter Mortality in England and Wales, 2014/15 (Provisional) and 2013/14 (Final)'; 25 Nov.15. The Office for National Statistics calculates excess winter deaths as the difference between the number of deaths in December – March and the average of deaths in the preceding August –November and the following April – July

[18]Public Health England: Stoke-on-Trent Health Profile, September 2014

**Table 1: The Effect of Temperatures on Health**

| Temperature | Effect |
|---|---|
| 18⁰C (65⁰F) | Heating homes to at least 18⁰C (65⁰F) in winter poses minimal risk to the health of a sedentary person, wearing suitable clothing. Additional flexibility around advice for vulnerable groups and healthy people is outlined in the main Cold Weather Plan document (pg 40) |
| Under 16⁰C | May diminish resistance it respiratory diseases |
| 9 - 12⁰C | May increase blood pressure and risk of cardiovascular disease |
| 5 - 8⁰C | Mean outdoor temperature threshold at which increased risk of death observed at population level (preliminary findings, see section 1,1,2) |
| 90 | Poses a high risk of hypothermia |

The health system has a key role to play in addressing the issue of cold homes and health. Evidence suggests there are significant health benefits to be had from tackling fuel poverty, in terms not only of health outcomes for individuals, but also of health and social care cost savings and wider public benefits. For example, a report[19] prepared by the UK Health Forum identifies:

- Costs to the NHS (primary care and hospital) of treating the illnesses caused and exacerbated by cold homes are in the region of £1.36 billion per year.
- A cost-benefit analysis by Professor Christine Liddell identified that investing £1 in improving affordable warmth delivered a 42 pence saving in health costs for the NHS.
- It has been estimated that reducing hazards in poor housing could deliver £2.5bn of savings a year for the NHS. This is still an under-estimate of the true picture. Minor hazards of the sort that are found in the majority of homes have not been costed, and there will be health and care issues which linger long after the immediate NHS treatments costs. There will be other losses to society of leaving people in poor housing. For example, cold homes negatively affect children's educational attainment, emotional wellbeing and resilience[20]. These are the subject of ongoing research, but earlier estimates suggest that this would add at least two-and-a- half times the first year treatment costs[21].
- Savings beyond those directly related to the NHS are also relevant, particularly to the public health service, such as those arising from improved mental wellbeing, increased mobility within the home, healthier lifestyles and greater social connection.

Reducing the cold related health impacts from fuel poverty requires a cross-sector and multi-disciplinary approach, including strong leadership and action from all levels of the health system. Local authorities – through Directors of Public Health, Health and Wellbeing Boards and Public Health Teams – are well placed to lead effective strategic planning and deliver action on fuel poverty and cold homes[22]. Such groups carry responsibility for many of the areas that impact on health and wellbeing including public health, social care, planning, housing, energy efficiency and welfare.

[19]UK Health Forum, Fuel poverty how to improve health and wellbeing through action on affordable warmth, April 2014
[20]The Marmot Review: The Health Impacts of Cold Homes and Fuel Poverty, May 2011
[21]BRE Report: The cost of poor housing to the NHS; 2014
[22] UK Health Forum, Fuel poverty how to improve health and wellbeing through action on affordable warmth, April 2014

## Reduce Cold Related ill Health - Case Studies

**Warm Homes Healthy People (WHHP) Programme** – the WHHP programme is a Stoke-on-Trent City Council initiative funded annually by Public Health. The current WHHP programme has received funding each year since 2011 and has successfully been delivered by a range of partners across the city who already provide affordable warmth services and have the knowledge and expertise to increase capacity over the winter months. The WHHP programme focuses primarily on advice and information to support vulnerable households to improve the thermal efficiency of their homes and to access financial support for those in fuel poverty.

During the winter of 2015 -16 a total of £100,000 was available. Services were commissioned and provided through seven agencies in the city and assisted approximately 4,760 people in total. Case studies indicate that customers were mainly elderly people on low income, many of whom had physical and mental health issues. Services provided included:

- Information and advice on energy consumption for fuel poor individuals
- Helping vulnerable clients to access Warm Homes Discount funding
- Income maximisation. The programme enabled vulnerable households to access £53,000 of additional income through benefit entitlement previously unclaimed and direct savings on fuel costs
- Support with fuel switching and managing fuel debt
- Providing advice and referrals for Energy Company Obligation funding for repairs, heating replacements and energy efficiency measures
- Providing six advice appointments across two community mental health venues to target support and assist people experiencing mental health problems
- Referrals and signposting to appropriate services.
- Distribution of thermometer cards and cold alarms
- Handyperson visits – carrying out minor repairs including loft insulation and lagging of pipework

**Chartered Institute of Housing (CIH)** - The CIH is advocating joint action on improving health through the home by closer working between health and fuel poverty agendas. The CIH has published a Memorandum of Understanding (MOU) setting out a 'shared commitment to joint action across government, health, social care and housing' and will 'promote the housing sector's contribution to health'. The MOU has five main aims:

- Establish and support national and local dialogue, information exchange and decision-making across government, health, social care and housing
- Co-ordinate health, social care and housing policy
- Enable improved collaboration and integration of healthcare and housing in delivery of homes
- Promote the housing sector contribution to addressing the wider determinants of health
- Develop the workforce across sectors so staff are confident and skilled in understanding the relationship between where people live and their health and wellbeing

**Healthy Homes on Prescription** - is a scheme set up in partnership with 55 GP surgeries and Liverpool City Council. The scheme uses a software alert system to identify patients whose ill-health may be caused or exacerbated by property defects such as damp and mould, inadequate heating, or a lack of insulation. GPs can then refer these patients, with their consent, to the Liverpool City Council Healthy Homes Programme and other partners, so they can get help and/or advice on a range of related issues. Healthy Homes also run clinics at Health Centres across the city. An evaluation carried out by BRE in 2011 of the first year of the programme estimated on-going NHS savings from the broader Liverpool Healthy Homes Programme of £440,000 (£4.4m over 10 years).

This strategy supports the actions and recommendations as described in the Public Health Outcomes Framework 2013 - 2016, Cold Weather Plan and the National Institute of Health and Care Excellence (NICE) Guidance. . All agencies delivering affordable warmth services should give consideration to the actions and recommendations of these plans and guidance documents to help minimise the health impact of winter weather.
Particular attention should be given to the NICE guidance. The aim of the guidance is to:

- Reduce preventable excess winter death rates.
- Improve health and wellbeing among vulnerable groups.
- Reduce pressure on health and social care services.
- Reduce 'fuel poverty' and the risk of fuel debt or being disconnected from gas and electricity supplies
- Improve the energy efficiency of homes.

The guidance is for commissioners, managers and health, social care and voluntary sector practitioners who deal with vulnerable people who may have health problems caused, or exacerbated, by living in a cold home. This guideline makes recommendations on how to reduce the risk of death and ill health associated with living in a cold home.

**Table 2 - NICE Guidance Recommendations**

| Temperature | Effect |
|---|---|
| Recommendation 1 | Develop a strategy |
| Recommendation 2 | Ensure there is a single-point-of-contact health and housing referral service for people living in cold homes |
| Recommendation 3 | Provide tailored solutions via the single- point-of-contact health and housing referral service for people living in cold homes |
| Recommendation 4 | Identify people at risk of ill health from living in a cold home |
| Recommendation 5 | Make every contact count by assessing the heating needs of people who use primary health and home care services |
| Recommendation 6 | Non-health and social care workers who visit people at home should assess their heating needs |
| Recommendation 7 | Discharge vulnerable people from health or social care settings to a warm home |
| Recommendation 8 | Train health and social care practitioners to help people whose homes may be too cold |
| Recommendation 9 | Train housing professionals and faith and voluntary sector workers to help people whose homes may be too cold for their health and wellbeing |
| Recommendation 10 | Train heating engineers, meter installers and those providing building insulation to help vulnerable people at home |
| Recommendation 11 | Raise awareness among practitioners and the public about how to keep warm at home |
| Recommendation 12 | Ensure buildings meet ventilation and other building and trading standards |

All fuel poverty projects that include actions as recommended by the NICE guidance, or other relevant Public Health guidance, should be prioritised when commissioning services that tackle fuel poverty. For further information about NICE guidance, visit the NICE website.

With limited budgets available, local authorities and other agencies would reap the greatest health benefits by focusing on the most cost effective improvements to the poorest housing occupied by the most vulnerable people. Between January 2014 and December 2014 the council's Housing Standards Team identified 231 Category 1 hazards in the Private Rented Sector (87 Damp & Mould hazards and 144 Excess cold hazards). This is a critical service that helps tackle some of the poorest quality housing in the city. Working with partners, including the Landlord Accreditation Scheme, more work is needed to increase the number of properties being brought up to a decent standard.

