Sefton Council

Home Energy Conservation Plan

Further report prepared for compliance with Home Energy Conservation Act (HECA) 1995

Initial Report to Secretary of State for Energy and Climate Change

February 2013

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SEFTON
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Foreword

Councillor Patricia Hardy
Cabinet Member - Communities and Environment

Energy is such a central part of all our daily lives, the power to run our household appliances and the fuel to heat our homes to keep our families safe and warm. However, that energy which is so vital to our Sefton households, from traditional gas and electricity sources is becoming increasingly expensive.

Whilst much has been achieved across Sefton over the last decade we must rise once again to the new challenges we face, together. It is clear that Government expects Local Authorities to play an increasingly important role in community delivery of energy saving programmes over the coming years. Sefton Council welcomes this responsibility and the production of the new Home Energy Conservation Plan will be central to the co-ordination and delivery of a wide range of actions to reduce energy costs and unacceptable levels of fuel poverty.

Accurate targeting of assistance to the people who are most in need is crucial to tackling fuel poverty. Local Authorities will play a pivotal role in delivering real change through the application of local knowledge and local co-ordination of UK intervention schemes.

With this new plan, Sefton Council places itself 'open for business' and will ensure that a good proportion of national funding resources are attracted to the area and targeted to households and areas of greatest need.

Andrew Warren
Director - Association for the Conservation of Energy

When it was passed, the original Home Energy Conservation Act was described as the most important Act of Parliament ever designed to drive forward energy efficiency. One of the Local Authorities at the forefront in seeking to deliver this Act's original objectives was Sefton Council. Now that the Coalition Government has determined to resuscitate activity to ensure that our homes become warmer, more comfortable and less wasteful, it is great to see that yet again Sefton is at the forefront of delivery. I really hope that other authorities, not just in the north-west but throughout England, follow Sefton's lead.

Miss W
Sefton Resident

In January 2012 I contacted Sefton Council to see if they could assist in helping to make my home warmer. As I was not eligible for the Warmfront grant I thought there would be no help available. My families living conditions were becoming quite difficult. The only heating I had was an old style warm air system, that used a lot of gas, only heated down stairs and didn't provide enough heat to

make the house feel warm for any period of time. When it did work, the warm air it provided was very dry and was making my disabled son, partner and I very ill.

However, the Council's Energy Team worked hard to help raise funding from a variety of programmes to help towards the cost of installing a new energy efficient gas central heating system. We are extremely grateful that our home is now warm, without the Councils intervention we would have had no choice but to continue living in a cold home.

Last updated 28/02/2013

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Executive Summary

Introduction

The UK is now increasingly dependent on fossil fuel imports, with energy prices forecast to rise steeply in the decade ahead. In Sefton we know that improved energy efficiency across homes reduces the overall demand for fossil fuel and helps alleviate further economic pressures on our householders.

In response to Department of Energy and Climate Change guidance, Sefton's new HECA Plan (2013-2027) provides the Council with a bold declaration of intent to address the energy challenges and opportunities we face. This plan replaces the existing 1996 Home Energy Strategy which achieved over 30% reduction in home energy consumption with its success based on active cross sector partnerships and funding structures. The Plan is a reference point with key information and context for Sefton and will be updated biennially. At the heart of Sefton's new HECA Plan is reduction in fuel poverty which is regarded to be the most immediate threat and one that will be our priority for action and measurable improvements.

As the first UK Council to produce their new HECA Plan, it has been purposely designed to deliver ambitious improvements within the new UK delivery mechanisms including: Green Deal, Energy Company Obligation (ECO), Renewable Heat Incentive (RHI) and Feed in Tariff (FiT).

Through this plan Sefton Council places itself open for partnership and will ensure that a good proportion of national funding resources are attracted to the area and targeted to households and areas of greatest need.

Progress against the Council's new HECA Plan will be published and reported to the Secretary of State for Energy and Climate Change biennially.

Sefton's Challenge

It is important to recognise that at the beginning of the 21st century many Sefton residents suffer poor health and are dying prematurely partly because their homes are cold and damp due to the high costs of maintaining sufficient heat. People living on a low income and in homes that waste heat through the building fabric are 'fuel poor'

Our new HECA plan identifies the depth of issues around fuel poverty and existing actions which the Council and its partners have participated in. Due to a number of policy factors the optimum metric for measuring fuel poverty is the number of properties with a Standard Assessment Procedure (SAP) score of 35 and below. SAP is a measure of the energy efficiency of a property on a scale from 1-100 and anything below 35 is considered to be a property (almost certainly) locked in fuel poverty.

From our 2010 baseline data we calculate there to be 6,315 properties with SAP of 35 or less across Sefton.

Meeting Sefton's Challenge - Priorities and Opportunities for Action:

Tackling fuel poverty is an immediate priority for action nationally and locally. The Government have set clear targets for housing energy efficiency, greenhouse gas emissions, renewable energy production and fuel poverty.

We have applied the Green Deal methodology in our new HECA Plan to identify opportunities for all tenures of Seftons' housing stock to inform fuel poverty programmes and ECO schemes. Our comprehensive Sefton stock energy database has allowed us to identify the Green Deal potential for the whole borough. This analysis suggests that there are:

- 542,870 potential energy improvements available (an average over 5 improvements per home)
- This equates to £1.56 billion in investment terms
- The would equate to a 35% reduction in CO_2 arising from household energy use

To set ambitious, yet achievable priorities to 2027 our HECA Plan proposes that if 2% of that potential activity was captured (per annum) to 2027 this would be more reflective of the commercial potential, equating to:

- 152,004 energy improvements
- An estimated investment of £435 million
- A 9.6% reduction in CO_2 emissions (this is an additional 81,448 tonnes to the 700,120 tonnes already achieved under the original HECA plan)
- A 12.49% increase in average SAP levels across the borough
- Removing 3,675 households from the below SAP 35 fuel poverty trap
- Reducing Sefton residents expenditure on fuel by £199 million

The Council are keen to seek Green Deal and ECO partners in early 2013. Due to Sefton's housing stock, combined with its socio-demographic attributes, it will mean that ECO will act as the central tool to this further HECA Plan.

Sefton Council will co-ordinate, measure and monitor activity and in parallel it will implement a marketing action plan that aims to change behaviour, inform, educate, and advise local residents.

With the strength of 15 years of highly successful years of HECA partnered delivery experience within the Council, we are confident in seeking to exceed all expectations within the new plan and look forward to forging new partnerships across the UK to achieve this.

Purpose of this Report

In July 2012 the Department of Energy and Climate Change (DECC) issued its revised guidance on the Home Energy Conservation Act (HECA) 1995. The Act requires Local authorities to prepare reports for how they can improve the energy efficiency of the housing stock in their boundaries regardless of tenure. Local authorities are expected to monitor and report progress regularly. They have a duty to provide stewardship to the local population on reducing energy demand.

The inaugural guidance set up a plan for 10 or 15 years from 1995 and an expectation that energy required (that deemed necessary mainly in terms of heat and light) would fall by 30%. Sefton, like virtually every other authority, opted for a 15 year plan. The reporting procedure required Energy Conservation Authorities (as they are known in the Act) to report on Gigajoules needed by all housing, CO_2 emissions, the estimated cost of the activity and baseline energy use (reports also required these figures to be broken down by tenure). The reports also required local authorities to describe;

- the method for how they monitored the activity,
- describe the activities that led to the savings in the past year,
- any Affordable Warmth strategies and plans or whether they had plans for them

Whilst the Secretary of State sent the report requests to an appointed HECA officer they were required to be signed by the Chief Executive of the authority.

The revised guidance was issued to develop new plans going forward and coincides with the rollout of two key Government programmes aimed to complement it (the Green Deal and Energy Company Obligation).

This plan is Sefton Council's response to produce a further HECA plan. Sefton will use the opportunity to set long term ambitious priorities for energy efficiency with a case for significant improvement in its housing stock.

Sefton Council Housing Profile

Description of Sefton and Housing:

Sefton Metropolitan Borough Council was formed in 1974 as a result of Local Government re-organisation. It comprises the former boroughs of Bootle, Southport and Crosby, the urban districts of Litherland and Formby and part of the rural district of West Lancashire.

The Authority is both long and narrow with a coastline of some 22 miles and is situated between the Mersey and Ribble estuaries. It is bounded in the south by Liverpool, to the east and north by Knowsley and West Lancashire councils and to the west by the River Mersey. The population of the borough is estimated to be 273,790 (2011 census).

Tenure

The number of dwellings in the borough is assessed to be 117,930 (2011 Census). The figure comprises:

17,064 (14.47%)	Social Housing Dwellings
100,866 (85.53%)	Private sector stock (of which 17,064 are privately rented)

The character of the private housing stock varies within the borough with the bulk of the older properties being located in the Southern (Bootle) end and the Northern (Southport) end of the borough. The middle section contains the majority of the stock built between the two wars and post World War II stock. The bulk of the council stock was built from the mid 1930's to the mid 1960's and consists largely of semi detached, terraced and flat accommodation.

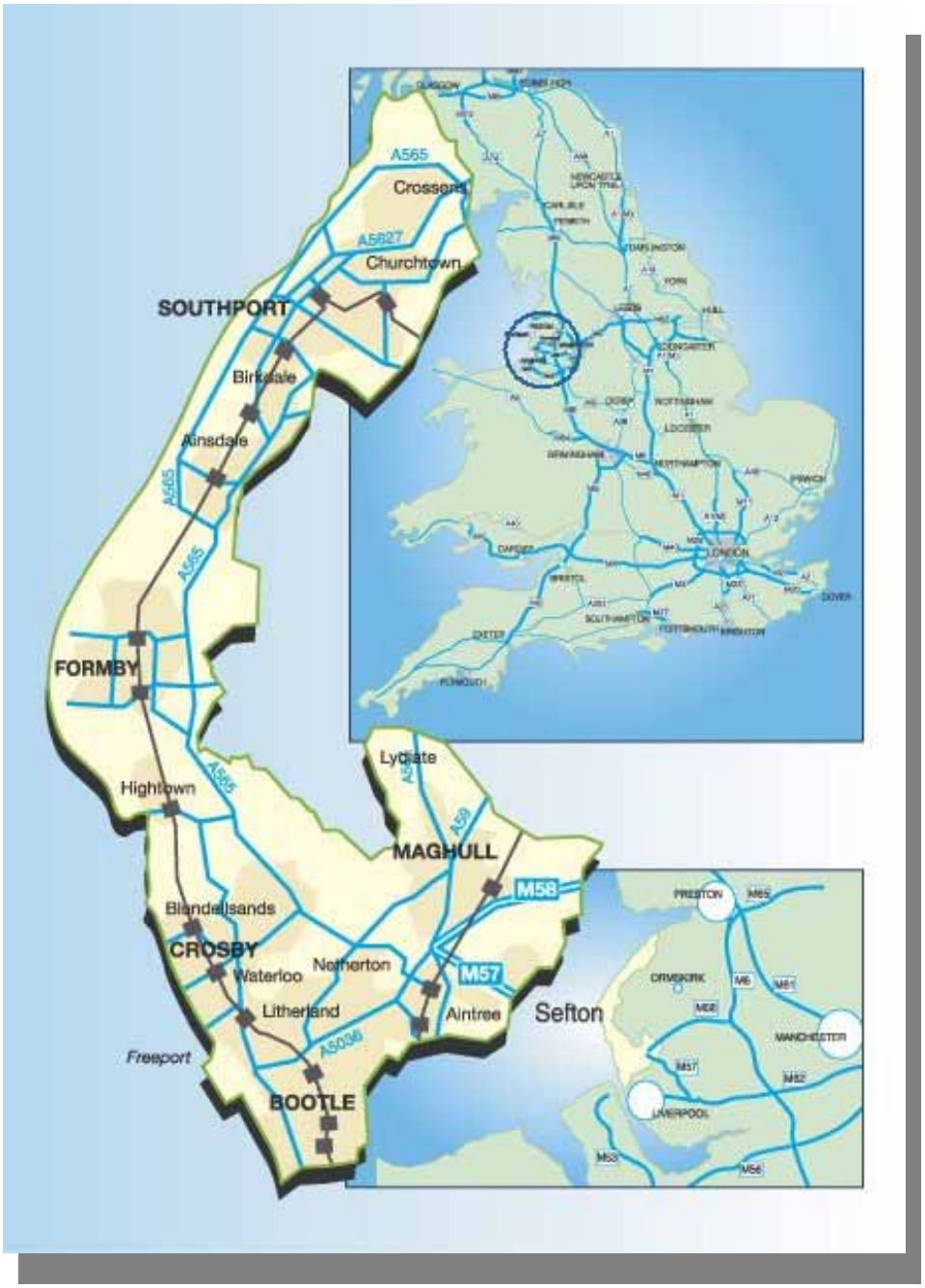
Build Types

There are many property types in Sefton that are more challenging to improve the energy efficiency of and keep warm. For example, there are over 30,000 solid walled and pre-1930 properties which are classed as hard to heat and are more expensive to insulate than those with cavity walls which have been extensively addressed during the last 15 years. This has happened through the range of market interventions the Council has co-ordinated. We estimate from data that nearly 53% of cavities have been insulated but there a substantial number uninsulated due technical issues not covered by traditional cavity wall insulation techniques.

Socio Economic Background:

Sefton is not a homogenous Borough in terms of its socio economic characteristics, rather it includes a varied mix of places in terms of social structures, economic performance, roles and functions. In broad terms, the Borough can be grouped into three distinctive geographies:

North Sefton: which includes the Victorian seaside resort of Southport is characterised by tourism and retailing activities, which typically pay low wages, niche sectoral strengths in residential care, management consulting, public relations, digital and creative and wider professional and business services a strong residential property and quality of life offer, and good educational attainment. However, the area also experiences employment land constraints, energy capacity issues, transient populations, an ageing population, and housing condition and affordability issues.



***Central Sefton**:* which contains towns such as Maghull, Crosby and Formby - acting as dormitories for residents working elsewhere in the Borough and further afield. Central Sefton can be characterised as having a decent housing and quality of life offers, high educational achievement and some of Sefton's more resilient district centres, but also suffers from housing affordability, accessibility and employment land supply issues.

South Sefton: which includes Bootle, suffers from high levels of deprivation, child poverty and inter generational worklessness. Educational achievement of residents and life expectancies are also low, combined with a poor quality housing offer.

In 2010, Sefton was ranked as the 114th most deprived local authority in England. However, there is some significant variation within the Borough in terms of our HECA plan. Currently 18.42% of LSOAs in Sefton are in the 10% most deprived in England, with hotspots of severe deprivation evident in South Sefton around Bootle and the port and in the North around Southport. In contrast the Borough also contains three LSOAs in the 5% least deprived in England.

On average, the proportion of children in poverty in Sefton is below the national average, but again there is considerable variation across the Borough, with pockets of pronounced child poverty in South Sefton in particular. In work poverty is becoming increasingly important as the proportion of families in low paid jobs increases.

