
Solihull MBC

Home Energy
Conservation Act
Progress Report -
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Contents

1. Introduction
2. Summary
3. Strategic ambition
4. Reduction in energy consumption and carbon emissions
5. What has been done in the last two years
6. Plans for the next two years

Appendices :

- i. Energy Efficiency Action Plan
- ii. Energy Performance Certificate data

1. Introduction

The Secretary of State for Energy and Climate Change requires local authorities in England to provide an update report every two years setting out the 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 the area.¹ The initial report published March 2013 set out how the local authority intended to help residents take advantage of financial incentives such as the Green Deal, Energy Company Obligation (ECO), Renewable Heat Incentive (RHI) and other similar schemes.

This first progress report provides an update on the progress that Solihull Metropolitan Borough Council (SMBC) is making and a summary of the type of actions taken to increase the energy efficiency of the housing stock.

¹ Guidance to English Energy Conservation Authorities issued pursuant to the Home Energy Conservation Act 1995, DECC July 2012, para 2.2.

2. Summary

SMBC has improved energy efficiency in residential buildings by more than 25% since HECA was introduced in 1995.

The Council understands the importance of home energy conservation and the influence it has with its residents and will continue to make all reasonable efforts to support the installation of energy conservation measures in the area, continue to encourage householders to take advantage of appropriate government and other national initiatives as well as local projects that support improved energy efficiency.

The Council is particularly keen to ensure local businesses secure maximum economic opportunity from energy efficiency installations including the Green Deal and Energy Company Obligation (ECO) and similar schemes, and to this end ran stakeholder events in October 2012 and May 2013 to promote opportunities in the Green Deal and ECO to local businesses and community groups.

Over the next two years the Council plans to develop further area-based ECO-funded schemes with national partners, and anticipates continuing to provide active support for the Green Deal, Feed-in-Tariffs, Renewable Heat Incentive and related initiatives through referring residents to suitable national and local providers and connecting providers to local SMEs.

The Council is committed to improving energy efficiency and reducing Carbon emissions whilst encouraging managed growth. The advancement of HS2 and UKC will see further opportunities to promote the use of renewable technologies and to establish Solihull as a great place to live.

The Council will deliver our substantial ambitions in this area via the new Home Energy Efficiency and Affordable Warmth Strategy (HEEAWS) including renewables, external wall insulation and area-based energy efficiency schemes across the Borough.

3. Strategic Ambition

Our vision is that Solihull Borough, through the leadership of a Council engaged fully with national and local initiatives, will ensure that our residents and local businesses prosper by taking advantage of support and opportunities available to them.

Solihull's Sustainable Community Strategy (SSCS) 'One Borough: An Equal Chance for All' is a vision for the kind of Borough we want to live in by 2018, and a map for how we get there. The purpose of the SSCS is to make the improvements needed to create the kind of Solihull: where everyone has an equal chance to be healthier, happier, safer and more prosperous. In order to achieve this four change priorities have been identified:

1. Improve health and wellbeing
2. Managed growth
3. Building stronger communities
4. Deliver value

The HEEAWS supports these priorities and looks to improve the lives of residents across the borough. Solihull Council has for many years appreciated the need to promote home energy efficiency and support vulnerable residents in achieving an affordable heating regime. It has never

been more important to ensure that we conserve energy and promote, at the domestic level, the use of renewable energy sources and support residents in lowering fuel costs. The soon to be updated HEEAWS aims to build on existing policies, practices and partnerships to maximise the potential for energy efficiency, renewable energy and provision of affordable warmth to residents in Solihull.

The purpose of the strategy is to guide the Council and partner agencies in committing resources to four linked objectives:

1. To improve the energy efficiency of domestic dwellings in Solihull and promote the use of appropriate renewable technologies.
2. To work towards a reduction in fuel poverty throughout the Borough.
3. To work with partners to provide timely advice and support to the vulnerable and those on low income.
4. To support the emerging 'green economy' through investment in energy efficiency measures in new and existing housing.

The Council are aware that those living in poverty are more likely to live in poorer housing, precarious housing circumstances or lack accommodation altogether. The right home environment is essential to health and wellbeing and we will work together, across housing, health and social care sectors to promote the principles for joint-working to deliver better health and wellbeing outcomes and to reduce health inequalities.

4. Reduction in energy consumption and carbon emissions

In 2012, Solihull Metropolitan Borough residents consumed an average of 1,708GWh (gigawatt hours) of energy², with gas accounting for 40% of the total, 19% electricity, 41% oil based products. This is a slight decrease in energy consumption since the previous 2011 data set showing domestic energy consumption at 1,716GWh.