It is clear that the continued raising of housing standards in both the existing and new housing stock will also accrue health benefits, which the NHS and society as a whole will benefit from. Healthier people not only cost the NHS less money, they are able to contribute more to the workplace and are likely to have higher school attendance and attainment. Furthermore, successful "winter pressures" schemes that target vulnerable people in energy inefficient homes – such as the Warm Homes Healthy People (WHHP) programme – should be recurrently funded for 365 days of the year; enabling third sector agencies plan delivery of their services for the winter period over a longer period of time. An issue for third sector agencies within the WHHP programme is that the funding is subject to abrupt transitions which can be difficult for third sector agencies to respond to within short timescales. The strategy encourages commissioners to build fuel poverty solutions that are permanent and built into existing structures.

## Reducing Cold Related Ill Health - Practical Solutions

For advice on how to protect your health from the cold go to the winter health pages at NHS Choices (www.nhs.uk). If you are worried about your health or that of somebody you know, ring **NHS 111.**

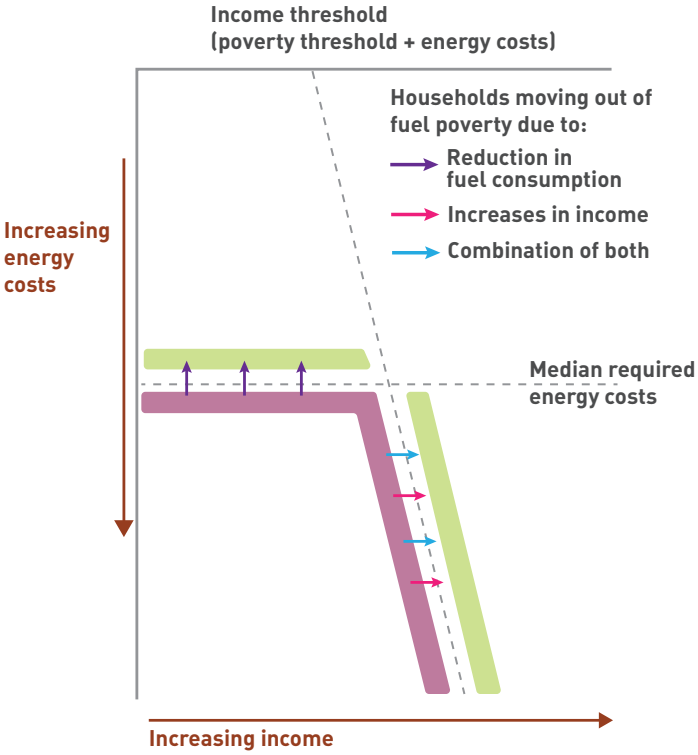
Heating homes to at least 18°C (65F) in winter poses minimal risk to the health of a sedentary person, wearing suitable clothing.

# STRATEGIC OBJECTIVE 3: MAXIMISE HOUSEHOLD INCOME AND REDUCE HOUSEHOLD COSTS WHERE POSSIBLE

- **Activities published in the National Energy Action Fuel Poverty Action Guide should be promoted to residents in the city through existing affordable warmth services.**
- **Third sector agencies are well placed to help maximise household incomes but without additional funding, have limited capacity.**
- **Over a six month period, 126 customers approached the Staffordshire North and Stoke-on-Trent Citizens Advice Bureau for help with managing fuel debt. The average amount of fuel debt owed by customers in the city was £1,124.**
- **At the end of 2011, around 15% of all electricity customers and 13% of all gas customers paid through a Pre-Payment Meter (PPM). Typically, it is around 7.5% more expensive for households using PPM's.**

Many low income households occupy energy inefficient properties that are located in some of the most deprived communities in the city. Whilst improving the energy efficiency of the property is the most cost effective, sustainable and long term solution to the problem, reducing household expenditure and maximising incomes can lift households out of fuel poverty and reduce the risk of them falling into fuel poverty, as illustrated by the chart below.

**Chart 2 - Movement across the Income and Fuel Costs Threshold**




(Source: Annual Fuel Poverty Statistics Report, 2012, DECC)

The risk of households falling into fuel poverty is high due to the city's low household earnings when compared to the UK average.

This risk is further compounded by the following factors:

- energy price increases are likely to increase faster than household incomes which are already amongst the lowest in the UK (see appendix 1)
- The investment required to upgrade distribution networks and meet climate change targets will probably result in an increase in the average household bill.

The cost of energy policies will increase going forward in order to support increasing low carbon investment, the Committee on Climate Change estimate that support for low-carbon technologies will increase annual energy bills by around £175 by 2030 for an average 'dual fuel' household. The impact of energy efficiency policies should help people to save energy, or use it more efficiently, and it is expected to more than offset the impact of the cost of policies to deliver low carbon investment. For example, DECC estimate that households will be using around 14% less gas and 29% less electricity by 2020 than they would have been in the absence of policies. The impact of this on bills suggests that household bills will be an estimated £92, or 7%, lower than otherwise.

Many households are able to access web based information and advice independently and implement practical solutions that will help maximise household income. However, older and vulnerable households living at risk of fuel poverty do not have the capability or capacity to access these services.
These households may need additional support but are not always visible to service providers in their locality and can be described as 'hard to reach'. To ensure the risk of fuel poverty for 'hard to reach' households is mitigated service providers may need support identifying and accessing households to deliver face to face information and advice in their home. Advice and support may include help filling out forms, contacting energy suppliers or changing fuel bill tariffs.

National Energy Action (NEA) published a Fuel Poverty Action Guide in December 2014, which describes practical action to alleviate fuel poverty, to benefit the health and well-being of householders and to increase their disposable income. This strategy supports this guidance and recommends that all affordable warmth service providers promote the following actions as part of their service provision:

## Maximising Household Income - Practical Solutions

Households can take the following action to help reduce fuel costs and maximise income:


**Switching Suppliers** - By shopping around and taking advantage of the best energy deals on the market, millions of people can save around £400 - and some can save even more. The 'Power to Switch' campaign, launched by the Department of Energy and Climate Change on 15 February 2015, encourages people to switch supplier and save money by visiting www.BeAnEnergyShopper.com. With 26 energy companies on the market and some fixed deals £100 cheaper than they were a year ago, there's never been a better time to find a great deal, switch and save.

**Welfare Benefit Checks** - It's important to make sure that you get all the help that you're entitled to. Local agencies can provide welfare benefit checks or if you visit www.gov.uk you can find information on benefits and tax credits if you are working or unemployed, sick or disabled, a parent, a young person, an older person or a veteran. There is also information about council tax and housing costs, national insurance, payment of benefits and problems with benefits.

## Maximising Household Income - Practical Solutions

Some householders may be eligible for the following support:


**Cold Weather payments** - You may get a Cold Weather Payment if you're getting certain benefits. Payments are made when your local temperature is either recorded as, or forecast to be, an average of zero degrees Celsius or below over 7 consecutive days. You'll get a payment of £25 for each 7 day period of very cold weather between 1 November and 31 March.

**Winter Fuel Payments** - You could get between £100 and £300 tax-free to help pay your heating bills if you were born on or before 5 July 1953[24]. This is known as a 'Winter Fuel Payment'. Most payments are made automatically between November and December. You should get your money by Christmas. You usually get a Winter Fuel Payment automatically if you get the State Pension or another social security benefit (not Housing Benefit, Council Tax Reduction, Child Benefit or Universal Credit). Any money you get won't affect your other benefits.

**Warm Homes Discount Scheme** - For the 2016 to 2017 winter period, you could get a £140 discount on your electricity bill through the Warm Home Discount Scheme. You qualify for the discount if on 12 July 2014 all of the following apply; your supplier was part of the scheme; your name (or your partner's) was on the bill; and you were getting the Guarantee Credit element of Pension Credit (even if you get Savings Credit as well). If you don't qualify some suppliers can offer the discount to vulnerable people, e.g. those on a low income. Each supplier has their own rules about who else (known as the 'broader group') can get this help. Check with your supplier if you meet their rules for broader group help and how to apply for it.

**For further information on any of the above actions, you can either contact your local advice agency or go to www.gov.uk.**

Prices for fuel vary according to the tariff and method of payment, and discounts are offered to households that pay for their fuel using direct debit. At the end of 2011, around 15% of electricity customers and 13% of gas customers paid through a Pre-Payment Meter (PPM). Whilst PPM customers have historically paid higher prices than customers paying by direct debit, the differentials have narrowed in recent years. Typically, it is around 7.5% more expensive for households using PPM's. However, this does not take into account the requirement for deposits which are held on the account. Whilst the strategy supports actions that reduce the number of residents using PPM's, it acknowledges there will be cases where aside from managing debt, some household's may prefer using PPM's as they allow the householder's to manage their budgets closely[25].