Fuel Poverty and Health Issues

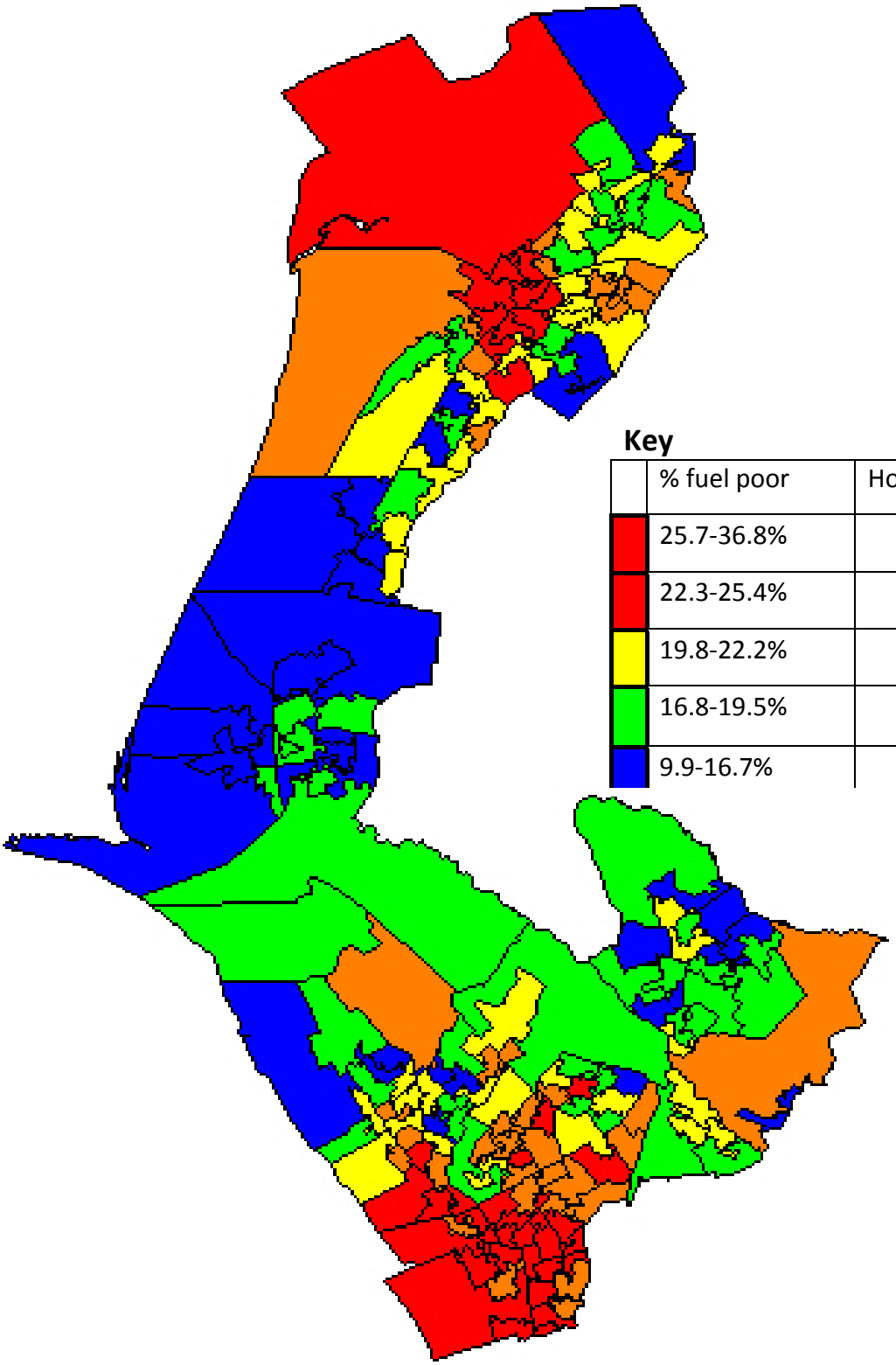
Fuel Poverty for Sefton remains the most challenging issue and is increasing with the age of the population, the age of the housing stock and the economic ability to pay rising energy costs. Fuel poverty occurs when a household needs to spend more than 10% of its income to heat the home to a healthy level, as defined by World Health Organisation standards. Where a household is in fuel poverty, enforced choices will be made on household spending. The consequences of fuel poverty are either choosing not to adequately heat the property and hence risking poor health, going into debt or sacrificing other essentials such as food.

There are many causes of fuel poverty, including: low household income, poor insulation standards, inefficient or expensive heating systems and under occupancy. The most at risk groups are older people living alone, young children and those with long term illnesses or disabilities, compounded by the fact that they are more likely to spend longer periods of time in the home.

Research has concurred that people's inability to heat their homes adequately has a fundamental impact on their physical and mental health. Cold, damp homes contribute to a massive burden of preventable illness amongst the most vulnerable people in society, translating into massive pressures on the NHS and Health and Social Care every year. A recent Health Impact Assessment

conducted by Bolton Health authorities estimated the annual cost of fuel poverty in their area as £8 million (Bolton has a similar population to Sefton, so is a very comparable example).

How is Fuel Poverty distributed throughout Sefton



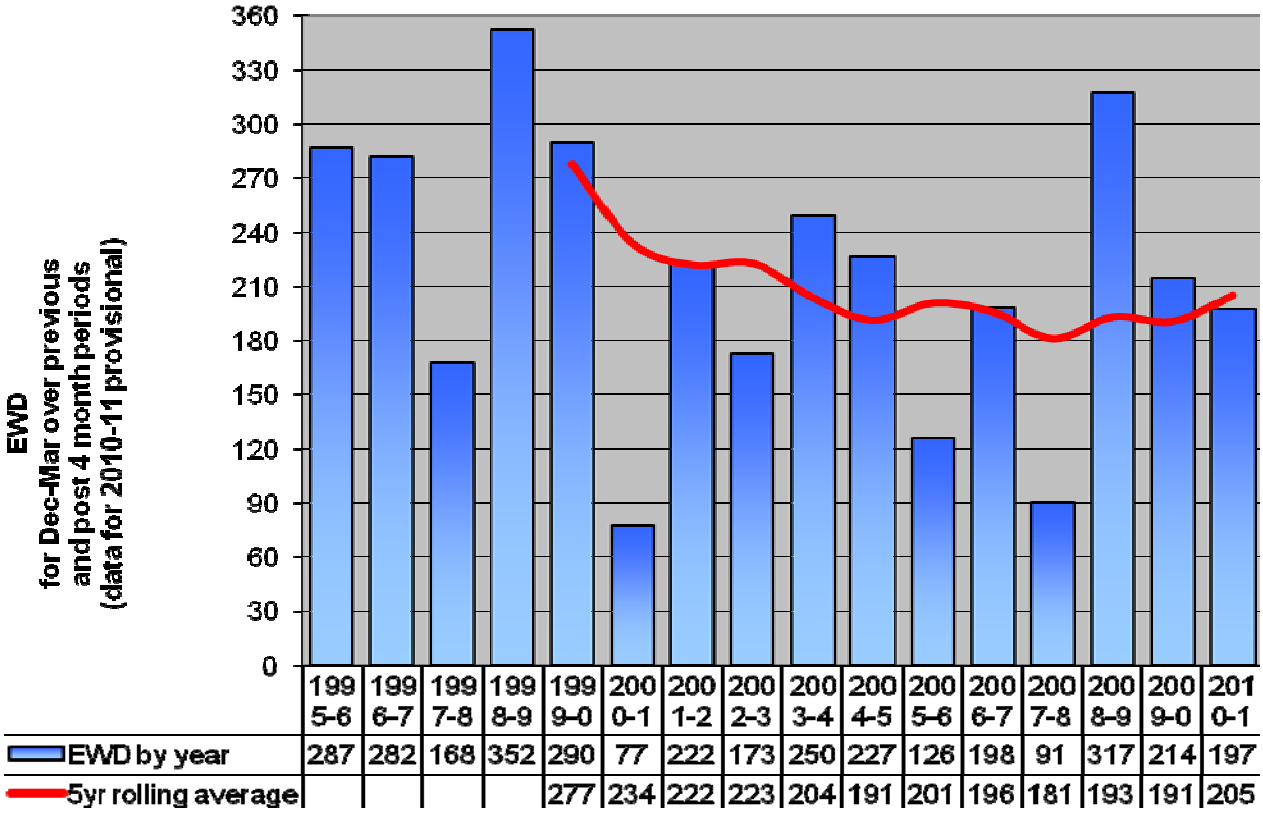
In 2003 a local statistical survey (conducted by CSE and Bristol University) suggested over 30,000 households were 'at risk' of fuel poverty in Sefton. This survey also highlighted that Merseyside had the highest incidences of any county that they had studied.

The financial constraints these households face, means that they often lack the means to upgrade the energy performance of their homes even lacking basic measures such as boilers and heating systems, let alone cavity and loft insulation. This is particularly true in private housing tenures, where energy performance standards are commonly lower.

The latest Government statistical analysis by DECC, suggests 26,237 (21.9%) households were actually living in fuel poverty by 2009. Sefton also suffers an annual 5 year rolling average of 205 Excess Winter Deaths (EWD) related to cold living conditions. Sefton uses a 5 year rolling average as the year to year fluctuations (due to cold temperatures, flu outbreaks, milder winters etc) can create a significant amount of misleading outputs therefore a 5 year average offers a more long-term indicator of change. The table below, "EWD in Sefton by year" shows data for the last 15 years.

Prior to HECA, Sefton experienced 287 Excess Winter Deaths per annum, due to the coordinated partnership interventions and strategy (see appendix 1 for more on the Sefton Affordable Warmth Strategy), this has now fallen to 197 excess winter deaths last year.

Excess Winter Deaths in Sefton



	1995-6	1996-7	1997-8	1998-9	1999-0	2000-1	2001-2	2002-3	2003-4	2004-5	2005-6	2006-7	2007-8	2008-9	2009-0	2010-1
EWD by year	287	282	168	352	290	77	222	173	250	227	126	198	91	317	214	197
5yr rolling average					277	234	222	223	204	191	201	196	181	193	191	205

Original HECA Plan (1996-2010) Context

Since 1996 Sefton Council has held the statutory (HECA) responsibility to set out plans and report on their approaches to reduce home energy consumption in its local authority area. Initially Local Authorities were obliged to work towards a 30% improvement target by 2010/11. The Council took an open partnership standpoint to join resources in a response to delivering on this very challenging target.

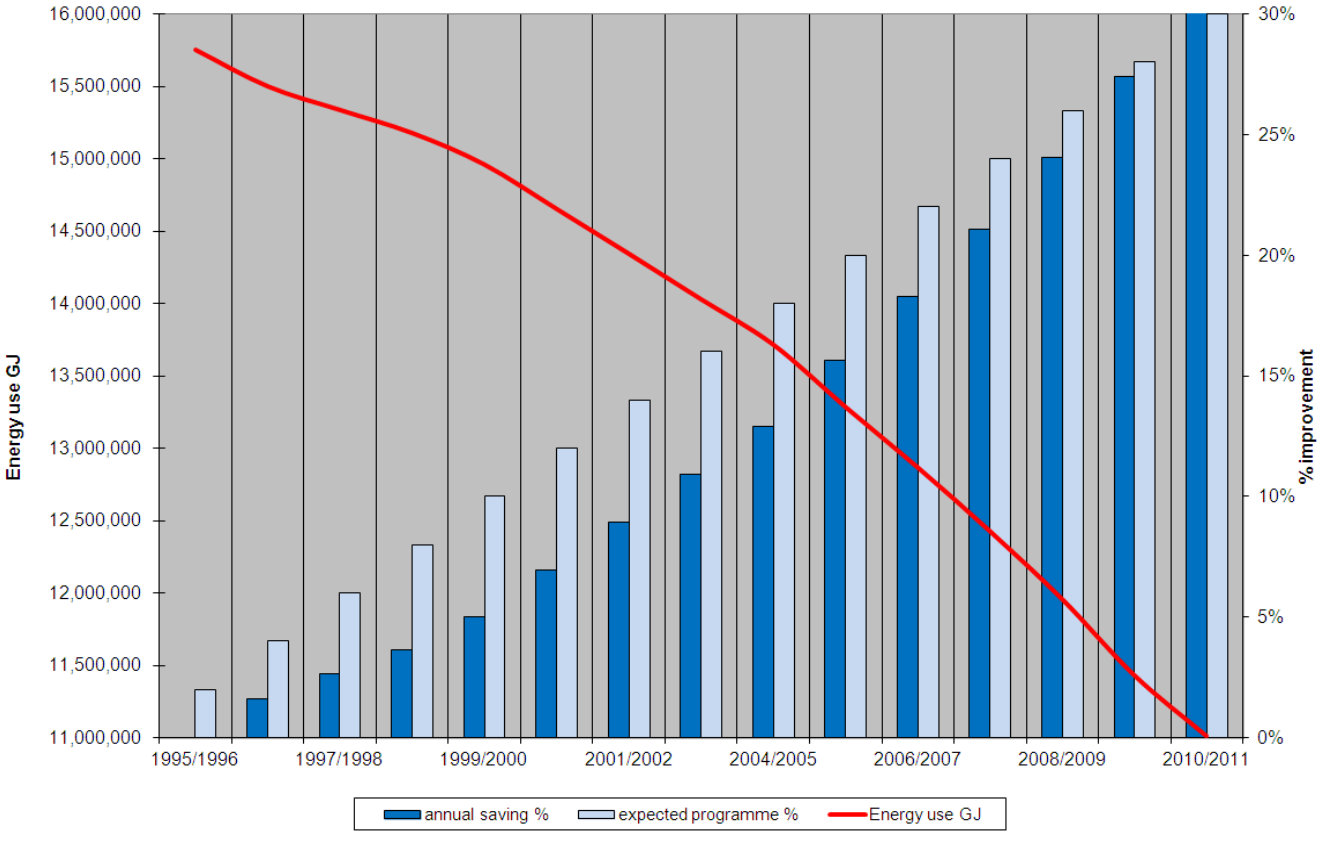
The 1996 baseline established that the estimated forward investment cost required was £300 million, to reach the HECA Target of 30% energy reduction by 2010.

Achievement of HECA Target by 2010

Through a combination of intelligent commissioning, utilising external funds, cross sector delivery partnerships and running programmes, by 2010, Sefton achieved:

- A 30.07% reduction in energy consumptions across all tenures of housing
- Equivalent to £330million investment (historic costs)
- Emissions reduced to 800,439 tonnes of CO_2 per annum (from 1,500,559 tonnes per annum)

Improvement in Energy Efficiency of all housing stock (HECA 1995)



Sefton adopted a method of monitoring and measuring improvements. This involved collating all data from;

- Utilities (Standards of Performance, Energy Efficiency Standards of Performance, Carbon Emission Reductions targets etc)
- Government schemes (Warm front, Clear Skies etc)
- The Energy Saving Trust (Market transformation programmes, cash back schemes for boilers, CFL distribution schemes and home energy checks)
- Building Control (data on cavity walls, pressurised hot water systems and glazing improvements), and
- Any local schemes (capital grants receipts, Housing association programmes and locally initiated health schemes)

Sefton used a spreadsheet method that had been developed by some local authorities in the early years as it was the best way to combine data that was provided in variety of methods: by postcode, by address and others Local Authority wide. By 2004 the Northwest Local Authorities (LA) had recognised that each LA was reporting progress in an inconsistent way and yet being league tabled using the same measurements.

This led the Northwest Home Energy Officers Network (now Northwest Carbon Action Network) to commission a unifying method that took parts from each available method and produced a simplified and consistent data collection tool on a spreadsheet.

Sefton applied the method for subsequent HECA reporting years (25 of the 43 Northwest LA applied the system for reporting). As this was only measured on a Sefton wide basis in most instances there was still scope for missing improvements in the quality of data. Also not every potential supplier of data provided consistent and regular data for each year.

Sefton has since the outset of HECA endeavoured to maintain an address level database for all tenures of its housing stock. Where data was recorded by address it was added to the information for future reference. This has been used for project planning in order to know how many properties in an area have had loft insulation, what proportion have cavity walls or even how many have had a Warmfront grant already.