[24]https://www.gov.uk/winter-fuel-payment/overview
[25]DECC, Fuel Poverty Monitoring Indicators, May 2013

Ofgem published its findings into a review of prepayment meters in June 2015[26]. This review was prompted by concerns that prepayment customers can face particular barriers when trying to access competitively priced deals; notably fewer tariff choices, charges for installing and removing a prepayment meter, and upfront security deposits. To better understand the issues in this area, and to ensure that costs do not fall disproportionately on those least able to afford them, in February 2015 Ofgem issued an information request on prepayment to all domestic gas and electricity suppliers. This report is based on information provided by the suppliers who offer prepayment tariffs plus their own market analysis. The report outlines the key findings and proposed next steps of their review. Ofgem recommend a number of actions including the need for more competitively priced tariff options available for prepayment customers.

Switching suppliers and fuel tariffs, or participation in community energy switch schemes, can be a simple way of lessening the impact of rising fuel prices on household expenditure. The Committee on Climate Change estimate that households that switch gas and electricity suppliers can save on average c.10%[27]. The Citizen's Advice Bureau suggests this figure could be higher, with PPM customers paying on average 22 % more than customers with direct debit deals[28]. However, many switches result from supplier pressure rather than well-informed consumer choice, which mean that when switching, households may not necessarily be choosing the lowest available tariff. In addition, any savings initially gained have often been lost due to subsequent fuel price rises from the new supplier.

There is evidence that fuel debt[29] is an issue for many households in the city. Nationally, at the end of 2010, 3.2% of electricity customers and 3.2% of gas customers were in debt. While the overall numbers repaying a debt has decreased, there are signs that the recession and high energy bills are continuing to have an impact on customers struggling to pay. The average debt owed by electricity customers at the end of 2010 was £316, and the average owed by gas customers was £310. This is an increase of 13% and 8%, respectively, on the same quarter in 2009. Information collected by the Staffordshire North and Stoke-on-Trent Citizens Advice Bureau over a 6 month period (October 2014 to December 2015) shows that 350 people approached their service seeking help with their fuel debt. In the city, 126 people had fuel debt totalling £141,666. The average amount of debt per household was a reported £1,124. This is significantly higher than the reported national average and is affecting all age groups (from 15-19 years old to 85-89 years old) but it is customers aged between 25-29 and 30-34 years of age represent the largest age group of people accessing advice services with fuel debt. There is a clear need to better understand the extent and depth of fuel debt in the city and what resources are required to enhance provision of services that prevent households falling into fuel debt.

Furthermore, Stoke-on-Trent possesses an unusual configuration of social and economic features that could be adversely affected by the proposed reforms to the welfare system. Welfare reforms risk cutting household incomes and pushing households into fuel poverty. The impact of welfare benefit changes for people living in Stoke-on-Trent is discussed in a report prepared by Staffordshire North and Stoke-on-Trent Citizen's Advice Bureau and Brighter Futures Housing Association published in 2011.

In recognition of the impact of poverty in the city a Hardship Commission was formed in 2014. A report was produced in 2015 and many local organisations have pledged to work to support the work of the commission and deliver the recommendations. The commission included work with a cross section of organisations and services that have an involvement with, or influence on, poverty related hardship.

Addressing poverty related hardship is the basis for strengthening the well-being and economy of the city. Maximising income and minimising costs is identified as a key recommendation by the Commission. Co-operative Working are key to ensure that bespoke support is delivered to the most vulnerable households in the city. Co-operative Working staff have received financial capability training to enable them to provide welfare benefits advice for customers with low level needs coming into contact with the service. In the long term, this is expected to help reduce demand for third sector agencies providing benefits advice for customers with low level needs but these agencies will still require support if they are to continue to deliver welfare benefits advice to customers with complex needs.

[26]Ofgem, Prepayment review: understanding supplier charging practices and barriers to switching, 23 June 2015
[27]Committee on Climate Change, Energy Prices and Bills – impacts on meeting climate budgets, Dec 2014
[28]http://bit.ly/1J2dY7V
[29]'Debt' refers either to customers who have a Pre-Payment Meter (PPM) set to collect a debt or customers who are on a rescheduled debt repayment programme due to last longer than 91 days/13 weeks. Direct debit customers would only fall within this definition if they have specifically set up a direct debit in order to repay a debt. See Ofgem review of suppliers' approaches to debt management and prevention: http://bit.ly/2chSKQj

A report shared by the Financial Inclusion Group (FIG) and published by Money Matters[30] summarises the key findings from research they conducted to understand more about the needs, behaviour and attitudes of people in debt in order to understand how best they can be served. Providing high quality debt advice can increase an individual's wellbeing, can improve collection rates for creditors and can boost the health of communities. The document has been used as the basis of the FIG action plan. The action plan is the work plan for the partners in the FIG during 2014 -2016.

This strategy supports both the recommendations of the Hardship Commission and the work of the Financial Inclusion Group to provide preventative services including the provision of high quality debt advice in the city for residents in or at risk of fuel poverty. In addition, the council will continue working with partners to identify tenants and residents who could be impacted by welfare reform and minimise potential adverse impacts.

## £ Maximising Household Income – Case Studies

**Potteries Money Wise** – Stoke on Trent CAB has been successful in obtaining funding from The Big Lottery to deliver Financial Capability Training for social housing tenants and front line staff under the scheme named Potteries Money Wise. Potteries Money Wise financial inclusion training is a package of information and skills designed to help people manage their money better. The sessions are interactive and participative and can be delivered as a 1:1 session or in a group environment. The session will cover; budgeting/ money management; credit; priority and non-priority debt; confidence, attitudes and motivation; banking; financial products; help and advice on Universal Credit and the impact of Welfare Reform changes.

**Age UK North Staffordshire** – Age UK North Staffordshire provides face-to-face and telephone information and advice services for clients aged 50 or over, their family's and carers. For elderly or frail clients the service can offer home visit appointments where staff can carry out benefit checks and if required, make claims for disability benefits (for example Attendance Allowance). Some funding sources enable the charity to provide specific fuel poverty and winter related support services. For example, staff visiting clients over the winter period will talk to them about their concerns and problems, hand them a 'Winter Wrapped Up' booklet and give home safety information. One current funder is an energy provider, enabling staff to inform clients about Warm Home Discount from that energy provider and, when applicable, assist them in applying for the discount. Over the last few winter months (in 2014/ 2015) Age UK North Staffordshire has supported over 150 local people in maximising their income to reduce the rate and risk of fuel poverty.

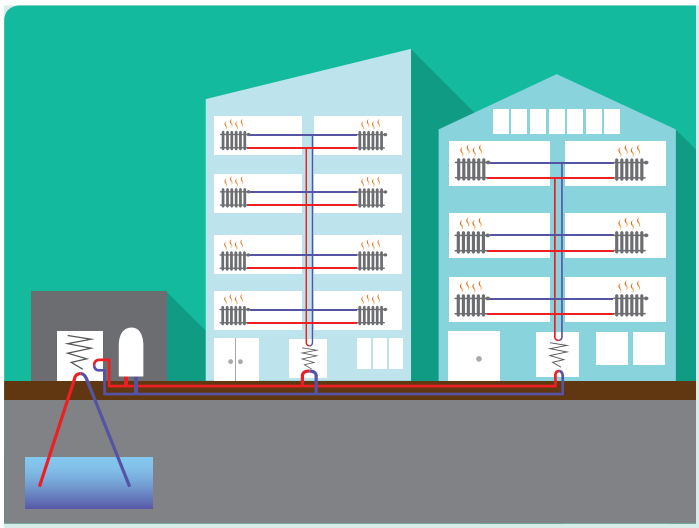
**Be An Energy Shopper** – The energy regulator, Ofgem, has recently brought in a number of reforms to the energy market to help energy shoppers get a better deal. It has set up a website where you can find out all about these changes. The website explains:

- personalised bills which show an estimate of your annual energy cost for the next 12 months
- The new Tariff Comparison Rate (TCR) which compares tariffs from different suppliers.

The site also takes you through everything you need to know to take control of your energy bills and help you check your existing energy deal and work out if you could benefit from a change. For more advice on the recent changes to the market and to assess your current deal to see if there are better alternatives, visit the Ofgem website at BeAnEnergyShopper.

[30]The Money Advice Service, Indebted lives: the complexities of life in debt, November 2013

# STRATEGIC OBJECTIVE 4: INCREASE THE AMOUNT OF ENERGY GENERATED FROM RENEWABLE AND LOW CARBON SOURCES TO PROVIDE SECURE, PRICE PREDICTABLE ENERGY



- The Climate Change Act 2008 requires a major shift away from fossil fuel heating systems to lower carbon forms of heating. By 2050, the UK has to reduce $CO_2$ emissions by 80% from a baseline of 1990[31]. This is reinforced by the Paris Agreement in December 2015 which established a global objective to achieve a global temperature rise of no more +2°C compared with the pre-industrial era (circa 1850).

- The UK electricity generation uses 13% of primary energy. In 2015, the primary energies used for electricity generation comprised: 29.5% gas, 22.6% coal, 20.8% nuclear, 24.7% from renewables, and a balance of 2.4% from other sources[32].

- The Department of Energy and Climate Change (DECC) published a community energy strategy in 2014 highlighting the need and potentials for communities to participate in the production of energy with the support of Local Authorities[33].

- 48% of primary energy used in the UK for heating accounting for 38% of all UK $CO_2$ emissions[34].

- The energy consumption of the domestic sector comprises 85% for space heating, domestic heat water and cooking with the 15% balance for lighting and electrical appliances.

- UK has the most extensive gas grid in Europe, covering nearly 80% of houses, and around 1.6 million gas boilers are installed and replaced in homes each year.

- DECC Heat Network Delivery Unit (HNDU) states that Local authorities have a pivotal role in enabling the development, deployment, operation and expansion of district heat networks, with estimates showing that approximately 14% of UK heat demand could be met by heat networks by 2030 and around 43% by 2050[35].

- New developments are required to follow the Council's Sustainability and Climate Change Supplementary Planning Document[36], which recommends that where there is an existing decentralised energy supply network in place or there are firm proposals to deliver such system, connection should be considered.

[31]Climate Change Act 2008
[32]DECC UK Energy Statistics, 2015 & Q4 2015, 31 March 2016
[33]DECC Community Energy Strategy: People Powering Change, 2014
[34]Department of Energy and Climate Change Statistics - Heat Network Delivery Unit 2014
[35]HNDU Round 6: Overview, April 2016
[36]Sustainability and Climate Change Supplementary Planning Document, Stoke-on-Trent City Council 2012

Although the UK is progressing towards its 2020 renewable energy target; to deliver 15% of UK energy demand from renewable sources[37], significant change and adoption of alternative system are required to achieve the long term 2050 targets.

In the United Kingdom, more primary energy is used in heating than either road transport or industry and accounts for almost a half of primary energy use and nearly 40% of all carbon dioxide emissions. Therefore, increased energy generation and in particular heat from renewable and low carbon sources represents a major opportunity to cut fossil fuel energy use, provide affordable heat (address fuel poverty) and CO2 emissions in the housing stock. To accelerate the installation of renewable energy technologies the UK government launched the Feed in Tariff (FiT) in 2010 and Renewable Heat Incentive (RHI) programme in 2013. Both RHI and FiT pay the generator a premium for the amount of electricity or heat generated from renewable sources.

Under the FiT, Stoke-on-Trent City Council installed 694 Solar Photovoltaic (PV) systems onto Council housing – accounting for nearly 10% of the opportunity identified, i.e. 694 properties out of a possible 7,600 identified in 2014 from the 18,500 properties the Council own and manage in the city. In stark contrast to renewable electricity generation, renewable heat technologies have not been installed in any Stoke-on-Trent Council houses so far. This is a consistent picture across the UK, with most social housing providers highlighting significant barriers to the adoption of renewable heat technologies for single dwelling. This reflects the fact that there is limited understanding of the technologies against the 'business as usual' model which leaves consumers with the de facto gas solution. The consumer therefore remains opened to price volatility of fossil fuel as well as the carbon taxation. However, the Council has installed Biomass heating in public buildings such as CoRE, Chatterley Whitfield and St. James House enterprise centres.

As consistently found across UK cities, the majority of the buildings in Stoke-on-Trent including social housing, i.e. 90%+ are connected to the gas network and use gas boilers. This contrasts with more energy efficient parts of Europe using District Heat Networks (DHN), e.g. in Scandinavia DHN has been almost completely decarbonised and provides secure, local price predictable heat removing large numbers of consumers from the risk of fuel poverty. Stoke-on-Tent City Council is developing a low carbon city-wide DHN with a first phase to be delivered by 2019.

Stoke-on-Trent City Council has completed and is working on many renewable energy projects, acting therefore as a market leader; instilling confidence into the market place where the Council housing stock, Council public buildings and Council land can act as drivers for local adoption. However, the Council requires a corporate Energy Strategy focusing on the delivery of decarbonised energy solutions. An associated action plan will identify the key technologies, programmes and investment required. Furthermore, the strategy needs to take into account the potential of generating an income from these investments.

79% of the energy[38] used in homes is for space heating and domestic hot water. If the UK is to meet its share of reduction targets of the Climate Change Act 2008, it will require a major shift away from fossil fuel heating systems to lower carbon forms of heating. In 2012, heating networks were estimated to provide less than 2% of total heat in the UK compared to almost 64% of all properties in Denmark for example. The UK Government believes that heat networks have an increasingly key role to play in the UK energy system and this decade will be crucial in removing the barriers and beginning deployment with a target of 20% adoption by 2030. Further information on the government's strategy for delivery of heat networks in the UK and how they will be incentivised can be found in 'The Future of Heating: Meeting the challenge' strategy available online[39].

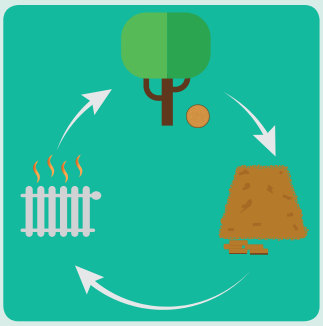
Existing heat networks in the UK and across Europe provide evidence that local authorities have a pivotal role in enabling the development, deployment, operation and expansion of DHN. Local Authorities' vision and engagement is vital, both in offering anchor loads through their own estate to provide sufficient impetus, but also in providing co-ordination between all the stakeholders involved in DHN schemes, i.e. production, distribution, supply and end customers. The role of local authorities is therefore strategic in supporting an integrated city-wide approach, but also in enabling and participating in specific components.

The City Council has produced a series of heat maps that identify opportunities where energy can be supplied from decentralised, renewables, or low carbon energy supply systems and for co-locating potential heat customers and suppliers. This can be used to define community energy opportunities, the availability of suitable sources of heat demand and help bring together the owners of local heat

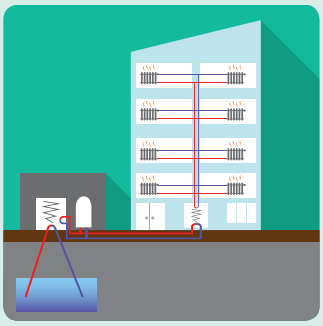
[37]The UK Renewable Energy Strategy, July 2009
[38]Department of Energy and Climate Change – Statistics 2013
[39]https://www.gov.uk/government/policies/increasing-the-use-of-low-carbon-technologies/supporting-pages/heat-networks

# Energy From Renewables And Low Carbon Sources - Case Studies

**Solar Photovoltaic (PV) Scheme** – Solar PV systems convert sunlight into electricity. The electricity generated can be consumed directly by householders, e.g. by using electrical appliances during daylight hours. Any electricity not consumed by the household is exported back to the grid. The use of PV on domestic properties is estimated to save the consumer around £100 per property per year on their electricity bill. As of March 2014, Ofgem reports[40] that Stoke-on-Trent has had 1,868 installations of Solar PV systems and 28 registered installations in the non-domestic sector. This is above the average number of PV system installations compared to the West Midlands region which averages 1,217 installs per local authority area. However, this is lower when compared to the south and south west regions of the UK. The installation of 694 PV systems onto council housing stock accounts for c. 37% of all PV installations in the city. The systems are generating c.1 GWh (1,000,000 kWh) each year and are estimated to save 571 tonnes of $CO_2$ each year[41]. The financial performance of PV panels can be affected by a number of elements including; poor weather; void properties with no electricity supply; maintenance works at the property and supply isolation; occupant behaviour e.g. switching off systems/ no credit on prepayment electricity meters; or faulty equipment.