With the new addition since April 2012 of EPC (Energy Performance Certificate) data available to LA the current database holds data that can be processed into an indicative SAP on approximately 45% of the housing stock and some additional information on many more.

Resourcing of Original HECA Plan

Overall the effective investment required to achieve the targets set out within the original HECA plan in 1996 were very significant, in financial terms they were £300 million.

However, for Sefton its main priority was to catalyse and enable that investment from the complete spectrum of funding opportunities by actively partnering with external funders e.g. utilities, health sector and grant bodies with common targets to achieve.

The Council also facilitated direct support to residents by providing advice, education, information, promotion and a substantial amount of low energy light bulbs (through utility schemes). The outputs for this involved supporting households by:

- Detailed and tailored energy efficiency advice to up to 7,500 homes per annum
- Major database of attributes through 30,000 low energy lightbulbs distributed
- A local freephone advice line
- Over 3,000 home visits to vulnerable homes

This activity was necessary as the main mechanism to promoting grant, discounts and other favourable opportunities leading to;

- Warmfront over 8,339 homes receiving a grant 2008-2011
- Over £18 million invested in Sefton alone between CERT and WF 2008-2011
- Over 10 active CESP schemes in the Bootle area alone
- Good partnerships (up to 72 organisations)
- External funding levered in to deliver projects totals over £0.5 million in the last 3 years
- total estimated delivery costs **£330 million** (at historic costs)

This was achieved for modest investment on behalf of the Council, namely coming from two sources in 15 years.

- Sefton contribution ⅔ an officer and SLA with advice centre £370k in 15 years (historic costs)
- Capital schemes £276K from housing capital spend

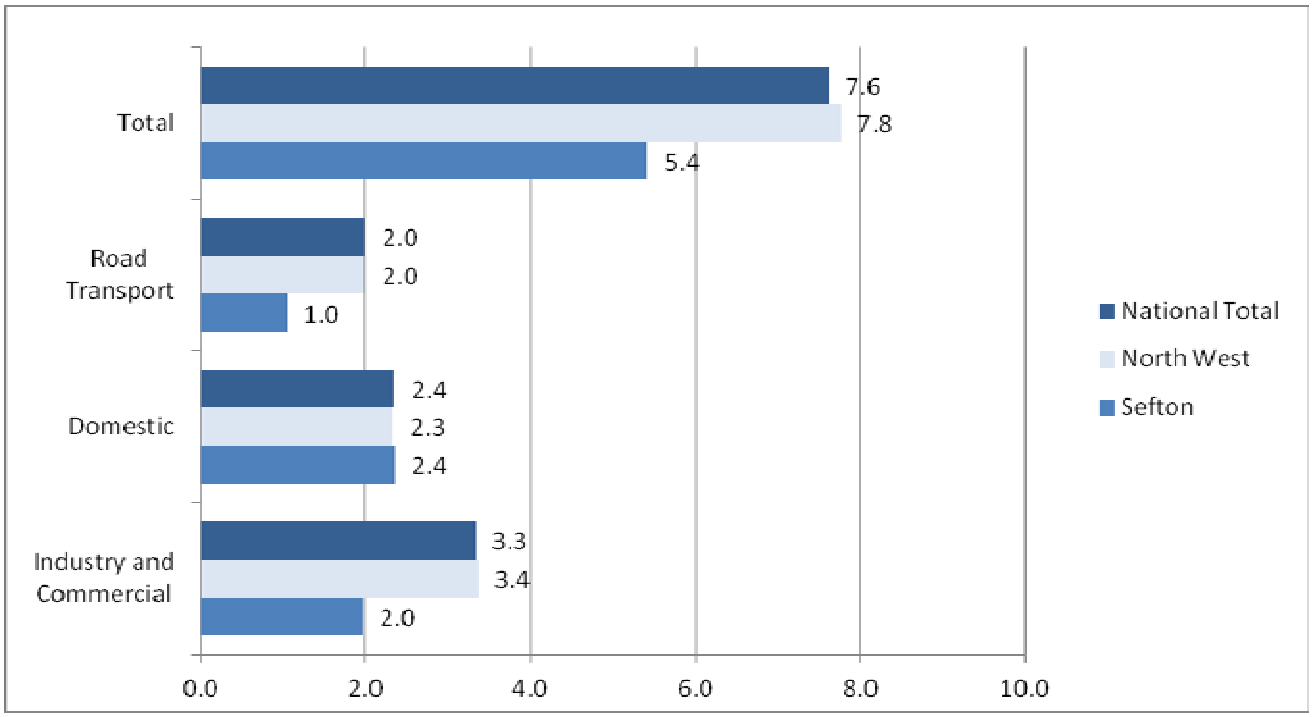
There was some additional funds were spent on energy efficiency by the housing department on Sefton's own stock now One Vision Housing but much of this was part of maintenance programmes and requirements under decent homes legislation.

New HECA 2010-2027 main actions

National Context

The current, and previous administrations, have all promoted energy efficiency and identified it as a key part of any energy strategy. The cornerstones of current energy policy address security of supply, protecting the environment (mainly through lower carbon sources), competitive markets and affordable warmth for all. Whilst there may be debate about details or individual objectives energy efficiency (getting more work out of the same quantity of energy) delivers a no regrets benefit across the entire energy policy spectrum. Nationally household energy use accounts for about 30% of all CO_2 emissions, so even a small percentage improvement in this sector has national significance. In Sefton, household emissions account for 44% of end use CO_2 emissions (not because energy use in homes is higher but because industrial and transport emissions are considerably less than national averages see graph below).

Sectoral per capita CO_2 emissions (tonnes per annum) in 2010 for Sefton, Northwest and for the UK (source DECC Green house emissions data tool)



The UK is now increasingly dependent on fossil fuel imports, with the result that the UK is becoming more exposed to risks from rising global demand, limitations on production and price volatility. UK production of oil and gas has fallen from 134% of national demand in 2000 to 76% of demand in 2010. Published projections show a further fall to 52% in 2026. Improved energy efficiency reduces the UK's demand for fossil fuel.

The cheapest and most effective way to cut CO_2 emission is to use less fossil fuels but energy is integrated into every activity the pervades society. However using it more efficiently stops losing out on the benefits of energy (i.e. warmth) yet still reducing carbon emissions.

Each year the England suffers from approximately 27,216 excess winter deaths (West Midlands Public Health Observatory for data 2007-2010). Countries with much colder climates do not necessarily experience the extent of seasonal mortality that the UK does and much of this is down to housing standards. Most recently Professor Hills, who was commissioned to undertake the recent review of Fuel Poverty, concluded in his interim report that Fuel Poverty was a distinct problem that deserved special attention and the long term solution was energy efficiency. This is still the cheapest and most effective solution for removing households from fuel poverty.

National targets

The following is a summary of legislation in the UK designed to reduce the total greenhouse gas emissions up to 2050 (Source Liverpool City Region Sustainable Energy Action Plan, 2012).

- The **UK Climate Change Act** requires that the UK reduces its greenhouse gas emissions by 80% by 2050 (over a 1990 baseline). This equates to a 77 % reduction compared to 2005 levels. In 2008, interim carbon budgets were set to ensure the UK meets the 2050 target. This included a target for a 34% reduction in greenhouse gases by 2020 (over 1990 baseline), which has been increased to 37% by 2020 (over 1990 baseline)
- The **UK Low Carbon Transition Plan** requires that by 2020 there is an 18% reduction in CO_2 emissions compared to 2008 levels, 40% of the UK's electricity is from low carbon sources and there is a 29% reduction in CO_2 emissions from homes, increasing to 100% by 2050.
- The **UK Renewable Energy Strategy** signalled the UK's intention to meet its European commitment to reducing CO_2 by securing 15% of all its energy (30% of electricity, 12% of heat and 10% of transport) from renewables by 2020.

The Carbon Plan sets out how this will be achieved nationally. The plan identifies that carbon reduction will be achieved through the delivery of 'easy wins' including the insulation of all remaining cavity walls and lofts, while continuing to roll out more efficient condensing boilers.

Locally, Sefton is currently developing a Sustainable Energy Action Plan (SEAP) which provisionally includes a target to reduce all CO_2 emission levels by 20% (using a 2005 baseline). This includes commitments on insulation and heating which is in line with this HECA plan.

HECA Revised Guidance

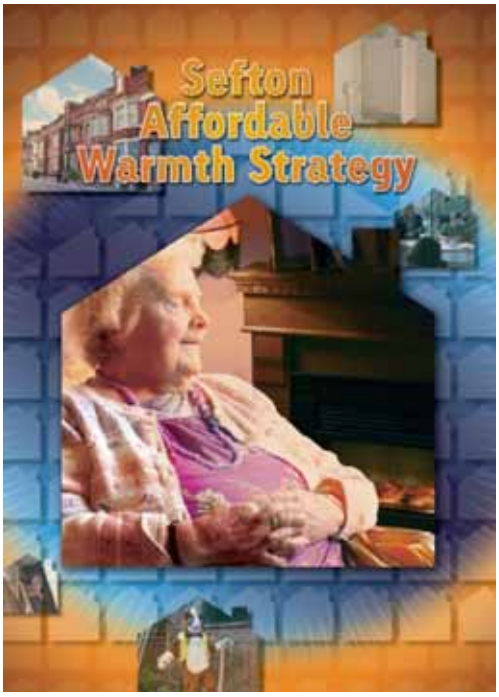
The revised guidance, issued in July 2012, and the original Act recognise that local authorities are uniquely placed to assess local needs and guide local residents as catalysts for change. The guidance requires;

> *"…all English authorities to prepare further reports by 31 March 2013 setting out energy conservation measures that the authority considers practicable, cost-effective and likely to result in significant improvement in the energy efficiency of residential accommodation in its area."*

The act allows the Secretary of State to direct authorities in what they regard as significant improvements. Therefore the guidance places particular emphasis on;

- measures that take advantage of financial assistance and other benefits offered by central Government initiatives (such as Green Deal, ECO and Renewable Heat Incentive),
- measures which an authority has developed to implement energy efficiency improvements cost-effectively in residential accommodation by using area based/street by street roll out.

Authorities are given the freedom to determine their own partners, timeframes, local energy efficiency ambitions and priorities. Sefton will be required to report publicly on progress and implementation of the plan.



Local Actions

The revised guidance recognises that the physical changes to properties are not the sole processes that authorities need to engage in and actions can include advice, education and promotion. With Sefton's existing experience in the delivery of the HECA plan this point is recognised as crucial to encouraging residents to take action. As a pre-requisite for behaviour change and investment in new technologies residents need support in terms of independent, impartial and trusted advice and information.

The original HECA plan relied on a variety of methods and many where not actual improvements to housing but advice, information, training, attendance at events, web activity and tailored reports. The new plan will seek to maintain these elements to give the support that residents' need. Sefton has maintained a temporary arrangement with Energy Project Plus (a local environmental charity) to provide a local advice call centre to the public. Sefton also plans to reintroduce tailored advice reports on the

Green Deal (GD) potential of the home. As the new emergent market for GD has started charging for initial assessments (or tying in residents to certain providers) it is feared that this will prevent interest in the scheme at the first hurdle. By providing a service that could suggest whether the initial assessment is worthwhile Sefton hopes to highlight the opportunities that GD could offer.

Advice services

Sefton had a long standing arrangement with the local Energy Saving Trust Advice Centre (formerly local Energy advice Centre). Unfortunately due to budgets controls within Sefton and central government this service has been withdrawn. However the Energy and Environment team at Sefton has recognised that this service is invaluable taking several thousand calls a year from residents and hence in partnership with the local charity Energy Projects Plus (the former organisation that ran the service locally) has been able to maintain a similar advice line established in 2012 (telephone 0800 043 0151). This service is seen as the first port of call as it can be more readily aware of local initiatives from the Council and private companies. Furthermore, staff on the line are independently qualified energy advisors who can give impartial advice on all options they also have access to a wide variety of specialists.

In 2012 the Government also established the national Energy Saving Advice Service (telephone 0300 123 1234) however this is mainly in place to promote the Green Deal and ECO schemes only at a national level. The staff are not required to be independently trained energy advisors or hold technical qualifications. This is mainly a signposting service. Unfortunately they cannot provide referrals for local services.

The Council does retain officers able to respond to enquiries from the public but given the limited number of officers involved it cannot respond as well. However the best way the Council can advise is through information by using webpages, information leaflets and referring to the dedicated advice line. Also in partnership with other events the Council will, where it can be effective, consider attending events and seminars to raise awareness of energy issues, particularly fuel poverty.

In the past Home Energy Checks have been available to the public, these provide tailored reports on the energy saving opportunities in the property. As this was wrapped up with the Energy Saving Trust Advice Centre this service was also lost in budget control measures. For those who have access to the internet this is still available through the Energy Saving Trust. However in the past those reports and advice were linked to local initiatives where it was suitable.

Sefton is currently considering offering such a service. Through its stock database system we can provide information reports and this could be offered to the public. Appendix 3 shows a sample

report. This could be important particularly for those considering Green Deal (see later section on Green Deal for more information) and there may be a benefit in having at least an indication of what would be recommended and whether this is likely to be cost-effective.

Existing projects

Sefton Council, and it partners, have developed many services and projects, to reduce energy consumption and tackle fuel poverty. Over this period the Energy and Environment Team have assisted many thousands of households to access a wide range of grants, schemes and offers, which have installed measures to make homes warmer and healthier. Appendix 2 has a representative list of the schemes and projects that have been used to deliver on HECA and fuel poverty objectives. They show the variety of work needed to sustain a full programme and highlight the complex funding packages that are needed to make this happen.

Most of these schemes have been the result of responding to opportunities to attract external funding. Most recently Sefton has been successful in attracting £36,726 from the Department of Health, Warm Homes Healthy People fund and up to £48,500 from the DECC Fuel Poverty programme. These will provide direct assistance to vulnerable Sefton residents this winter.

Baseline Year

Given that the previous HECA plan delivered from 1995 to 2010, it is considered useful to use the 2010/11 year as the baseline going forward to give continuation to all long term plans. Especially as the guidance has set out plans indicative that reports should be produced up to 2027 at this stage and possibly further. This would also allow Sefton to refer back to older baselines more readily for other overarching reporting systems (for example Climate Local and Covenant of Mayors).

As indicated previously, Sefton has moved to using its address based database for forward monitoring. Sefton currently employs the services of UNO. As the database has now reached enough of a critical mass to be highly meaningful its strengths in targeting and monitoring cannot be replicated by the old sampling and spreadsheet systems previously employed for HECA monitoring. It is fair to note that modern stock condition assessments work on samples of 1,000 for an area the size of Sefton (HECAMON, the old Government provided system, only expected a sample of 400) yet the current UNO database holds meaningful energy data on 56,848 properties. Furthermore the old systems were only improvement based reporting which provided an inherent bias.

Due to the change of methods this has led to some discrepancies in data. However there are weaknesses whichever method is utilised. Data on energy consumption offered by DECC suggests 644,590 tonnes of CO_2 are emitted from the domestic sector through the use of electric, gas and other

SAP AND EPC explained

The Standard Assessment Procedure (SAP) is DECC's methodology for assessing and comparing the energy and environmental performance of dwellings. Its purpose is to provide accurate and reliable assessments of dwelling energy performances that are needed to underpin energy and environmental policy initiatives.