**Closed Loop Wood Biomass** – Stoke-on-Trent is one of the greenest cities in the UK with over 1380 hectares of parks and open spaces. The maintenance of the Council's green spaces generates an average of just under 700 tonnes of arboricultural waste per year. Through a transnational EU funded project termed ARBOR, Stoke-on-Trent City Council developed a closed loop biomass, utilising its own wood waste resources to create wood fuel. To complete the closed loop, the Council installed a 130kW woodchip boiler with its associated fuel store at the St James House Enterprise Centre in Longton. This included a complete replacement of the electric storage heating system with an efficient wet heating system. This cradle to grave project has provided a sustainable example to turn waste into resources. The Enterprise Centre has reduced its heating cost by £3,000 per year as well as reducing its $CO_2$ emissions by more than 100 tonnes per year.



**District Heat Network (DHN)** – A District Heat Network is a system of underground pipes that will deliver heat via hot water between an energy centre and the buildings connected to the network. The heat network consists of two parallel insulated pipes, one carrying hot water to buildings and the other returning the cooler water back to the energy centre. Stoke-on-Trent City Council with the Local Enterprise Partnership bid to the City Deal Wave 2 seeking financial support for the following areas; Energy; Sites; Skills; and Innovation. The core proposal of the energy component was for the delivery of a Deep Geothermal powered DHN. A business case was developed and submitted to central government which secured £19.75m capital funding. A further £0.6m revenue support was provided to develop the business case and support the exploration work required to establish the feasibility of deep geothermal energy in the city by 2019.

[40]Central FIT Register, March 2014
[41]Calculated by applying 0.568kg of CO2 saving for every 1 kWh

demands, energy suppliers and infrastructure providers and communities to develop the potential for low and zero carbon heat infrastructure in their areas. For example, the Council are working with the British Ceramic Confederation and Dudson Ceramics to identify potential uses of waste industrial heat for supply into heat networks or directly to consumers. Further work however is required to incorporate energy planning in line with emerging planning policies that maximises opportunities for new development sites to develop or connect to renewable or low carbon energy networks. Any evidence that supports the viability of new build housing developments connecting to an existing or planned district heat network should be fed into the Local Plan. This could be informed by a review of other local authorities that include DHN in their planning policies, as for example, London Royal Boroughs supported by the London Plan where new developments must connect to a DHN unless they are able to prove that the alternative solution exceeds the benefits possible from the DHN connection.

At a specific project level, local authorities have an important role, combined with private sector participation and investment. The city council's district heating proposals are a flagship scheme for the UK in providing a low carbon scheme at scale. Local authorities can provide a broker role and help secure local sources of heat demand for a project and in particular provide the ability to offer long term certainty for developments. They can also provide planning support and guidance for projects and in their capacity as highways authorities, facilitate access to install necessary infrastructure and assist in the coordination with other utilities.

Housing, in particular high density housing such as high and low rise flat clusters, can provide heat loads suitable for a connection to DHN or the delivery of stand-alone networks that are able to connect to larger networks in the future. In 2016, the Council commissioned the design and specification of a communal heating system that provides space and hot water heating to three high rise tower blocks funded by DECC. The results of this study will be used to prove technical and financial viability of such schemes and assist with the identification and mitigation of risks preventing the roll out of more communal heating schemes in the city and across the UK. A key objective of this specification is to ensure compatibility with a connection to a city wide district heat network.

The district heat network will be fully metered with intelligent controls systems ensuring an efficient, affordable scheme for consumers with full transparency around costs. In the longer term, this capacity may be developed in-house or through a long term strategic partnership with a provider to incorporate additional functionality in support of vulnerable groups. It is also critical that any meter and billing system put into place for other energy supply services includes fuel poverty safeguards that protects tenants from any sharp increase in fossil fuel or renewable energy price rises.

When considering the deployment of small and large scale heat networks more widely across the city, the Community Energy Strategy 2014 places a clear emphasis on increasing the role of community groups in the distribution, production and saving of energy. This can be in the form of collaborative working with public, private and community partners or the establishment of a specific body or network that has defined roles, responsibilities and functions. DECC also encourage local authorities to back community energy projects in their areas. In November 2014, DECC launched the Urban Community Energy Fund – a £10 million programme designed to support the development of community energy projects through their development phase, to determine viability, and get them 'investment ready'. An investment-ready project is one which has completed all the work necessary to be ready for the construction phase. For example, a project concept is in development in the city for the management of woodland resources in communities by a community interest company to supply an energy centre utilising biomass. This could supply heat and power directly to communities creating social as well as economic outcomes for the areas involved. Currently, up to £20,000 grants and up to £130,000 loans are available to support development. All partners should consider what opportunities exist for renewable energy generation and how communities could take more control of the energy they use – both to cut their gas and electricity bills and to help combat climate change.

## Energy generated from renewable and low carbon sources - Practical Solutions

**Energy Policy** – To ensure that the city is achieving its share of renewable energy generation, the city council requires a corporate energy strategy ensuring that all stakeholders should look at ways to increase the role of community groups in the distribution, production and saving of energy.

**Install domestic renewable heat and renewable electricity technologies** – Instead of buying all of your energy from suppliers, you can install renewable heat (biomass boilers, air source heat pumps, ground source heat pumps, solar water heating, thermal stores) and renewable electricity (solar photovoltaic panels, wind turbines, hydro, micro-Combined Heat and Power) technologies (also called micro generation and low-carbon technology) to generate your own. The Energy Saving Trust has lots of useful information about each technology and what a household should consider before buying these technologies.

**Communal Heating** – Communal heating means the distribution of thermal energy in the form of hot water, or chilled liquids from a central source in a building which is occupied by more than one final customer, for the use of space or process heating, cooling or hot water. All communal heating systems serve only one building. The minimum size for a communal heating network is two final customers.

**District Heating** – District heat network means the distribution of thermal energy in the form of hot water or chilled liquids from a central source of production through a network to multiple buildings or sites for the use of space or process heating, cooling or hot water. The minimum size for a district heat network is two buildings and one final customer. In the scenario where a Heat producer is using the heat to heat their own premises and is also supplying heat to a second party in another building then this is a district heat network.

**National Heat Mapping** – The National Heat Map is an interactive tool that provides local authorities, communities, private sector developers and heat suppliers with a reliable source of high level information about where heat networks may be technically possible. It is a map covering the whole of England that allows planners to zoom down to the level of individual buildings and view their potential heat demand, and shows the demand of wider areas with the same level of accuracy. This will underpin feasibility studies by enhancing precision whilst reducing costs in defining potential systems. As this document highlights, we are likely to see heat networks playing a greater role in the supply of heat in the UK in the coming decade.

# DELIVERY OF THE STRATEGY

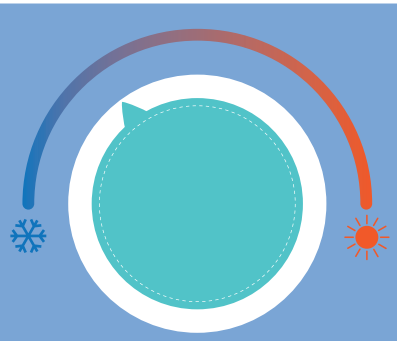
Delivery of the strategy will be monitored by a Fuel Poverty Technical Group which includes officers from commercial, public and third sector partners. Members of the group are responsible for assisting with the development, delivery and monitoring of progress against the strategy and its action plan. This is achieved in the context of driving continuous improvement overseeing, challenging, advising and supporting delivery of the key actions and tasks within the strategy.

To ensure progress is made toward the city's strategic aim and its fuel poverty target, a list of suitably agreed fuel poverty indicators (see appendix two) will help measure and monitor the rate and risk of fuel poverty. For example, to measure an increase in renewable energy generation over the next four years will require an understanding of how much renewable energy is currently generated now (in April 2016) and 2020. Where the local authority may not have access to all of the information it needs to measure progress against all indicators, the local authority will work with the relevant partners such as Ofgem and Department of Energy and Climate Change to make the data available at a local level.

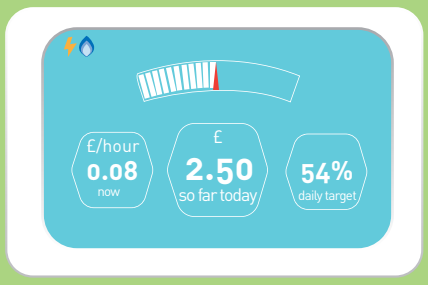
The Fuel Poverty Strategy Action Plan includes key actions that Stoke-on-Trent City council and its partners want to achieve throughout the life of the strategy.