SAP works by assessing how much energy a dwelling will consume and how much carbon dioxide (CO_2) will be emitted in delivering a defined level of comfort and service provision, based on standardised occupancy conditions. This enables a like for like comparison of dwelling performance. SAP is measured on scale of 1-100 with 1 being poor and 100 being the best. It is estimated that new build properties achieve a SAP of over 80, yet two key levels that are monitored are those below SAP 35 and those above SAP 64. These are the proxy levels for fuel poverty (below SAP 35) and affordable warmth (those above SAP 64).

Energy Performance Certificates (EPCs) are needed whenever a property is built, sold or rented (including social housing). If you're selling or renting your home, you must order an EPC for potential buyers and tenants before you market your property.

An EPC contains information about a property's energy use and typical energy costs recommendations about how to reduce energy use and save money. Whilst an EPC is calculated using the SAP method is uses its own rating system and gives a property an energy efficiency rating from A (most efficient) to G (least efficient) and it is valid for 10 years.

Relationship between EPC bands and SAP ratings

EPC Band	SAP Rating Points
A	92-100 SAP points
B	81-91 SAP points
C	69-80 SAP points
D	55-68 SAP points
E	39-54 SAP points
F	21-38 SAP points
G	1-20 SAP points

domestic fuels in 2010. Whilst this is significantly lower than the HECA report out turn figure of 800,439 tonnes of CO_2 per annum this can be explained by a number of reasons. One key difference is that the DECC uses billed energy data, not need to use energy, so if individuals are choosing to use less than what is needed to maintain health then this would be a sign of frugal activity based on reduced incomes. DECC has produced a number of reports to explain the variety of potential data errors but Sefton cannot access all the raw data and HECA is about energy efficiency not consumption. Therefore Sefton will persist with a need to use energy data method as this measures what people should be using to stay healthy at home.

There are also differences from the spreadsheet system used and the new address based system in total CO_2 output. The final outturn figure for the spreadsheet system reports emissions of CO_2 at 800,120 tonnes per annum. It can be seen in the CO_2 domestic emission table below that the new system reports a much higher figure. It is believed that the inherent bias of spreadsheet systems to only report improvements will mean that there is an over reporting of reductions and hence the lower figure. Whilst the UNO database is made up of data from a variety of sources, the dominance of 35,403 EPC reports come from legal requirements to undertake energy assessments even when improvements are not being undertaken or even contemplated. Therefore this is more akin to a stock assessment.

CO_2 emissions from Domestic energy use for 2010 (Baseline Year)

	dwellings	Average CO_2 (tonnes pa)	Total CO_2 (tonnes pa)
Registered Provider	17,064	5.49	93,718
Owner Occupier	83,801	7.74	648,620
Private Rented	17,064	6.20	105,800
Overall	**117,930**	**7.19**	**848,138**

Having reported CO_2 emissions for the baseline year it is suitable to report how the energy efficiency of the stock is made up and any concerns that may lie in the data. The data below shows how SAP (Standard Assessment Procedure) levels are distributed among the tenures within the borough.

SAP summary statistics for 2010

	dwellings	Average SAP	SAP <35	dwellings	SAP >64	dwellings
Registered Provider	17,064	61.64	1.90%	324	40.78%	6,959
Owner Occupier	83,801	54.01	6.10%	5,112	20.83%	17,456
Private Rented	17,064	57	5.15%	879	30.28%	5,176
Overall	**117,930**	**55.55**	**5.35%**	**6,315**	**25.08%**	**29,591**

Private stock	100,866	**54.28**

Ambitious Priorities for Sefton Energy Conservation Authority

The previous HECA plan required ECA to adopt energy efficiency plans based on Gigajoules required by the housing stock. However the revised guidance gives ECA the freedom to choose its own priorities and set its own ambitious programmes.

The Energy and Environment team considered a variety of potential priorities, including CO_2 savings, energy efficiency improvements, Energy Performance Certificate ratings, zero carbon homes (new build), investment in low carbon goods and services, installed renewable energy capacity, Green Deal plans and fuel poverty. In discussions with key local stakeholders and noting Sefton's existing strong position in dealing with fuel poverty, preference was given to addressing fuel poverty as our key objective. The others may still be addressed but not prioritised.

How Sefton proposes to prioritise fuel poverty will be explored in the potential activity explored below. The method that has been developed for the plan is to assess all the sample data Sefton has collected (around 45% of the stock) and measure its potential for Green Deal activity.

Key objective for Sefton HECA plan	Target	Year
Fuel Poverty: Reduce number of dwellings with a SAP below 35 from 6,315	2,640 dwellings	2027
Reduce CO_2 emissions from domestic dwellings	9.6%	2027
Increase Average SAP for all stock	12.49%	2027
Anticipated investment	£435,477,238	2027
Cumulative and collective savings to residents	£199 million	2027
Installed energy measures (through GD, ECO and other)	152,004	2027

Government Sponsored Programmes

Green Deal (GD)

The Green Deal (GD) is an innovative financing mechanism that lets people pay for energy-efficiency improvements through savings on their energy bills. Repayments will be no more than what a typical household should save in energy costs. Suppliers of GD works are able to recoup their investment through additional charges on energy bills. This removes any upfront costs for investment but still allows the resident to retain some energy savings.

Any GD plans (an agreement between the GD provider and home owner and occupant where applicable) must first have a Green Deal Assessments (GDAs). A GDA is where a trained energy assessor evaluates whether a GD plan for any given home is viable. GDAs have been available from October 2012 and it is expected that the first GD plans will be instigated in early 2013. A GDA is an important part of ensuring that savings will be greater than costs and hence meet the "golden rule" of Green Deal. A GDA assessment uses the SAP method and this data will be collected by Sefton where it is lodged with Landmark (the Government contractor for managing and holding EPC data) to monitor energy improvements over time.

Sefton Council are looking to be a Partner to a Green Deal registered provider. This role would involve working in partnership with a commercial Green Deal Provider to deliver or facilitate delivery of the Green Deal opportunities within the Borough.

This option would mainly involve the Council providing referrals to a chosen Provider and promoting their Green Deal offer to residents. This option maintains a level of influence allowing the Council to develop a partnership that will have the maximum benefit for residents and the community generally through potential employment and fuel poverty reduction initiatives. In return the GD provider gets the benefit of Sefton Council's local knowledge and trusted branding, thereby ensuring that the GD provider gets many referrals.

Around 15% of the domestic sector's remaining abatement potential lies in relatively inexpensive loft top-up insulation and easy to treat cavity wall insulation, it only makes sense for this to be included in GD plans when it is subsidising other measures. However, the remaining potential is split between solid wall insulation (67%) and hard to treat cavity wall insulation (18%). In order to tap into the bulk of this potential in a cost effective way, our HECA Plan will focus on accessing support on these more costly measures to drive overall energy use downwards.

Using the address stock database we are able to model the potential for GD activity, although we have to make some reasoned assumptions. This may be altered in the future, as HECA develops further reports. Sefton has taken a pessimistic approach so as not to over emphasize the opportunities. Using a 7.5% interest rate (with 2% inflation rise) and all measures with a 10 year payback were assessed. This produced a GD potential for the whole stock.

2027 target outputs table for Green Deal potential

Measure	Total Number	Total Installation Cost	Average SAP Improvement	Total CO_2 Reduction tonnes	Total Savings
Loft Insulation	32,368	£10,106,605	3.26	10,544	£1,833,196
Cavity Wall Insulation	33,905	£12,591,387	7.68	25,652	£4,480,854
Hot Water Cylinder Insulation	13,063	£472,800	2.15	3,361	£721,882
Draught-proofing	469	£59,477	0.51	57	£10,416
Low Energy Lights	57,714	£1,000,039	1.00	4,628	£1,550,800
Cylinder Thermostat	20,909	£5,227,169	3.50	9,820	£1,693,301
Upgrade Heating Controls (For Radiator System)	27,925	£11,127,456	3.08	7,341	£1,299,368
Upgrade Heating Controls (For Warm Air System)	17	£6,612	1.16	2	£297
Upgrade Boiler, Same Fuel	80,849	£194,734,306	7.52	66,284	£11,377,265
Biomass Room Heater With Boiler	100	£448,088	10.69	956	£45,309
New Or Replacement Storage Heaters	3,948	£5,036,836	16.45	846	£2,251,430
Solar Water Heating	84,689	£211,118,181	1.42	16,690	£2,567,187
Double Glazing	22,722	£52,508,271	3.80	11,148	£1,873,681
Solid Wall Insulation	27,356	£226,289,927	9.68	30,342	£5,206,533
Change Heating To Condensing Gas Boiler (No Fuel Switch)	3,614	£10,318,892	16.65	5,939	£1,264,180
Change Heating To Condensing Gas Boiler (Fuel Switch)	1,585	£4,766,590	31.80	4,707	£1,359,429
Photovoltaics	98,332	£725,148,527	9.03	84,580	£55,809,159
Flat Roof Insulation	604	£8,469,510	9.93	777	£121,712
Floor Insulation	32,704	£75,845,180	1.89	7,211	£1,241,515
OVERALL	**542,870**	**£1,555,275,850**	**5.20**	**290,884,620**	**£94,707,510**

* Replacement Warm Air Unit, Biomass Boiler, Air Source Heat Pump, Ground Source Heat Pump, Secondary Glazing, Condensing Oil Boiler, Wind Turbine, and Insulated Doors were also considered but returned no viable results

Changes to SAP means across the Stock with improvements

	households	SAP Mean
Registered providers	17,064	80.81
Owner Occupiers	83,801	80.24
Private Rented	17,064	80.62
All stock	117930	**80.38**

This would lead to a significant SAP improvement across the stock and a reduction in CO_2 emissions of 290,884 tonnes, a 34% reduction across the stock. However in reality this is unlikely to be realized by 2027. Sefton therefore has to take a pragmatic approach as what would be expected to be a realistic implementation and take up. The inaugural HECA plan used a 2% energy saving improvement target per annum. Applying the 2% but on the available measures rather than on energy saving, provides an improvement plan. This would suggest an overall programme of a 28% reduction model, based on all the potential GD realisable measures (there is a 14 year programme as GD starts in 2013 even though the HECA plan starts in 2010).

2027 target outputs table for Green Deal potential using the 28% model

Measure	Total Number	Total Installation Cost	Average SAP Improvement	Total CO_2 Reduction	Total Savings
Photovoltaics	27,533	£203,041,587	9.03	23,682	£15,626,564
Solar Water Heating	23,713	£59,113,091	1.42	4,673	£718,812
Upgrade Boiler, Same Fuel	22,638	£54,525,606	7.52	18,559	£3,185,634
Low Energy Lights	16,160	£280,011	1.00	1,296	£434,224
Cavity Wall Insulation	9,493	£3,525,588	7.68	7,183	£1,254,639
Floor Insulation	9,157	£21,236,650	1.89	2,019	£347,624
Loft Insulation	9,063	£2,829,849	3.26	2,952	£513,295
Upgrade Heating Controls (For Radiator System)	7,819	£3,115,688	3.08	2,056	£363,823
Solid Wall Insulation	7,660	£63,361,179	9.68	8,496	£1,457,829
Double Glazing	6,362	£14,702,316	3.80	3,122	£524,631
Cylinder Thermostat	5,854	£1,463,607	3.50	2,750	£474,124
Hot Water Cylinder Insulation	3,658	£132,384	2.15	941	£202,127
New Or Replacement Storage Heaters	1,105	£1,410,314	16.45	237	£630,400
Change Heating To Condensing Gas Boiler (No Fuel Switch)	1,012	£2,889,290	16.65	1,663	£353,970
Change Heating To Condensing Gas Boiler (Fuel Switch)	444	£1,334,645	31.80	1,318	£380,640
Flat Roof Insulation	169	£2,371,463	9.93	217	£34,079
Draughtproofing	131	£16,654	0.51	16	£2,916
Biomass Room Heater With Boiler	28	£125,465	10.69	268	£12,687
Upgrade Heating Controls (For Warm Air System)	5	£1,851	1.16	0.45	£83
Summary	**152,004**	**£435,477,238**	**5.20**	**81,448**	**£26,518,103**

This total programme will be composed of all the actions under the Fuel Poverty target and subsequent ECO programmes (see below). Whilst actions are calculated under the GD framework it should be noted that this may not be the best or only route in which dwellings are improved. This overall programme will yield a significant amount of activity and stock improvements. This would see average SAP levels increase by 12.49% across all tenures (see table below). The CO_2 emission savings equate to 9.6% reduction on the 2010 baseline but it should be remembered that Sefton has already reduced emissions by 47% on the 1995 levels and this would bring emissions to 47.9% of those 1995 levels.

Anticipated Changes to SAP means in 2027 under a 28% potential plan

	Households	SAP Mean
Registered providers	17,064	67.00
Owner Occupiers	83,801	61.35
Private Rented	17,064	63.61
All stock	117930	**62.49**

The logistics of such a plan are not insignificant, an annual illustration of this can be seen below. Whilst this model suggests a very detailed activity, in practice outputs will vary substantially as they will be heavily dictated by prevailing policy, so recent changes to the Feed-in-Tariffs (FiTs) will influence the number of photovoltaic installations in the coming years. Also with utility obligations it is expected that solid wall insulation levels will increase over those reported below.

Annual HECA Target outputs table for Green Deal potential using 28% model

Measure	Total Number	Total Installation Cost	Total CO_2 Reduction	Total Savings
Photovoltaics	1,967	£14,502,971	1,691	£1,116,183
Solar Water Heating	1,694	£4,222,364	334	£51,344
Upgrade Boiler, Same Fuel	1,617	£3,894,686	1,326	£227,545
Low Energy Lights	1,154	£20,001	93	£31,016
Cavity Wall Insulation	678	£251,828	513	£89,617
Floor Insulation	654	£1,516,904	144	£24,830
Loft Insulation	647	£202,132	211	£36,664
Upgrade Heating Controls (For Radiator System)	558	£222,549	147	£25,987
Solid Wall Insulation	547	£4,525,799	607	£104,131
Double Glazing	454	£1,050,165	223	£37,474
Cylinder Thermostat	418	£104,543	196	£33,866
Hot Water Cylinder Insulation	261	£9,456	67	£14,438
New Or Replacement Storage Heaters	79	£100,737	17	£45,029
Change Heating To Condensing Gas Boiler (No Fuel Switch)	72	£206,378	119	£25,284
Change Heating To Condensing Gas Boiler (Fuel Switch)	32	£95,332	94	£27,189
Flat Roof Insulation	12	£169,390	16	£2,434
Draughtproofing	9	£1,190	1	£208
Biomass Room Heater With Boiler	2	£8,962	19	£906
TOTALS	**10,857**	**£31,105,517**	**5,817**	**£1,894,150**

Fuel poverty

The government has traditionally measured Fuel Poverty by applying the 10% model, which is a calculation of the energy costs needed for a healthy home environment and whether the households has to spend less than 10% of its income to achieve that heating regime. In 2011 Prof Hills was commissioned by the Government to review this, as this model was highly sensitive to fuel costs. In November 2012 the Government consulted on a new method for assessing fuel poverty, the "Low income high cost (LIHC)", the results of this process are yet to be announced. So whilst historically the Government has calculated and published the figures from the 10% model the availability of that data going forward is in doubt given the recent consultation. Therefore as a method for measuring fuel poverty for the next 14 years Sefton will need to develop its own independent model that it has some certainty will be available for the timeframe. Sefton has successfully used the proxy that properties below a SAP level of 35 are deemed fuel poor, and whilst there will always be an exception to this, these properties in general are those

that justify the attention for improvement. Therefore the metric for measuring fuel poverty will be the number of properties with a SAP score of 35 and below.