# OUR PRIORITIES

Help residents to minimise expenditure on heating and maximise income

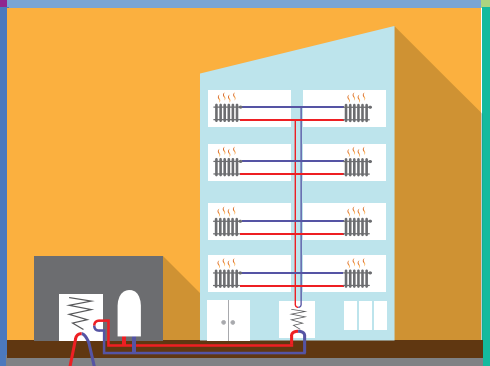


Bring about behavioural change to reduce energy consumption and support residents to manage their energy use more efficiently




Promote work with energy suppliers to ensure all homes receive a smart meter by 2020

Facilitate partnership working to maximise funding opportunities for programmes to provide affordable warmth services to residents in the city

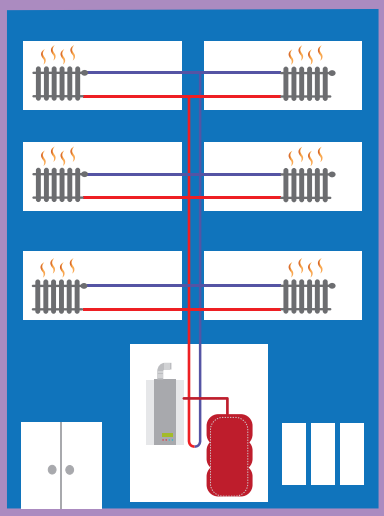


Provide support for the implementation of the city council's district heating network

Increase the amount of electricity generated from low carbon and renewables

Provide fuel poverty training to practitioners to enable front line staff to identify fuel poor households and refer for support


Ensure that energy saving measures installed into the private and social housing stock in the city achieve a minimum EPC rating of E for all fuel poor homes and privately rented properties by 2020.



Explore the viability of community energy switch schemes

# APPENDIX 1 –FUEL POVERTY IN THE CITY

## CONTENTS

## Fuel Poverty

- In 2013, an estimated 9.9% (2.3m) households in England were living in fuel poverty.
- In 2013, an estimated 14.7% (15,847) households in the city were living in fuel poverty (a fall of 1.4% from 2012 levels[1]).
- The rate of fuel poverty is projected to increase from 2.28 million in 2012, to 2.33 million in 2014, with increases in energy costs a key factor.
- Families with children and other working age households make up over 70% of those in fuel poverty[2]
- Privately rented households have had the highest rates of fuel poverty since 2003, whilst owner occupied households have had the lowest rates of fuel poverty over this time.
- The largest change in the proportion of fuel poor households over 2003-2013 was seen in households living under local authority tenure. The fall is likely due to improvements made to energy efficiency in the social housing sector.
- It is difficult to accurately isolate absolute changes to fuel poverty levels but changes to incomes, fuel prices and consumption will impact the extent and depth of fuel poverty.

## Household Incomes[3]

- Households in the city earn more than 20% below the national average – resulting in the city having the 3rd lowest gross household income of any local authority area in Great Britain.
- The following table shows gross household income data for 2014, CACI Ltd.

**Table 1 - Gross Household Income Data**

| Measure | Stoke-on-Trent | Great Britain |
|---|---|---|
| Mean Income (average) | £27,075 | £36,250 |
| MedianIncome (middle) | £20,963 | £28,392 |
| 60% of Median Income | £12,578 | £17,035 |

- 'Families with Children' have, on average, gross incomes some £6,200 less than would be expected if their incomes were in-line with the overall ratio of City to national incomes.
- The number of income-related benefit claimants (Pension Credit, Income Support, and Working Family Tax Credit) is significantly higher than both regional and national averages – and amongst the highest in England.
- In the city, over a six month period 126 people approached Staffordshire North and Stoke-on-Trent Citizens Advice Bureau with fuel debt totalling £141,666. The average amount of debt per household was a reported £1,124. Most clients approaching their

[1] The total number of households in the city decreased between 2011 and 2012 which explains why there is an increase in the percentage of fuel poor households but not an increase in the actual number of fuel poor homes.
[2] DECC, Cutting the cost of keeping warm: a new fuel poverty strategy for England consultation document, 2014
[3] The information on incomes was extracted from the City of Stoke-on-Trent Statistical Summary February 2015

service were in the ages 25-29 and 30-34, although clients were accessing the service as young as 15-19 and old as 85-89.

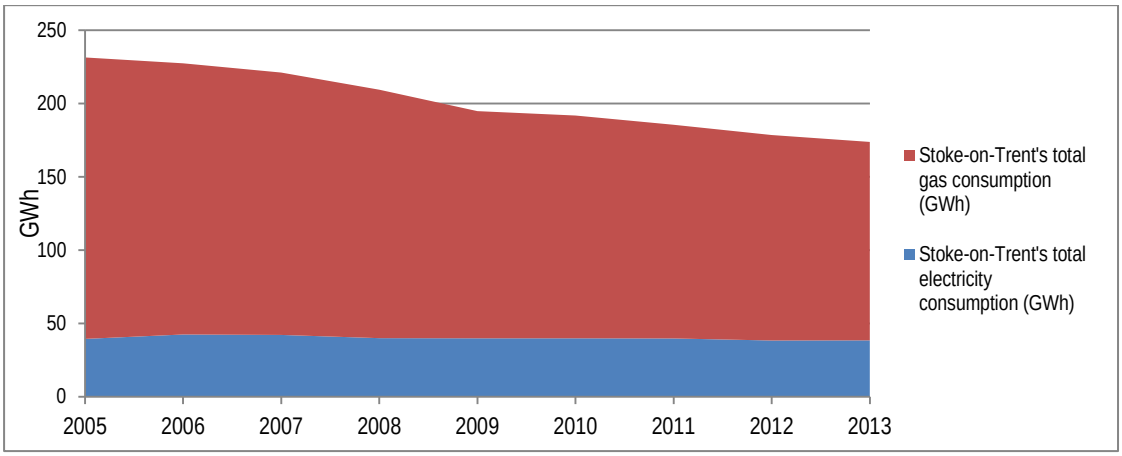
## Energy Efficiency of Building Fabric

- The average SAP (Standard Assessment Procedure) rating of the UK's housing stock is 60. The average SAP rating of the UK's private and social housing stock is 59 and 66 respectively[4].
- The city's average SAP rating of the private housing stock and social housing sector stock is 59 and 69 respectively – in line with national standards.
- Since 2010, c.1,600 properties have had Solid Wall Insulation installed but there is still an estimated 23,500 solid brick properties with no wall insulation in the city.
- The installation of energy efficiency measures may contribute toward higher resale values[5].

## Gas and Electricity Consumption

- In 2013, the total domestic gas consumption in the city was 135.3 GWh (from 135,300 register gas meters). The total electricity consumption in the same year was 38.5 GWh (from 111,900 register electricity meters).

**Chart 1 - Gas and Electricity Consumption in the City**




- Over three quarters of the energy we use in our homes is for space and hot water heating. The average gas consumption per meter was 13,043 kWh compared to 3,554 kWh for electricity.

[4] English housing survey headline report 2013 to 2014
[5] A study, compiled by DECC in 2012, found that dwellings that were rated with an EPC of D were sold for 8% more than dwellings with a G, and ratings of A/B were sold for 14 per cent more than the lowest rated houses.

**Table 2 - Average Gas and Electricity Consumption per Household in the City**

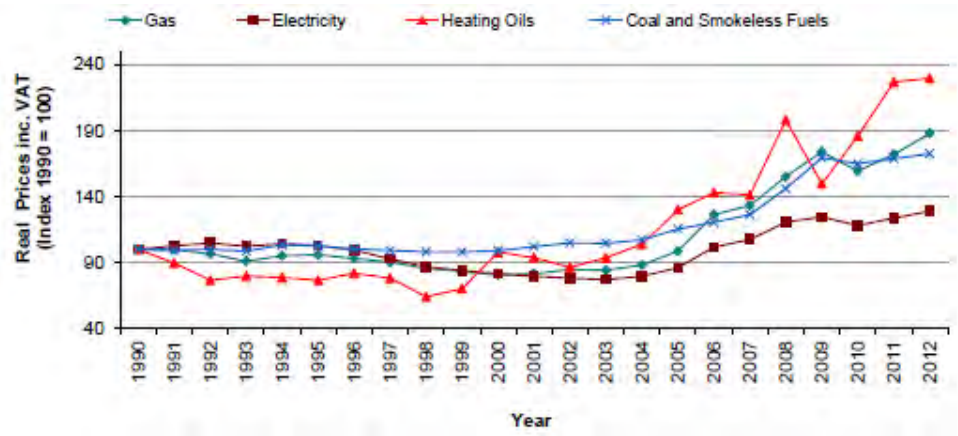
| Year | Total electricity consumption (GWh) | Number of electricity meters (000's) | Average electricity consumption per household (kWh) | Total gas consumption (GWh) | Number of gas meters (000's) | Average consumption per meter kWh |
|---|---|---|---|---|---|---|
| 2005 | 39.5 | 96.79 | 4,088 | 191.9 | 103.36 | 18,558 |
| 2006 | 42.5 | 110.54 | 3,845 | 184.9 | 104.57 | 17,688 |
| 2007 | 42.2 | 111.08 | 3,799 | 178.9 | 105.54 | 19,960 |
| 2008 | 40.0 | 110.11 | 3,639 | 169.4 | 105.30 | 16,097 |
| 2009 | 39.9 | 109.68 | 3,638 | 154.9 | 106.17 | 14,597 |
| 2010 | 39.9 | 110.47 | 3,619 | 151.9 | 106.57 | 14,262 |
| 2011 | 39.8 | 111.01 | 3,588 | 145.7 | 107.22 | 13,595 |
| 2012 | 38.4 | 111.49 | 3,450 | 140.1 | 107.40 | 13,046 |
| 2013 | 38.5 | 111.90 | 3,441 | 135.3 | 107.94 | 12,543 |