From data it is estimated that there were 6,315 properties with SAP of 35 or less for 2010. Under a previous programme with the Local Area Agreements, Sefton used a targeted approach to reduce the number of properties in this category by 3% per annum from 2006/07-2009/10. This target was easily achieved. So a more ambitious plan is proposed to reduce the number of properties with a SAP of 35 or less by 5% per annum. The table below shows the anticipated programme should the 5% reduction per annum be achieved;

Illustration of predicted programme to reduce the number of Poor SAP homes

Year	Number of under SAP 35 properties
2010	6,315
2011	5,999
2012	5,699
2013	5,414
2014	5,144
2015	4,886
2016	4,642
2017	4,410
2018	4,190
2019	3,980
2020	3,781
2021	3,592
2022	3,412
2023	3,242
2024	3,080
2025	2,926
2026	2,779
2027	2,640

Achieving the outcomes is not required by the guidance nor the Home Energy Conservation Act but Sefton is expected to report publically on progress on a biennial basis (reporting years are shaded). The guidance expects that the public can then hold LA accountable for action or lack of action towards targets. The Council can also review and revise the plan in line with developments and achievements.

Insulation improvements that are economical in properties with SAP below 35

Measure*	Total Number	Total Installed Cost	Average SAP Improvement	Mean Cost per SAP point per install	Total CO_2 Reduction	Total Savings
Hot Water Cylinder Insulation	1,831	£54,921	3.18	£9.43	775	£182,282
Cavity Wall Insulation	1,600	£674,123	10.97	£38.42	2,039	£446,831
Loft Insulation	2,682	£860,581	5.62	£57.07	1,918	£397,690
Draught-proofing	158	£16,001	0.46	£219.72	15	£3,664
Solid Wall Insulation	3,804	£31,184,177	16.15	£507.68	8,468	£1,735,413
Floor Insulation	651	£1,492,501	3.83	£598.80	277	£67,822
Flat Roof Insulation	42	£632,908	21.50	£704.00	101	£21,890
TOTALS	**10,769**	**£34,915,212**	**9.60**	**£337.86**	**13,595**	**£2,855,592**

** Insulated Doors were also considered but returned no viable results.*

The practicalities for delivering and achieving this reduction plan have also been investigated. The first task is to identify the candidate properties and seek solutions. The targeting will still predominately be done through Sefton's existing outreach programmes (our Affordable Warmth service and freephone advice line). Once identified it is likely that both insulation and heating standards will need addressing. Using the existing sample data it is possible to determine the overall programme using the Green Deal "golden rule" methodology (where savings outweigh repayment costs). In order to analyse the data it has been suitable to separate heating and insulation improvements to show the different paybacks that are part of the working expectations. As insulation is viable for a 20 year payback, and heating needs to work on a 10 year payback (as most heating will not reliably last beyond that time). Also, two of the three elements of the utility funding obligations will only support insulation not heating, so it is appropriate to only consider this wider eligibility first (see above table).

Heating improvements that are economical in properties with SAP below 35

Measure*	Total Number	Total Installed Cost	Average SAP Improvement	Mean Cost per SAP point per install	Total CO_2 Reduction	Total Savings
New Or Replacement Storage Heaters	1,516	£2,083,730	29.58	£46.47	377	£1,906,933
Upgrade Heating Controls (For Radiator System)	781	£311,200	5.45	£73.15	542	£95,555
Change To Condensing Gas Boiler (Fuel Switch)	957	£3,025,388	41.83	£75.57	3,675	£1,228,417
Change To Condensing Gas Boiler (No Fuel Switch)	799	£2,337,017	30.07	£97.30	2,929	£592,864
Upgrade Boiler, Same Fuel	1,331	£3,196,972	16.11	£149.04	3,019	£536,284
Biomass Room Heater With Boiler	40	£178,228	11.31	£397.97	662	£31,279
TOTALS	**5,424**	**£11,132,535**	**24.90**	**£82.44**	**11,203**	**£4,391,332**

** Replacement Warm Air Unit, Biomass Boiler, Air Source Heat Pump and Ground Source Heat Pump were also considered but returned no viable results.*

The estimated costs for achieving all viable improvements (insulation and heating) based on Green Deal criteria would be £41,600,771, however this would still leave 953 properties below SAP 35.

As the anticipated target is to only remove 3,675 properties we can eliminate some of the more expensive options (in this case solar water heating and solar photovoltaic). This reduces the cost to £20,248,971 for improvement but leaves approximately 2,232 properties below SAP 35.

The strategy for delivering this will follow the existing affordable warmth strategy which involves identifying those properties that are eligible for ECO schemes and other funded schemes and then promoting the opportunities, enforcing housing standards in rented accommodation and seeking external funding sources to assist the vulnerable.

All Energy improvements that are economical in properties with SAP below 35

Measure	Total Number	Total Installed Cost	Average SAP Improvement	Mean Cost per SAP point install	Total CO_2 Reduction	Total Savings
Hot Water Cylinder Insulation	1,831	£131,102	3.17	£22.61	780,049	£263,136
Low Energy Lights	3,180	£74,234	0.61	£38.03	210,272	£93,105
Cavity Wall Insulation	1,595	£674,442	10.82	£39.06	2,007,718	£415,320
New Or Replacement Storage Heaters	1,523	£2,093,632	28.53	£48.20	259,015	£1,779,573
Loft Insulation	2,277	£763,333	6.17	£54.37	1,804,140	£332,260
Cylinder Thermostat	1,545	£386,161	4.03	£62.04	1,016,914	£179,542
Upgrade Heating Controls (For Radiator System)	838	£333,992	5.49	£72.59	532,867	£94,089
Change Heating To Condensing Gas Boiler (Fuel Switch)	962	£3,040,830	40.07	£78.93	3,368,959	£1,124,404
Change Heating To Condensing Gas Boiler (No Fuel Switch)	819	£2,395,645	27.62	£105.95	2,630,069	£522,198
Draughtproofing	51	£5,111	0.64	£157.60	8,076	£1,854
Upgrade Boiler, Same Fuel	1,822	£4,247,930	13.75	£169.52	3,171,612	£559,058
Biomass Room Heater With Boiler	44	£198,031	11.58	£388.74	664,125	£31,205
Double Glazing	819	£1,971,546	5.39	£447.14	748,511	£111,144
Solid Wall Insulation	451	£3,591,447	14.11	£564.29	984,121	£127,898
Floor Insulation	145	£341,536	3.11	£755.68	63,059	£9,254
Photovoltaics	2,559	£18,830,604	8.68	£847.94	2,196,566	£1,439,197
Solar Water Heating	1,014	£2,521,195	1.90	£1,305.48	340,189	£49,747
TOTALS	**21,473**	**£41,600,771**	**10.03**	**£193.11**	**20,786,262**	**£7,132,981**

** Replacement Warm Air Unit, Biomass Boiler, Upgrade Heating Controls (For Warm Air System), Air Source Heat Pump, Ground Source Heat Pump, Secondary Glazing, Condensing Oil Boiler, Wind Turbine, Flat Roof Insulation and Insulated Doors were also considered but returned no viable results*

ECO (Energy Company Obligation)

The Green Deal scheme has been developed alongside the revamping of the Energy Suppliers' license obligations to reduce CO_2 emissions. The latest requirement is known as the Energy Company Obligation. This means that in many cases where ECO funding is available it will dovetail with Green Deal arrangements. The ECO is designed to reduce Britain's energy consumption by funding home improvements worth around £1.3 billion every year. The funding comes from main 6 energy suppliers. It's delivered to customers either directly from the supplier or by organisations working for suppliers, who have made special arrangements, such as Green Deal Providers. Many householders in older properties and those on benefits or low incomes may qualify for extra financial assistance.

The Energy Company Obligation (ECO) is designed to complement the domestic Green Deal in a number of areas. For some of the most effective carbon saving measures, Green Deal finance alone will not be able to cover the upfront cost of the measures: ECO will combine with Green Deal finance to make these measures affordable under the Green Deal. ECO will also be used to provide insulation and heating measures to low-income and vulnerable households and insulation measures to low income communities.

The Council would ideally seek a Green Deal and ECO partner as a single entity but due to the market situation it may be more beneficial to appoint two separate partners (one GD provider and ECO funder), or even an intermediary. The Council will test the market for all scenarios in first half of 2013. Due to Sefton's housing stock, combined with its socio-demographic attributes, it will mean that ECO will act as the central tool to this further HECA Plan.

One of the requirements for ECO is that an EPC style report is required for all householders so that if its needed to link in with Green Deal the building blocks are there. This further supports Sefton's plan collect EPC data to build up its energy attributes database.

There are 3 types ECO funding. The *Carbon Emissions Reduction Obligation* contingent is mainly a subsidy in GD for expensive wall insulation (solid and hard to treat) to make the golden rule work, this is available to all householders regardless of location and personal circumstances. The *CSCO* is an area based schemes for the 15% most deprived locations in the country. It is designed for neighbourhood improvements by insulating properties in the most challenging communities. The *Affordable Warmth element* is a means tested support for those on certain benefits and offers heating and cost reduction support as well as insulation. All these elements are described in more detail below however the table below summarises which products and measures below are eligible under each stream of ECO. The utilities must also support rural communities and some of these exist in Sefton also, but they must qualify for other elements of ECO first so those aspects are not addressed here.

Eligibility Measures under ECO – (DRAFT as of December 2012)

Type	Product List	Carbon Saving	CSCO	Afford-able Warmth	Ofgem Notes
Insulation	Internal Solid Wall Insulation	√	√	√	If applied to at least 50% (only) of property, then secondary measures can be installed under carbon saving obligation
	External Solid Wall Insulation	√	√	√	If applied to at least 50% (only) of property, then secondary measures can be installed under carbon saving obligation
	Park Home Solid Wall Insulation	√	√	√	
	Hard To Treat Cavities	√	√	√	
	Cavity Wall Insulation	√√	√	√	
	Loft Insulation	√√	√	√	
	DIY Loft Insulation	√?	√?	√	Needs to be installed to meet the Publicly Available Specification - we haven't check this doc yet
	Flat Roof Insulation	√√	√	√	
	Under Floor Insulation	√√	√	√	
	Wall Water Repellent	√√	√	√	
	Hot Water Tank Insulation	√√	√	√	
	Pipe Insulation	√√	√	√	External and internal eligible
	Air Duct Insulation	√√	√	√	
	Swimming Pool Insulation	√√	√		Internal eligible; external ineligible
	Draught Proofing	√√	√	√	
	Window Glazing	√√	√	√	
	Fireplace Balloon	√√	√	√	
	Walkthrough Doors	√√	√	√	This indirectly improves the insulating properties of the premises, by improving the insulating properties of the wall-facing external corridor
Heating	Boiler Replacement			√	
	Boiler Repair			√	
	Other heating units			√	Including storage heaters and warm air units
	Heating Controls			√	We've considered (so far) thermostats, TRVs, timers, dynamic/intelligent controls, weather compensator. All eligible
	Fuel Switching			√	
	Flue Gas Heat Recovery			√	
	Heat Recovery Ventilation			√	
	Radiator Panels			√	
	High Efficiency Water Cylinder			√	
	Various hot water saving devices (showers, taps etc)			√?	Ineligible as doesn't reduce cost of space heating. Only where saved hot water / heat is recovered and recycled into space heating system will this be eligible
	District Heating	√√	√	√	

Type	Product List	Carbon Saving	CSCO	Afford-able Warmth	Ofgem Notes
Microgen & CHP	Solar Thermal			√?	Eligible as long as generated heat is used for space heating
	Heat Pumps			√?	Eligible as long as generated heat is used for space heating
	Biomass Heating			√?	Eligible if leads to lower net running costs (calculations exclude FIT/RHI subsidies) AND generated heat is used for space heating
	Micro CHP			√?	Eligible if leads to lower net running costs (calculations exclude FIT/RHI subsidies), AND EITHER generated heat is used for space heating OR house is electric heated
	Solar PV			√?	Eligible if house is electric heated
	Micro wind			√?	Eligible if house is electric heated
	Micro hydro			√?	Eligible if house is electric heated
Hybrid	Hybrid Systems	√?	√?	√?	For example, n external wall insulation product incorporating solar thermal heating systems. Eligible as long as one of the parts of the system meets the eligibility criteria, and that there is a net cost or carbon benefit from the whole systems

Key	
Eligible measure	√
Eligible only as secondary measure	√√
Eligible only if meets addtional critieria (see notes against each measure)	√?

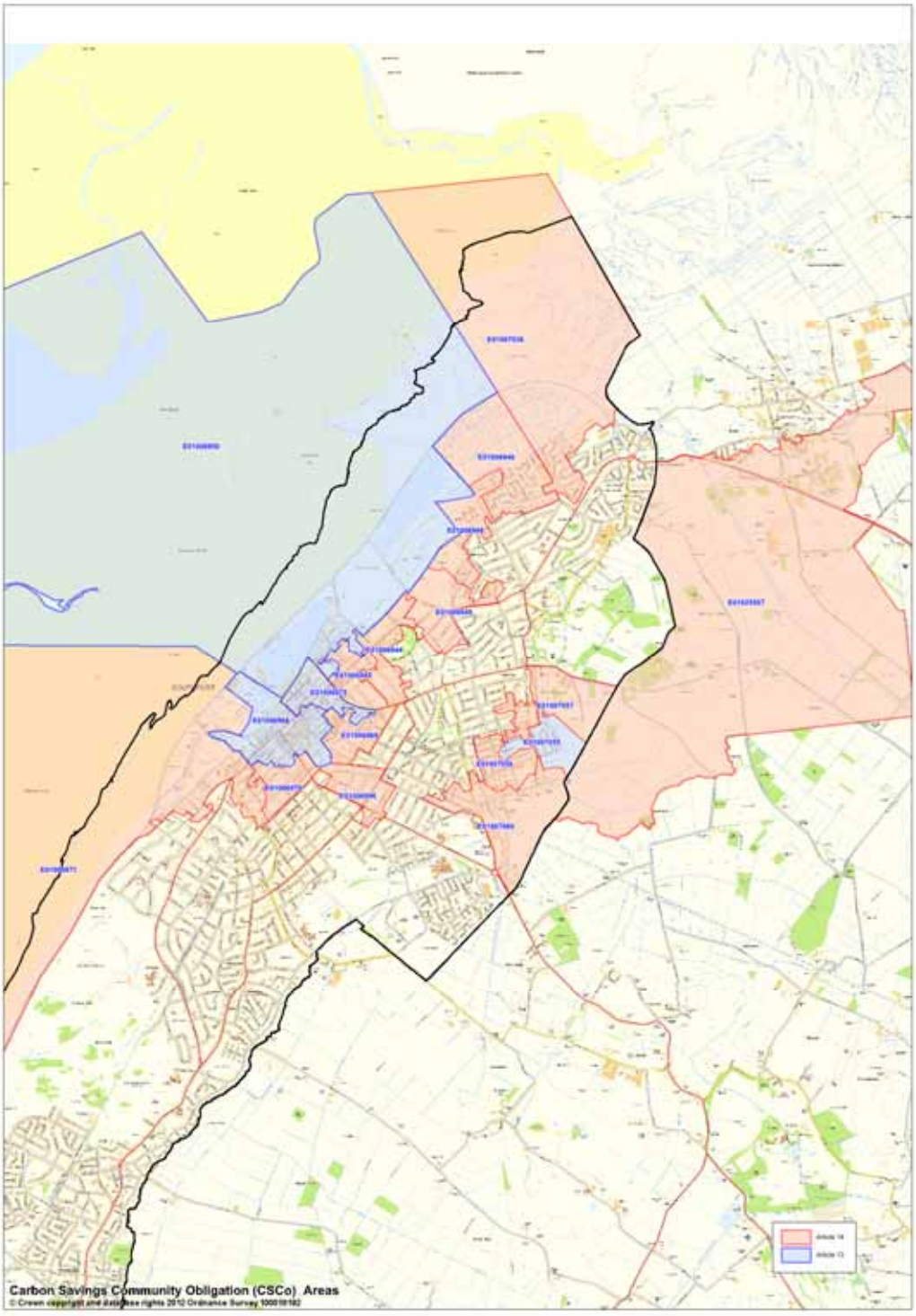
Notes
1) Products must meet any conditions in the Publically Available Specification - we have not compared the above products to this, so some included products may not actually be viable.
2) A product is only eligible if it is in SAP, rdSAP, or Ofgem approves an appropriate methodology. There are many products that will not be in SAP or rdSAP, and in order to approve an appropriate methodology Ofgem may need to insist on a trial, which can take a long time.

Carbon Saving Community Obligation

The Carbon Saving Communities obligation (CSCO) targets insulation measures such as solid wall insulation, cavity wall insulation, loft insulation, and district heating. There is no need for qualifying benefits for properties in a CSCO area, the funding can be given regardless of tenure. Furthermore 20% of the activity can be in done in areas adjoining the target Lower Super Output Areas allowing whole streets to be covered on the fringes.

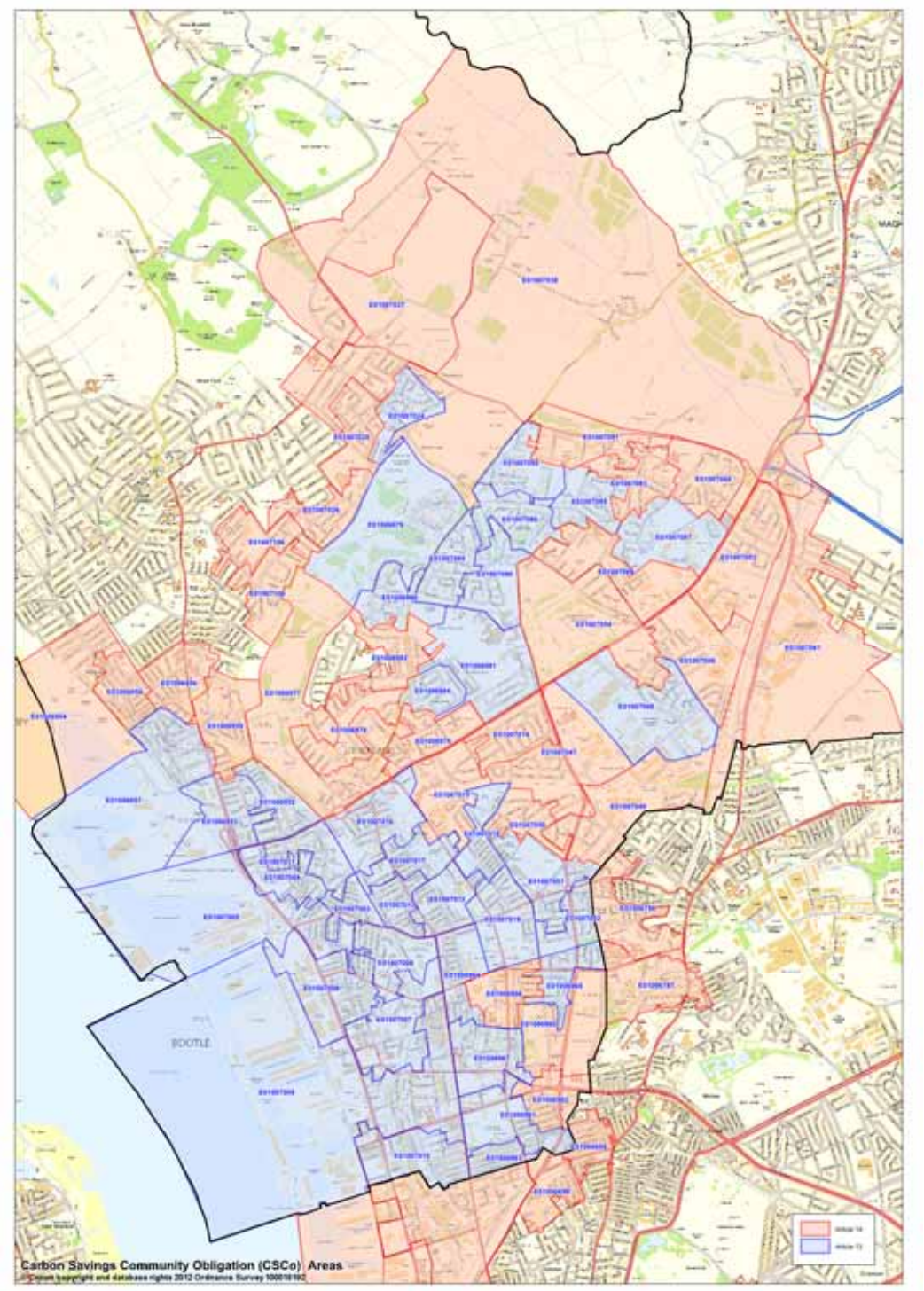
The Carbon Savings Community Obligation (CSCO) is expected to deliver measures equivalent to expenditure of £190m per year through to March 2015. The CSCO will target households across Great Britain in the 15% most deprived Lower Super Output Areas (LSOA) to improve energy efficiency standards. The CSCO will contribute to removing families from fuel poverty through ensuring that their properties receive energy efficiency measures. The Government estimate that around 250,000 major insulation measures will be delivered under this target to March 2015. The associated CSCO carbon savings target is 6.8mtCO_2.

Eligible CSCO areas in the Southport Area



The areas of low income that will be eligible for ECO support have been selected using the Indices of Multiple Deprivation (IMD) in England, Scotland and Wales. The lowest 15% of areas ranked in the IMD will qualify for inclusion within the CSCO element of ECO. The maps (above and below) show the extent of the eligible areas in the Southport and Bootle areas. Areas shaded in blue are the eligible areas and areas shaded in red are the adjoining areas.

Eligible CSCO areas in the Bootle Area



By isolating these areas it is estimated that there are 29,033 properties in the qualifying Lower Super Output Areas. There are concentrations in the Bootle area and central Southport area. By employing the sample data, that Sefton holds (53% of properties for CSCO areas), it is possible to determine the potential activity on the Sefton area.

Examination of the existing stock shows that despite the relatively deprived nature of the areas selected, previous work and the high incidence of social housing (up to 50%) means that the thermal efficiency is better than the average. Also as properties tend to be smaller, this adds to the lower emissions and running costs per property. However this hides the fact that there is also a strong correlation to the solid wall stock in the borough. About a third of the stock in the CSCO area is of uninsulated solid wall construction. The CSCO areas also contain nearly 23% of the stock still at the below SAP 35 level.

Characteristics of the properties in the CSCO eligible areas

Characteristic	CSCO Area	*All Sefton*
Average SAP	58.26	*55.55*
Average CO_2 Emissions	6.2 tonnes	*7.19 tonnes*
Average Running Costs	£1,445.50	*£1,590.66*
Properties With SAP < 35	1,444 (4.97%)	*6,315 (5.35%)*
Properties With SAP > 64	9,744 (33.56%)	*29,591 (25.08%)*

By applying the CSCO eligible measures criteria to the sample data and applying a simple payback analysis it is possible to estimate the potential improvements in the stock that CSCO funding could unlock. The table below summarises the estimated improvements that could be enacted in the CSCO areas.

Potential for eligible CSCO measures in qualifying areas

Measure*	Total Number	Total Installation Cost	Average SAP Improvement	Total CO_2 Reduction (tonnes)	Total Savings
Loft Insulation	7,588	£2,159,159	3.0	2,219	£398,985
Cavity Wall Insulation	7,016	£1,847,668	6.4	4,037	£713,198
Hot Water Cylinder Insulation	911	£27,337	4.2	410	£85,513
Draughtproofing	2	£1,623	0.0	0	£22
Double Glazing	8,050	£18,180,369	5.1	5,159	£904,972
Solid Wall Insulation	8,246	£55,382,652	11.5	10,153	£1,848,893
Flat Roof Insulation	147	£1,819,217	15.5	285	£40,321
Floor Insulation	11,179	£22,309,512	2.3	2,859	£501,187
TOTALS	**43,140**	**£101,727,536**	**5.5**	**25,121**	**£4,493,090**

**Insulated Doors and Secondary Glazing were also considered*

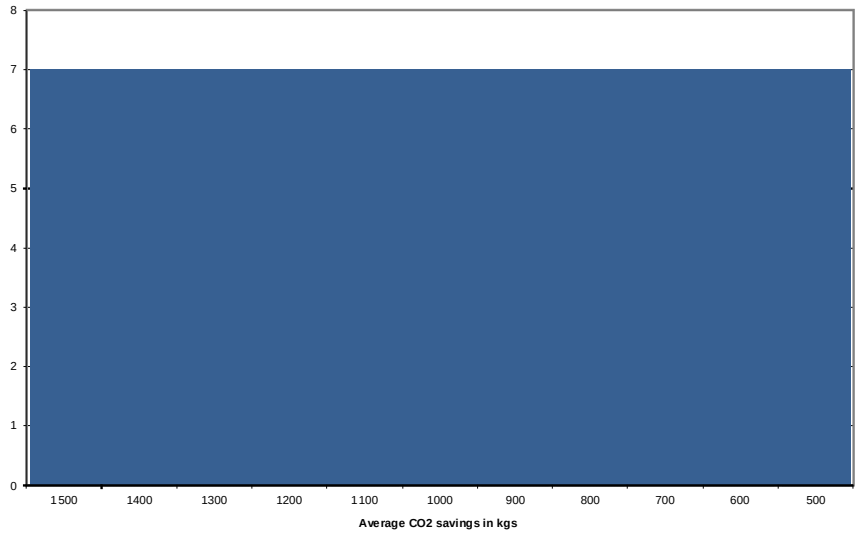
This would improve the stock significantly and lead to an annual saving of 25,121 tonnes of CO_2 and an increase in SAP of 13.9% (see below for a summary of outputs). It is unlikely that all these would be realised by March 2015 however it would be fair to assume that given the targets the utilities have and the support the Council can offer that a good proportion will be delivered.

Combined benefits of all viable CSCO activities in Sefton

Characteristic	CSCO Area 2013	*After improvements*
Average SAP	58.26	*66.37*
Average CO_2 Emissions	6.2 tonnes	*5.4 tonnes*
Average Running Costs	£1,445.50	*£1,290.74*
Total CO_2 emissions (tonnes)	181,179	*156,058*

As the potential in each LSOA is different the ability to develop partnerships will be around good returns for utility investors. Therefore using the sample data, each LSOA has been assessed against its average CO_2 savings per property. There are 3 groups of LSOA those above 1,200kgs of potential CO_2 savings per property, those at 700-1,100kgs and those below 600kgs of savings (see graph below with the highest savings on the right). This has only been demonstrated in eligible areas but similar results are identified in adjoining areas.

Frequency of LSOA by average CO_2 savings



Affordable Warmth Element / Home Heating Cost Reduction Obligation (HHCRO)

Vulnerable and low-income households are one of the main groups for whom Green Deal finance will not generally be appropriate. Poorer households living in inefficient properties have a high propensity to under-heat their homes, which can be detrimental to their physical and mental health (particularly for the most vulnerable), as well as leading to social isolation. The financial

constraints these households face means that they often lack the means to upgrade the energy performance of their homes and often lacking basic measures such as boilers and heating systems.

In these cases, the Government's objective is actively to enable such households to have warmer homes rather than necessarily to save money on their energy bills, promoting improved health and welfare as a result. As such, the affordable warmth part of ECO will focus on providing upfront support for thermal performance measures which will help households to heat their homes more affordably.

Eligibility

Eligibility is for private sector households only. Under ECO Affordable Warmth, individuals can qualify for assistance whether they have householder status or not. This is assumed to mean that members of a separate benefit unit *e.g*. an older relative claiming Pension Credit will make the dwelling eligible for support under the grant.

To qualify, an individual in the household must receive one of the following:

Stand Alone Benefit
State pension credit
Child tax credit and has a relevant income of £15,860 or less
Combination of Benefits and qualifying criteria
Income-related employment and support allowance and;
(i) receiving a work-related activity or support component; or (ii) has parental responsibility for a qualifying child; or (iii) is in receipt of a qualifying component.
Income-based job seeker's allowance and;
(i) has parental responsibility for a qualifying child*; or (ii) is in receipt of a qualifying component.
Income support and;
(i) has parental responsibility for a qualifying child*; or (ii) is in receipt of work related activity or support component.
Working tax credit and has a relevant income of £15,860 or less and;
(i) has parental responsibility for a qualifying child*; or (ii) is in receipt of a disabled worker element or severe disability element; or (iii) is aged 60 years or over.

**has parental responsibility for a qualifying child; is described in Energy Companies Obligation (ECO) 2012 - 2015: Guidance for Suppliers 58 .*

Measures provided

In theory, any measures that improve the ability to heat a home (space or water) will be included (see the full list above in Table Eligibility Measures under ECO page 32). However, in practice it is likely to mainly provide:

- boiler replacements where the existing boiler is not working, not working to full efficiency and not economic to repair;
- boiler repairs;
- new gas heating;
- loft insulation; and
- cavity wall insulation

Where gas is not present there is little incentive for the utilities to incur the expense of organising a connection. So whilst individuals may be eligible for support unfortunately due to the market system they are not entitled to anything. This may mean that additional support is required for the most vulnerable.

Existing Eon Pilot scheme

Since July 2012 Sefton has had an arrangement with Eon as part of their pilot phase for the rollout of the Affordable Warmth Element. In that period up till December 2012, 16 households have been referred for this scheme mainly for replacement boilers. One client who preferred to retain electric storage heaters could not be offered assistance so was referred to Warmfront instead. As the final details of the Affordable Warmth schemes for ECO are as yet to be determined Eon have only been prepared to do what they know will be effective regardless of final details and hence the limitations. However this has proved useful to identify how utilities (and the regulators, OFGEM) will conduct their arrangements and some of the issues involved and how they might impact delivery (for example proof of benefit entitlement standards are much higher than under previous grant schemes).

Predicted impact across Sefton

Due to the intricacies of the criteria for eligibility no known source of data exists to identify how many potential Sefton residents could qualify for the Affordable Warmth Element. However some key figures can help determine some idea of scale of impact. The figures below are a very rudimentary estimate based on limited applicable data.

The simplest qualifying criteria, is the guaranteed Pension Credit and Sefton is able to estimate that there are approximately 5,200 claimants who do not live in social housing.

For those on income support, employment support allowance and jobseeker's allowance we estimate there are 11,300 households. How many of these are in the private sector and, how

many have the other qualifying criteria are unknown. It possible to estimate the number of disabled children but it does not follow there is a link to those on these income support systems.

Data on those earning below the thresholds for Child Tax Credit and Working Tax Credit is not available in any form at this stage. However, through the Energy and Environment team outreach work, no households falling into these two categories have been identified at the below £15,860 income level in the existing Eon pilot.

So given the benefit levels are limited, an assessment on those that need works doing is also required. Sefton has historically been very successful in securing grant funding for residents so as much as households being eligible, they would need the property to be eligible (i.e. it needs works doing). It has been identified already that the majority of work that could be completed cost effectively under the current criteria is boiler repairs and replacements. Here the 2011 Census can assist as it identified that 4,014 households in Sefton reported no central heating (down from approximately 11,000 in 2001).