(Source: https://www.gov.uk/government/collections/analytical-tools)

## Energy Prices

- Household dual fuel bills are estimated to be, on average, around £1,369 in 2014: £783 for gas and £586 for electricity (2014 prices).
- Precise energy costs vary according to the tariff and method of payment, and discounts are offered to households that pay for their gas using direct debit.

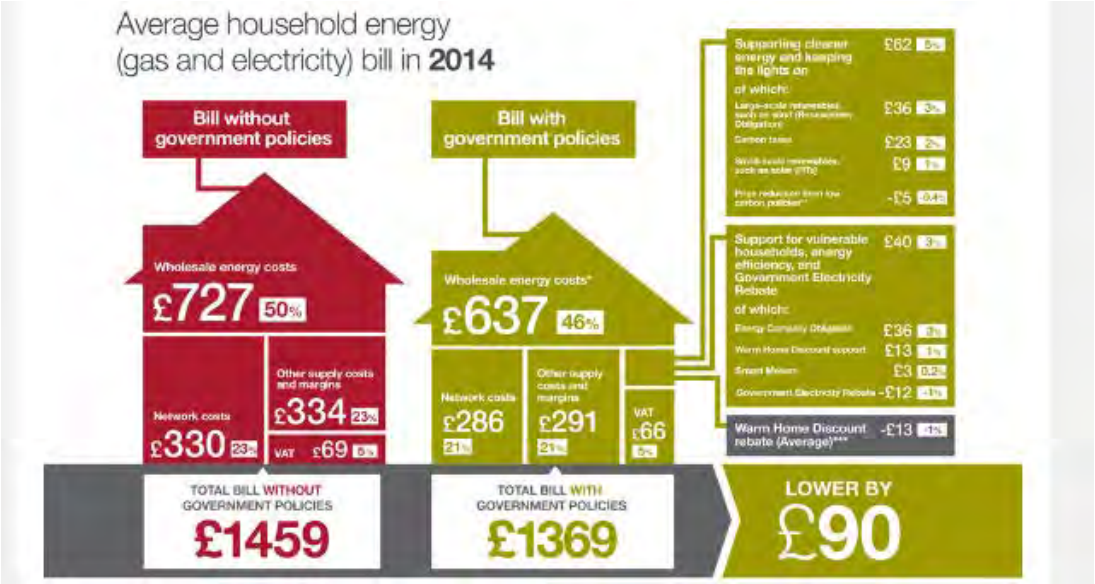
**Chart 2 – Average Domestic Prices in Real Terms**




- Gas and electricity prices are currently amongst the least expensive in Europe. Current DECC data places the UK 28th out of 28 countries (excluding tax) and 25th out of 28 (including tax).
- Accounting for energy efficiency savings delivered through government policies, the average impact of policies is estimated to be a net saving for households of around

6% (£90) in 2014, compared to what bills would have been if these policies had never been introduced[6] - see Chart 4 below.

**Chart 3 – The impact of DECC policies on household energy bills**




(Source: DECC, Policy impacts on prices and bills, Dec 2014)

- Although the cost of policies will increase going forward in order to support increasing low carbon investment – the Committee on Climate Change estimates that support for low-carbon technologies will increase annual energy bills by c.£175 by 2030 for an average 'dual fuel' household[7] - the impact of energy efficiency policies will help people to save energy, or use it more efficiently, and is expected to more than offset the impact of policies to deliver low carbon investment. As a result, DECC estimate that households will be using around 14% less gas and 29% less electricity by 2020 than they would have been in the absence of policies. The impact of this on bills suggests that household bills will be an estimated £92, or 7%, lower than otherwise.

## Renewable Energy Generation[8]

- The total amount of energy generated from *all* forms of low carbon and renewable sources is not yet available at a local level.
- A breakdown of accredited installations under the Feed-in Tariff scheme from 1 April 2010 to 31 March 2015 is provided below[9].

[6] DECC, Policy impacts on prices and bills, Dec 2014
[7] Committee on Climate Change, Energy prices and bills – impacts of meeting carbon budgets, December 2014
[8] https://www.gov.uk/government/statistics/sub-national-electricity-and-gas-consumption-statistics-analysis-tool-2005-to-2009
[9] https://www.ofgem.gov.uk/environmental-programmes/feed-tariff-fit-scheme/feed-tariff-fit-reports

**Table 3 - Installed Renewable Electricity Installations in the City**

| Technology | Installations | Sum of Net Capacity (kW) |
|---|---|---|
| Micro CHP | 6 | 6 |
| Photovoltaic | 2499 | 7067 |
| Wind | 2 | 95 |
| **Grand Total** | **2507** | **7168** |

- A breakdown of accredited installations under the RHI but is not available at local authority level is not yet available on the ofgem website[10].

## Health Impacts

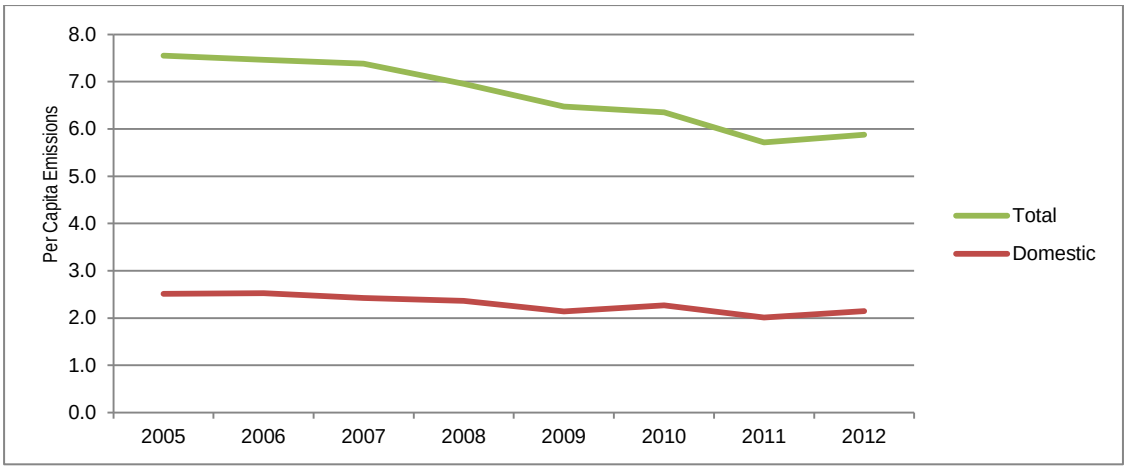
- It is estimated that 18,200 EWD's occurred in the winter of 2013-2014. This is a decrease of 42% from the 31,280 EWD's in 2012/13 and is the lowest number since records began in the 1950's.
- Despite this recent decrease nationally, EWD's persist and are higher than those attributable to alcohol or road accidents each year.
- In the city, an average 110 people died from EWD each year over the 2009-2012 periods. Conservative estimates from the World Health Organization indicate that around 30% of EWD's can be attributed to cold housing.
- Home temperatures have implications for mental health: cold is linked with increased risk of conditions such as depression and anxiety[11]
- Cold homes negatively affect children's educational attainment, emotional wellbeing and resilience.[12]
- Social isolation among older people is exacerbated by living in a cold home. Costly fuel bills prevent them from going out, they fear returning, already feeling cold, to a cold home, or they are reluctant to invite friends into a cold house.[13]
- Costs to the NHS (primary care and hospital) of treating the illnesses caused and exacerbated by cold homes are in the region of £1.36 billion per year[14].
- It has also been estimated that reducing hazards in poor housing could deliver £2.5bn of savings a year for the NHS[15].