Given the figures above, and if a low limitations scenario is adopted, there are approximately 16,500 eligible homes. If it is then assumed that all the homes that need central heating are contained within that population. This leaves 12,476 with heating systems. Again assuming they need replacing every 10 years it would be assumed that 1,248 need attention every year. Under this larger estimate, of the homes, needing heating and those with heating systems failures, that would be 5,262 homes this year who could benefit from HHCRO.

Under Warmfront 2 (the previous Government funded programme), with much broader criteria up to 3,000 homes were improved per annum. Estimates suggested that about 30,000 homes were eligible, a rate of approximately 10% of the qualifying population. Therefore at the most optimistic rates it would be assumed that 526 homes a year could receive support under the Affordable Warmth Element of ECO. Despite the crude nature of the estimations this seems to tally quite reasonably with data from Warmfront 3 which adopted very similar criteria to the new ECO Affordable Warmth element.

Whilst there is no doubt that the Affordable Warmth element of ECO will be a key tool for Sefton residents, unfortunately Sefton's outreach programme sees in excess of 800 households in need and the majority will not qualify for this intervention.

Carbon Emissions Reduction Obligation

The Carbon Emissions Reduction Obligation (saving 20.9 million lifetime tonnes of CO_2). It is focused on hard to treat homes and, in particular, measures that cannot be fully funded through the Green Deal. Solid wall insulation and hard-to-treat cavity wall insulation are the primary measures that the Government intends to be promoted under this target. Other insulation measures and connections to district heating systems are also eligible if they are promoted as part

of a package that includes solid wall insulation or hard-to-treat cavity wall insulation. As the 3 elements of ECO can be combined in a property, it is likely to be mixed in with CSCO and Affordable Warmth elements. The stock analysis estimates 547 solid wall schemes measures will be done already but with this subsidy this activity may replace the number of solar photovoltaic installations in the end analysis due to its cost effectiveness.

Renewables

Electric based renewables

For householders wishing to install renewable energy they can either install electric generating technologies or heat generating technologies. For those wishing to generate their own electricity the key mechanism that assists them is the Feed-in-Tariff and those interested in heat or hotwater generation the key mechanism is the Renewable Heat Incentive (RHI). The Feed-in Tariffs (FITs) were introduced in April 2010 as a direct payment to the installers of small-scale renewables generating electricity. The tariffs have two elements, a generation tariff for each unit of electricity generated and an export tariff. The tariff levels were particularly attractive for the installation of photovoltaic (PV) also known as solar electric panels, generating an approximate 7% annual return on investment. A similar regime of payments exists for small wind turbines, micro-chp and electricity generated from biomass sources.

How the scheme works

If a property installs PV panels, it will be able to claim feed-in tariffs and benefit from the electricity it produces in different ways:

- A generation tariff: This is a set rate paid for each kWh of electricity the property generates. The rate varies according to which technology is installed (PV, wind etc), how big the installation is, and in what year a property enters the FiT scheme (although once a property and installation is registered it stays on the agreed tariff, index linked, for 20 years, or 25 years for earlier PV schemes).
- Lower electricity bills: Some, but not usually all, of the property's electricity demand (lighting and appliances) will be met by the PV's free electricity! How much a property saves depends on how much electricity they use during the day when the PV panels are 'active'.
- An export tariff: What the property generates but doesn't use (when it is generating more than is being used on site), is sold to the grid for a fixed price. The export rate is the same for all technologies. Most domestic systems are not measured so half of the generated amount is "deemed" to be exported for ease of administration.
- Feed-in tariffs are index linked and the income from them is tax free.

Due to the schemes popularity the payment thresholds for FiTs allocation are reviewed regularly. The current rate for good installations is 15.44p/kWh and an export rate of 4.5p/kWh but will be reviewed for April 2013. To get FiTs at this standard rate for solar PV a property needs to have an EPC of at least band D. If your EPC is below D you will receive the lower rate of 7.1p/kWh for the lifetime of the tariff, currently 20 years.

What has already happened

As of January 2013, OFGEM were reporting 652 domestic Photovoltaic FIT installations across the borough, additionally with 3 wind turbines and 1 micro-CHP system. Data taken from OFGEM website provides limited interpretation as it only gives the first part of the postcode this means that many are not recorded at address level because the data is not shared. However, how much energy capacity is installed is known and it is therefore possible to estimate the carbon savings and energy generation. There is 1.99 MW installed capacity on the domestic sector producing 1.5 million kWh of electricity and saving 788 tonnes of CO_2 (see table below for a breakdown).

FiT Installs in the Sefton area up to January 2013

Technology	Annual output kWh	Annual CO_2 savings (tonnes)
Photovoltaic	1,482,990	776
Wind turbine	23,424	12
Micro-chp	1,205	0.25
Overall	**1,507,619**	**788**

The GD potential exercise showed that PV was a very promising technology for promotion. Whilst the constant review of the FiTs means it's difficult to have a longterm plan as the economics alter it is worth increasing our promotion of this option. Sefton will retain the possibility of some kind of FiT related affinity scheme should economic conditions become favourable (an affinity scheme is where the Council supports a preferred commercial supplier). The non solar technologies have very limited application at domestic scale although Sefton will continue to monitor how micro-chp evolves as the retrofit possibilities are significant.

Heat generating renewables

The key policy tool of the UK Heat Strategy is the Renewable Heat Incentive (RHI). Final details of the RHI are as yet unknown. Sefton therefore cannot report on the opportunities and how it proposes to promote this due to poor knowledge on whether RHI will be a good offer or indeed still limited to off gas properties. The phase 1 rollout to Registered Providers has only launched in off gas areas and these are limited in Sefton. There has been a phase 2 limited Renewable Heat Premium Payment to individuals available but again, this has only been for off gas areas which are limited in Sefton. Data on what has been installed is limited and there is only summary data for the Northwest available and this shows limited applications at the regional scale.

Installs and vouchers redeemed under Renewable Heat Premium Payment for the Northwest area

	Installations		
Technology	**RHHP 1**	**RHHP 2**	**Totals**
Air Source Heat Pump	117	74	191
Biomass Boiler	78	39	117
Ground or Water Source Heat Pump	107	44	151
Solar Thermal	103	114	217
Total	**405**	**271**	**676**

Renewable Heat Incentive Consultation

The UK Government published their consultation on domestic RHI in September 2012. The key proposals in the consultation are that householders of a suitable property standard could get Indicative tariff ranges for:

- air source heat pumps (6.9-11.5p/kWh),
- biomass boilers (5.2-8.7p/kWh),
- ground source heat pumps (12.5-17.3p/kWh) and
- solar thermal technologies (17.3p/kWh)

Payments for householders are proposed to be made over seven years for each kWh of heat produced for the expected lifetime of the renewable technology and are based on deemed heat usage. Tariff levels set to provide a better return for householders living off the gas grid.

Offgas Areas

Under license agreement Ref /10018, Sefton have been provided with the current gas mains network maps. Under the terms of the license Sefton cannot reproduce the maps for publication, however, 'off gas' areas have been identified using the maps.

The majority of Sefton properties do have access to the gas network. However, there are 60 potential areas (ranging from large hospitals to individual farms) identified which warrant further investigation including 4 domestic sites.

Subsequent work needs to be done to confirm that these are not served by other private gas networks and to identify which fuels are utilised on each site. So when the details of RHI are available Sefton will explore what opportunities this offers those areas first and the wider public as well.

Zero Carbon Homes, Smart Meter rollout and private rented EPC standards

The Government has plans 3 policy plans which will be enacted in the life of this HECA plan. As per the HECA guidance these are explored below.

Zero Carbon Homes

Zero Carbon Homes is a National planning objective that all new homes should have no Carbon impact. The mechanics of this are extremely difficult to implement (not to mention the economic costs to developers) and the original target of 2016 appears to be too ambitious. Policy in this area is fluid and difficult to anticipate as definitions are subject to alteration.

However by assessing the current situation certain conclusions can be drawn. The Sefton area historically develops a net 470 new dwellings per annum. The recent Housing Requirement study indicated that 510 new dwellings were needed per annum, however the Council has yet to confirm any policy decisions in that regard. New build dwellings, as a result of existing building regulations, tend to achieve SAP ratings of 80+ (Registered Providers require higher standards). However key to recent improvements from new build has also been the demolition of some of the stock in the housing market renewal areas. These properties were typically very poor thermally (SAP ratings in the 20-40 range). Therefore the renewal (a further 100-200 dwellings per annum) also increases SAP points by 40-65 points per property.

For forecasts purposes if it is assumed the historic level is to be maintained Sefton would see a marginal improvement of 0.09 SAP points per annum in the stock average. Should the Zero Carbon Homes element actually be delivered in 2016 the SAP change from then on would be an additional 0.07 SAP points per annum across the whole stock. In either case new build rates would have to alter significantly to make any major impact beyond the 2.35 SAP increase by 2027 that new builds bring.

Smart Meter Rollout

The Government's wants every home in Great Britain to have smart energy meters. Smart meters offer consumers real time information on their energy consumption to help them control and manage their energy use, save money and reduce emissions. It is hoped smart meters will also provide consumers with more accurate information and bring an end to estimated billing.

Energy suppliers will be responsible for replacing all the gas and electricity meters, involving visits to 30 million homes and small businesses. The mass roll-out of smart meters is expected to start in 2014 and to be completed in 2019. The majority of consumers will receive their smart meters during the mass roll-out.

As this is to be led by the energy companies Sefton will have little influence and whilst the meters will provide information there are no guaranteed financial savings unless homes change behaviour and link this to the tariffs they are on. Sefton does not anticipate that this will improve energy efficiency but it may reduce some people's bills by if they alter the way they use energy.

Private Rented EPC Standards

The Green Deal overcomes the 'spilt incentive' in the rented sector whereby previously it was the landlord who paid for the energy efficiency improvement but the tenant who benefitted from lower bills.

Under the Green Deal, landlords will be able to make energy efficiency improvements without having to pay for them upfront. Tenants will repay the cost of the measures through their energy bill savings whilst enjoying a more energy efficient home.

In this way it is proposed that the Green Deal is mutually beneficial to both landlords and tenants.

The Energy Act 2011 enables Government to regulate to help ensure the take up of cost effective energy efficiency improvements in the Private Rented Sector. The government's intention is that:

- from April 2016, domestic landlords should not be able to unreasonably refuse requests from their tenants for consent to energy efficiency improvements, where financial support is available, such as the Green Deal and/or the Energy Company Obligation (ECO); and

- from April 2018, all private rented properties (domestic and non-domestic) should be brought up to a minimum energy efficiency standard rating, likely to be set at EPC rating "E".

This requirement would be subject to there being no upfront financial cost to landlords for the works. There may well be indirect costs on landlords such as time or arrangement costs. The intention is that landlords would have fulfilled this requirement if they had either reached "E" or carried out the maximum package of measures funded under the Green Deal and/or ECO (even if this does not take them above an "F" rating).

This is a very promising element of the new programmes, yet it appears these will not be enforced for another 3-5 years. Due to GD mechanisms, the landlord has a good incentive to improve a property by transferring the costs and benefits to the tenant, the stock may have largely have been improved by the time enforcement comes into play anyway and the data shows that the private rented sector is certainly improving rapidly.

Plans for Street by Street Rollout

This is an area the guidance specifically asks us to address. Under the CSCO schemes there is potential to do something however even where there is subsidy funding for the energy improvement measures there is no revenue funding to provide the support services suggested by the approach. Sefton has used the tactic in the past and it has been shown to be effective when targeted. Sefton at this stage will not commit to any such schemes until funding to resource the activity becomes available. There are ways of using the private sector without upfront costs and there maybe GD providers who offer schemes, however Sefton has found these commercial arrangements are prone to significant quality flaws which could leave the Council liable.

Future Local Plans

Below are some future aspirational projects that are planned and whilst these may not be implemented, declaring Sefton's intentions and ambitions in this regard is more likely to attract suitable partners and or funding.

Income maximisation schemes for fuel poverty

Whilst Sefton's energy and environment team works hard to get energy efficiency measures into people's homes it is recognised that fuel poverty cannot be always be resolved by that alone and income maximisation needs addressing too. Sefton has secured some temporary funding to support homeowners to explore whether they are entitled to additional benefits. Staff have also be trained in fuel debt advice and recognise that this is sometimes linked to further debts some general debt advice is also sort to support some of those householders.

Sefton intends to contract with local advice providers to provide this facility. It is also hoped that this could ultimately be linked to employment support. There is significant disruption expected in the welfare reform proposals over the coming years so all income maximisation schemes need to apply a more holistic approach and retain specialists in the field.

Collective Energy Switching

A recent opportunity that is being revived and updated is Collective Energy switching. This involves joining interested parties together to bargain for a better energy offer from energy suppliers. This works best when at least 10,000 join a scheme. Sefton has already entered into dialogue with other Liverpool City Region authorities to seek a scheme that would benefit Sefton residents. This is unlikely to save energy but will save on energy costs.

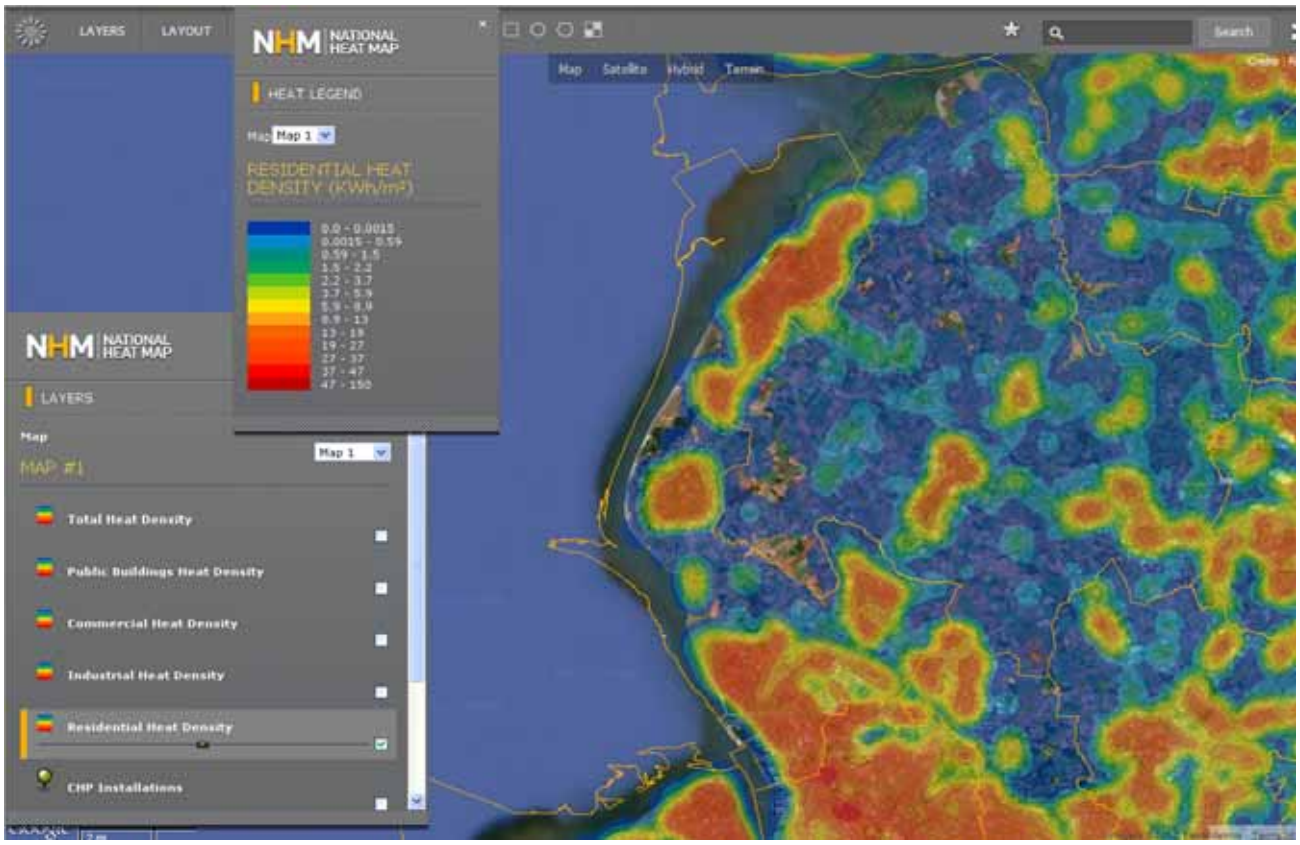
District heating schemes

A long term objective would be to get district heating in place. Instead of every home owning its own boiler and having responsibility for safe gas management they join a district scheme where the central heat plant can be professionally monitored and managed to provide efficiencies and cost savings. Savings are made on bulk buying also. This could allow the Council, or scheme operator, to reduce heating costs further to residents. Whilst there may be funding available in the medium term the Council needs to be funder ready.