[10] https://www.ofgem.gov.uk/environmental-programmes/domestic-renewable-heat-incentive-domestic-rhi/about-domestic-rhi/domestic-renewable-heat-incentive-public-reports#c-c07222373481125849
[11] Green G, Gilbertson J. Warm front: better health: Health impact evaluation of the warm front scheme. Sheffield: Sheffield Hallam University, Centre for Regional Social and Economic Research; 2008.
[12] The Marmot Review: The Health Impacts of Cold Homes and Fuel Poverty, May 2011
[13] e Marmot Review: The Health Impacts of Cold Homes and Fuel Poverty, May 2011
[14] UK Health Forum, Fuel poverty how to improve health and wellbeing through action on affordable warmth, April 2014
[15] BRE Report: The cost of poor housing to the NHS; 2014

## $CO^2$ emissions

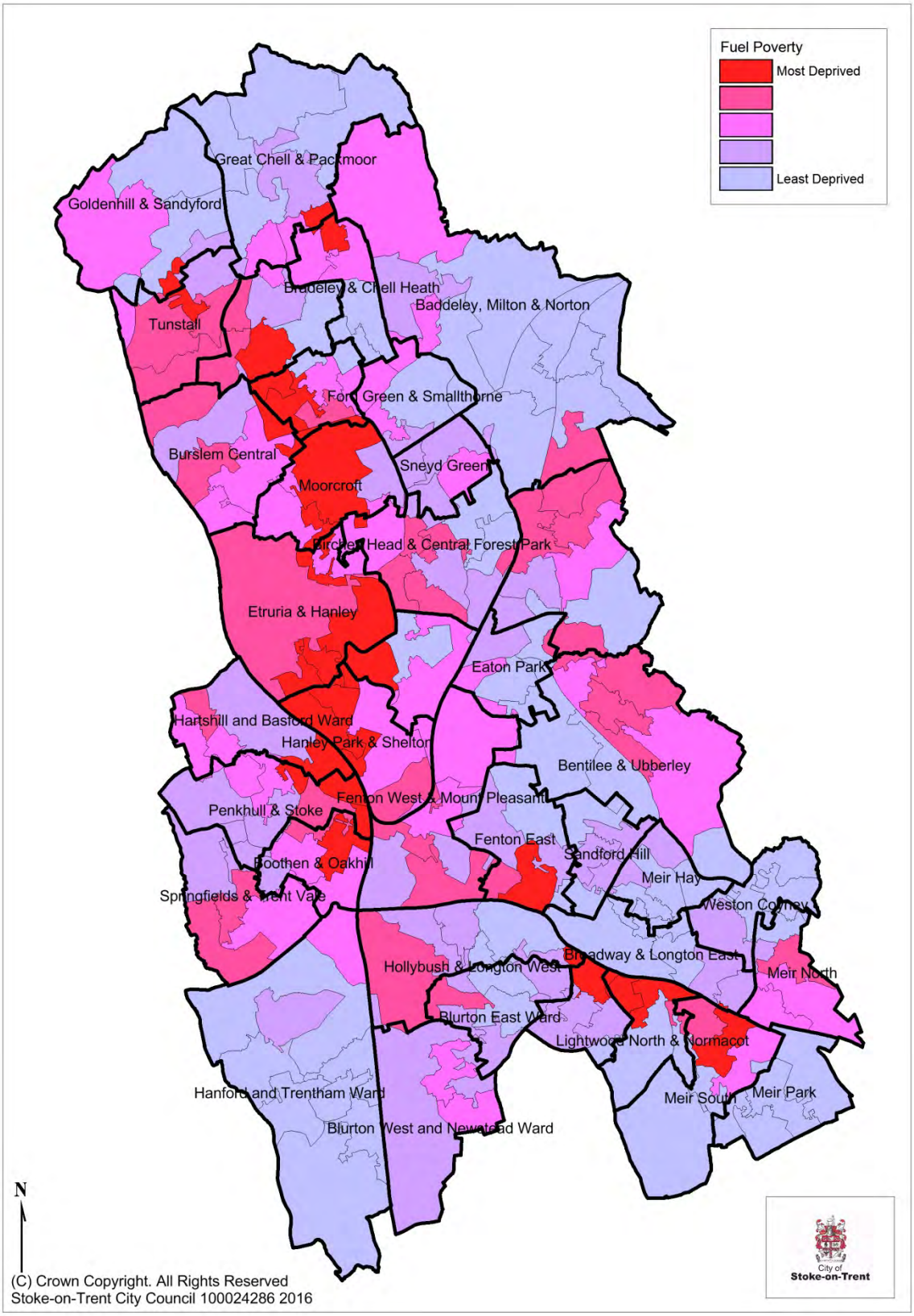
- The Climate Change Act 2008 establishes a legally binding framework for greenhouse gas emission reductions. It includes a requirement to reduce carbon dioxide emissions by 29% by 2017, 35% by 2022 and 50% by 2027 (from 1990 levels).
- In 2012, the total average per capita emissions in England was 7.1 tonnes per person compared to 5.9 tonnes per person in the city.
- In 2012, the total average domestic per capita emissions in England was 2.2 tonnes per person compared to 2.1 tonnes per person in the city.
- Domestic emissions are estimated using local electricity and gas consumption data and represents approximately one third of all emissions in the city (a fall of 9% from 2010 levels).

**Chart 4 - $CO^2$ emissions in the City**




- The fall in emissions coincides with a fall in domestic energy and gas demand. Improved energy efficiency outcomes, with other factors such as warmer weather, may be a contributing factor to reduced energy demand in the city.

## Chart 5 Map of Fuel Poverty in the City by Ward



# APPENDIX 2

## Fuel Poverty Indicators

This strategy proposes to monitor a number of indicators that will enable progress against the strategic aim to be measured.

| Indicator | Source | Trend<br>Yr - Yr | % change | 2016<br>(Baseline) | 2017 | 2018 | 2019 | 2020 | Description |
|---|---|---|---|---|---|---|---|---|---|
| The number of fuel poor homes in the city | Department of Energy and Climate Change | 2012-2013<br>15.4%-14.7% | **0.7% ↓** | 2013<br>**14.7%** | 2014 | 2015 | 2016 | 2017 | Data presented by DECC has a two year lag. |
| The number of people switching to a cheaper tariff and the amount saved | Services provided through the 'Warm Homes, Healthy People' programme | Winter of 2015 – 2016<br>75 | **N/A** | £15,000 saved for customers by fuel switching | | | | | Data available through Beat the Cold for 2015-2016. Scheme is annually funded |
| Domestic Gas Consumption (Average consumption per meter kWh) | Department of Energy and Climate Change | 2009 – 2013<br>14,597 – 12,543 | **14% ↓** | 2013<br>**12,543** | 2014 | 2015 | 2016 | 2017 | Target is to see a continued reduction in gas consumption. |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Domestic Electric Consumption (Average consumption per meter kWh) | Department of Energy and Climate Change | 2009 – 2013<br><br>3,638 – 3,441 | **5.4% ↓** | 2013<br><br>**3,441** | 2014 | 2015 | 2016 | 2017 | Target is to see a continued reduction in electricity consumption. |
| Excess Winter Deaths | Office of National Statistics | | | The rate of Excess Winter Deaths is not a reliable measure of the success or failure of fuel poverty policy. This is because there are many factors that determine these figures, such as how cold a specific winter is, whether there were any flu epidemics over that winter and how severe they were.<br><br>Government is looking at ways of gathering more and better evidence that allows agencies to assess the costs and benefits of health and fuel poverty schemes. This will allow partners make the case for action and investment. and allows local partners to demonstrate the impact they are having. | | | | | |
| Average SAP rating – Private and Social | Stock Condition Survey | | | *2013* | 2014 | 2015 | 2016 | 2017 | Local Stock Condition is 6 years old – is this data now out-of-date? English House Condition Survey doesn't provide city level data. |
| Energy generation from renewable electricity | Department of Energy and Climate Change | | | DECC do not currently publish low carbon/renewable generation stats at local authority level.<br><br>The council will work with DECC to try to get statistics published at a local authority level | | | | | |
| Energy generation from renewable heat | Department of Energy and Climate Change | | | | | | | | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| The number of energy saving measures installed | Ofgem/ Council | | | 2013<br>**TBC** | 2014 | 2015 | 2016 | 2017 | |
| The number of Smart Meters installed in the city. | Department of Energy and Climate Change | | | In relation to Smart Metering, the Programme is currently in Foundation Stage with smart meters statistics published at the national level (GB): https://www.gov.uk/government/collections/smart-meters-statistics | | | | | |