The best opportunities for pump priming such activity are through new developments where building regulations and cost offsetting (by avoiding gas connections) could be levered to get critical mass going and ensure a baseload for operations. Sefton through data mining, energy assessments and more recently through the Liverpool City Region SEAP (Sustainable Energy Action Plan) has started to identify the potential sites for district heating.

To support this Sefton have used the DECC heat maps to identify areas of particular heat demand which may help to further identify areas for future work. This confirms that any scheme would benefit from the domestic sector (as opposed to public buildings, industrial or commercial buildings) as it is the largest consumers of heat.

Heat demand from residential sources : All Sefton (red areas = highest heat demand)



Linking the HECA plan to others initiatives

Liverpool City Region Sustainable Energy Action Plan

The Liverpool City Region (LCR) has already drafted a Sustainable Energy Action Plan (SEAP) for the City region. Further to this, Sefton is developing its own SEAP. This not only addresses Sefton's own aspirations but also allows it independently to join the EU Covenant of Mayors scheme. This in itself is a public declaration that the authority aims to reduce CO_2 emissions from within its boundary by in excess of 20% from a 1990 baseline (due to a lack of historical data Sefton has had to adopt a 2005 baseline). The data for this looks at measured energy so whilst the actions from the HECA plan will link directly to the SEAP (which includes travel, commercial and public energy use) monitoring and data are not always interchangeable.

Climate Local

Similarly Sefton is exploring the possibility of signing up to Climate Local. This is the Local Government Association's voluntary scheme to capture all environmental actions undertaken by Local Authorities (again this is a revision of the Nottingham Declaration which Sefton did sign up to). This is able to provide an overarching policy framework for a wide variety of environmental initiatives based around Climate Change so that residents and other interested stakeholders can easily access all the relevant information on Climate Change without having to navigate a multitude of documents and departments.

Local Economic strategies

Within both the Liverpool City Region's Economic Strategy and the Sefton one, the Low Carbon Economy has been highlighted as a growth area. The actions that are likely to arise out of the HECA plan will contribute to this, but also the support economic development initiatives can offer businesses in this sector, will mean local businesses are better placed to deliver on Sefton's HECA ambitions. Sefton will certainly be exploring how to evolve its Green Deal offer to include the non-domestic elements which in turn will support all businesses. It is already spearheading some pilot work with a few local businesses in early 2013 to develop broader programmes.

Links to forthcoming Public health duties

From April 2013 Local Authorities in England and Wales will hold the responsibility for Public Health and its improvement, formerly delivered under the NHS Primary Care Trust's roles.

The new Public Health Outcomes Framework sets out the desired outcomes for public health and how these will be measured. The framework concentrates on high-level outcomes to which improved housing and reduced fuel poverty contribute, the key ones are:

- Increased healthy life expectancy
- Reduced differences in life expectancy between communities
- Seasonal excess mortality

The outcomes reflect a focus not only on how long people live but on how well they live at all stages of life as fuel poverty and cold homes detrimentally affect both young families and older persons alike. This not only to reduces the acute elements to prevent premature mortality that are reflected in excess winter deaths, but also to ensure the living conditions are improved across all our demographics to ensure health is improved and maintained.

Next Steps

The requirements of the HECA guidance will require Sefton to report on progress every 2 years. Sefton will use the opportunity to review this plan and how it is delivering on intended priorities for significant improvement. Sefton will also seek to harmonise reporting between LA to share best practice where it is appropriate.

Glossary

AWE – Affordable Warmth Element funding obligation identified in ECO also known as HHCRO. The funding is aimed at the poorest in society to reduce fuel poverty.

CERT – Carbon Emission Reduction Target, previous energy company obligation which set a carbon saving target based on the number of customers each utility had.

CESP – Community Energy Saving Progamme, previous obligation on generators and suppliers to increase the energy efficiency of the 10% most deprived lower super output areas in the country.

CFL – Compact Fluorescent Lamp, a type of low energy lightbulb, typically using 20% of the energy that a traditional filament bulb will use for the same light output.

CO_2 – Carbon dioxide, the main gas emitted from the burning of fossil fuels and the greatest contributor to manmade climate change.

CSCO – Carbon Saving Community Obligation, part of ECO that targets the 15% most deprived Lower super output areas in the country.

DECC – Department of Energy and Climate Change.

ECO – Energy Company Obligation.

EPC – Energy Performance Certificate required for changes of household tenure or ownership which rates homes from A (best) to G (poor) for energy efficiency and costs to run.

EWD – Excess Winter Deaths, the number of additional deaths in the 4 month winter period, over and above the average of the previous 4 months and following 4 months.

FiT / FIT – Feed in Tariff, a Government set guaranteed payment system, for each unit of electrical energy produced from an approved renewable energy installation.

GD – Green Deal

GDA – Green Deal Assessments, these are detailed reports which are required before a Green Deal can be offered. This is to ensure savings can be achieved and a Green Deal plan is an appropriate course of action.

HECA – The Home Energy Conservation Act 1995 and can also be used as shorthand for the activities that local authorities undertake in the pursuit of delivering the Act.

HHCRO — Home Heating Cost Reduction Obligation

IMD — Indices of Multiple Deprivation is a set of a statistics about an area used, by the government, to define the extent of multiple problems. It includes data on health, education, income and housing.

kWh — Kilo-Watt Hours, how energy consumption/ generation is measured. A typical 1 bar electric fire is 1 kilowatt and if it is running for 1 hour that is 1 kWh of energy used. Typically energy companies charge by kWh also.

LA — Local Authority

LSOA — Lower Super Output Area, is an area used in deprivation statistics and Census data that contains about 400- 1,000 homes. It is the principle constituent of the CSCO areas.

LCR — Liverpool City Region, comprising the Council areas of Halton, Knowsley, Liverpool, Sefton, St Helens and Wirral

OFGEM — Office of the Gas and Electricity Markets, the regulator for the energy supply industry.

PV — Photovoltaic, solar electric panels for generating electricity.

RHI — Renewable Heat Incentive, a set of payments to encourage renewable heat generation.

SAP — Standard Assessment Procedure is a measure of the energy efficiency of a property on a scale from 1-100 and anything below 35 is considered to be a property (almost certainly) locked in fuel poverty.

SEAP — Sustainable Energy Action Plan, a European standard plan to reduce Green House Gas emissions (CO_2 emissions in practice) from all sources across a borough by 20% on 1990 levels by 2020.

Warmfront / WF — The Warmfront scheme was the central government funded programme that offered heating and insulation support to those on certain benefits until January 2013.

Appendix 1 Sefton Affordable Warmth Strategy

Sefton's Affordable Warmth Strategy

The 'Sefton Affordable Warmth Strategy' first published in 2007, continues to be revised regularly with a fourth review published in January 2012. This process is overseen by Sefton's Affordable Warmth Partnership Group whose dynamic multi sector working is a prime example of invaluable joint working and ensuring the vulnerable are reached and assisted.

The strategy has 4 key aims;

- Raise awareness amongst decision makers, front line staff and general public about healthier, warmer homes and lower bills;
- To increase collaboration of organisations towards the formation of partnerships to achieve affordable warmth;
- To influence national, regional and local policies, regulation and legislation, in order to achieve affordable warmth, and
- To improve the energy efficiency of housing to contribute to affordable warmth and provide access to clear, appropriate and impartial information and advice related to fuel poverty.

The success of Sefton's fuel poverty alleviation programmes has been built on a very solid foundation of cross sector partnership in our Borough. This is embodied in Sefton's Affordable Warmth group whom are the joint body to deliver and continually update Sefton's Affordable Warmth Strategy in alignment with Sefton's Public Health Partnership board.

Because the Affordable Warmth Group is an active group, the group is able to rapidly agree the format of various intervention programmes when funding opportunities present themselves. The inclusion of frontline professionals to promote and secure referrals for fuel poverty assistance is a key way to deliver on these opportunities.

Reactive Services

Over the last 5 years Sefton have developed a robust cross sector warm homes referral network with over 90 partnership groups to use their access to vulnerable clients and train them to be able to identify the simple causal factors of fuel poverty and a system to be able to make a referral in to Fuel Poverty Outreach workers.

There have been approximately 500 frontline staff e.g. social workers, police, fire service crew, carers and health visitors alerted to the issues of fuel poverty.

Sefton has developed a home assistance and visiting service for the most vulnerable. The service is geared up to see and assists 800 households a year. Recent demand has meant that the team have had to accommodate closer to 1,000 households. Assistance does range from simple advice to securing full central heating systems for those that qualify.

Appendix 2 Previous and ongoing schemes

SEARCH: Sefton Council with the support of NHS Sefton mainstream funding has been awarded mainstream funding to continue its SEARCH (Sefton Energy Action Reaching Cold Homes) programme. SEARCH is a home insulation grant referral scheme for homes where a member of the household suffers from a cold related / exacerbated illness. It helps 200-300 households per annum with basic heating repairs/upgrades and insulation. The programme is funded until March 2013.

Asthma Project: As part of the work on SEARCH a pilot programme was identified that improved the indoor air quality. Vulnerable children on preventative asthma medication were identified to participate. The project installed items that reduced humidity levels and raised internal temperatures to control and eradicate some asthma allergen triggers such as house dust mites. Final results were very impressive where self reported well being has increased and independent measures, such as attendance at unplanned care decreased by 92% and school attendance has improved also. The programme is funded until March 2013.

Health Through Warmth: Is an assistance fund for people who have health conditions and need heating and is funded by npower. It offers up to 30% of the costs for new or repaired heating work. The last reported year saw 51 households receive assistance through this fund to provide £91,330.89 worth of heating measures in their homes during 2010/11 (the fund itself contributed £21,391.26). This project is due to end in December 2014.

HELP: Home Energy Loans Project offers interest free loans of up to £1,000 for homeowners to install energy efficiency measures in their homes (subject to acceptance). This scheme helps about 10 households a year with purchasing new boilers.

Energy and Warm Homes Advice: Sefton works in partnership with the *Energy Project Plus* to provide a referral scheme with a local focus for our residents. The free phone advice line is open Monday to Friday from 9am to 5pm. It is staffed by trained advisors who provide free and impartial advice on a wide range of home heating and insulation grants, schemes and offers as well as general energy efficiency advice. Working in partnership with the Council, this service provides staffed stalls at key events such as the Borough Flu Clinics to take advice to the public in a proactive way. They engage up to 5,000 households per annum on all energy issues not just fuel poverty.

House Warmer Referral Network: This project is currently running at a minimal capacity due to loss of Affordable Warmth Coordination post in 2010/11 Council savings. In order to strengthen and increase the referral network, the co-ordinator had developed an ongoing programme of fuel poverty briefing sessions to front line staff across many partner organisations (about 500 staff had been alerted to the service). These sessions were delivered during existing team meetings to make best use of their available time. Background information on fuel poverty and issues faced in

Sefton, together with a summary of the help available to make homes warmer are discussed and staff are fully briefed on how to refer those who need assistance using a range of referral methods including accessing the free phone advice line, e-mail, fax or completing a House Warmer reply paid post card.

Supporting People Programme For Extended Assistance: The Energy and Environment Team receives Supporting People funding to employ 2 Affordable Warmth Workers to assist people to live in their own homes independently for longer. They principally assist those that find it difficult to navigate the variety of systems and may need more personal time support to address some of their specific needs i.e. help with accessing some benefits in order to access a Warm front grant, coordinating a house clearance before loft insulation, arranging access for contractors where residents are still in hospital. The role essentially ensures adequate affordable warmth is provided by insulation, heating and income maximisation. However the role will also act as a conduit to other support systems such as the community fire service, social care, disabled facilities grants, environmental health and helping hands.

The 2 workers directly support a minimum of 850 vulnerable clients per year, bringing £1.4M of investment and income maximisation to their homes to reduce impacts on health. Additional external funding has been secured until August 2015.

Education programmes for children: Since 2004 Sefton Council have led in this area and have interlinked education programmes around energy very successfully via our Eco Visitor Centre Schools Education service at the award winning Southport Eco Visitor Centre. These curriculum based educational sessions cover key topics of energy, renewables and climate change and relate them to the children's everyday lives from home to the globe. In excess of 2,000 local children access this facility every year.

REECH (Renewables and Energy Efficiency in Community Housing): Through ERDF funding from the EU Sefton (on behalf of the LCR) has secured £7.5 million funding for 3 years to support registered providers to invest in emerging energy efficiency measures. Most of the activity has been spent on Solid wall insulation and has ensured a lot more CESP funding has been attracted to the LCR.

Appendix 3 Sample Green Deal Advisory Report reproduced from UNO

Based on all measures repaid over 25 years (including none Green Deal measures)

Energy Saving Measures Report

Anyplace
Anytown
Sefton

Property Type: Detached House
Floor Area: 256 m²
Current Running Costs: 2185 £/yr
Potential Running Costs: 1388 £/yr

Current Energy Results	SAP	CO2 Emissions	Running Costs
	63	9401 kg/yr	2185 £/yr

Energy Saving Measure	Installation Cost (£)	SAP	Savings (£/yr)	Payback Period (yrs)
Install PV Panels On Roof	7375	67	568	13
Replace Boiler	2500	76	169	14.8
Insulate Floors	7058	78	60	117

Potential Energy Results	SAP	CO2 Emissions	Running Costs
	78	7207 kg/yr	1388 £/yr

These results were calculated by Energy Audit Company's UNO 2010 software which uses a modified version of the Government's Standard Assessment Procedure (SAP). SAP uses standard assumptions about energy use so that different dwellings can be compared in a fair manner whilst UNO 2010 uses specific details about the dwelling concerned in order to provide as accurate an estimate of the running costs as possible.

The savings are calculated for each improvement by taking the difference between the running costs with and without that improvement. They do not take into account the installation costs.

The SAP rating is a measure of how efficiently your home uses energy and can have a value between 1 and 100. Efficient homes have a high rating and inefficient ones have a low rating. The lower your home's SAP rating, the more you will be spending on fuel bills.

The results in this report are based on standard assumptions about how homes are heated and therefore are indicative only.

This document has been created by Energy Audit Company's UNO 2010 software. It is not an Energy Performance Certificate, nor a legal document and should not be used as such.