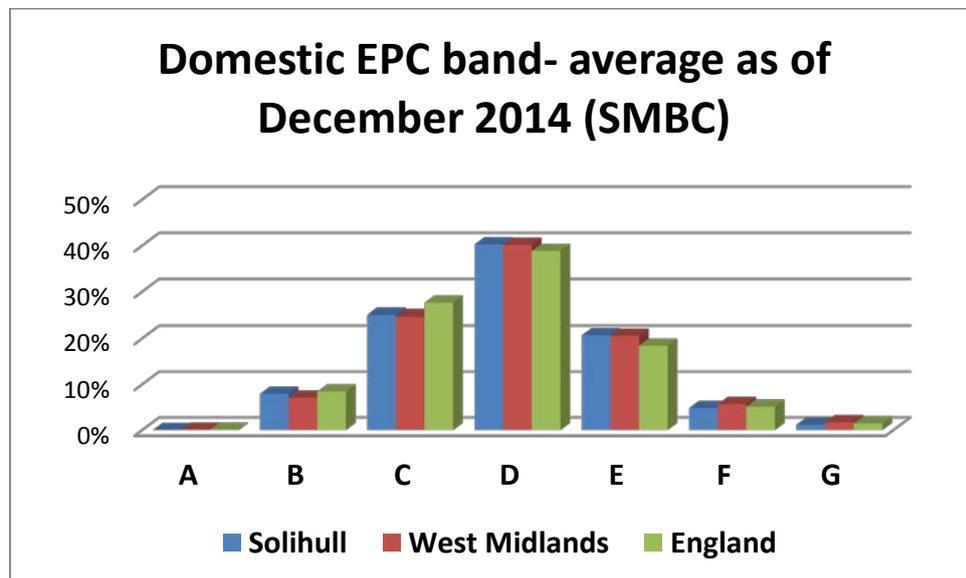
Each year, the Department of Energy and Climate Change (DECC) publishes CO₂ emissions estimates for all local authority areas. In 2012, an average of 2.4 tonnes of CO₂ was emitted per person in Solihull. Domestic emissions (see below) accounted for 31% of the total emissions.

Year	Total domestic emissions (ktCO₂)	Emissions per capita (tonnes)	% reduction since 2005
2005	536.4	2.7	
2010	503.0	2.4	
2011	443.2	2.1	
2012	490.2	2.4	8.6%

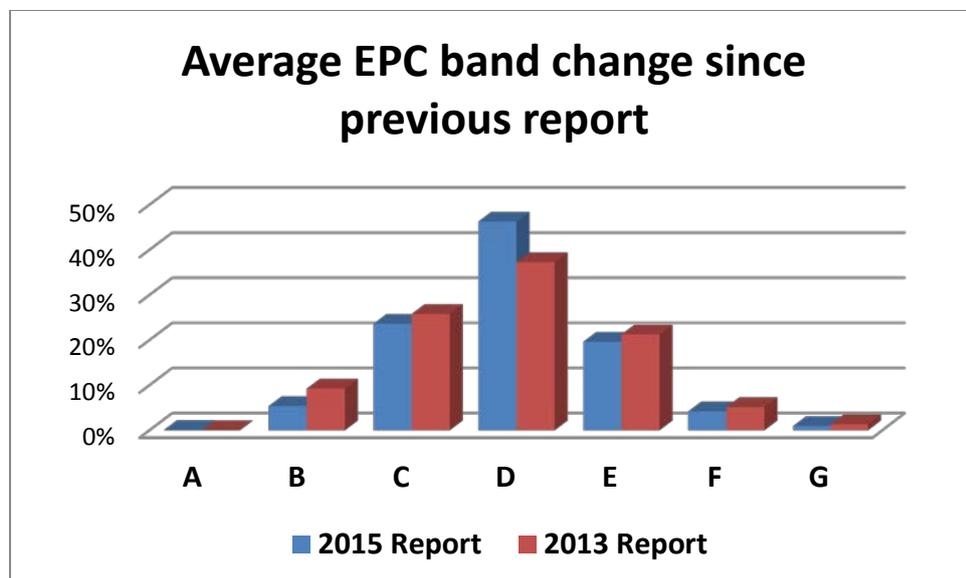
Although CO₂ emissions in the domestic sector have only reduced slightly since 2010, the emissions per capita are slightly higher than the regional and national average of 2.2 tCO₂.

² Based on 2012 sub-national electricity and gas consumption statistics.

Energy Performance Certificates (EPCs) provide a measure of a home's energy efficiency as a cost index and are required when properties are sold or rented and also when the Feed in Tariff, Renewable Heat Incentive or a Green Deal loan is required. An average home is considered reasonably efficient and will be represented as band D with less efficient homes in band E, F and G.

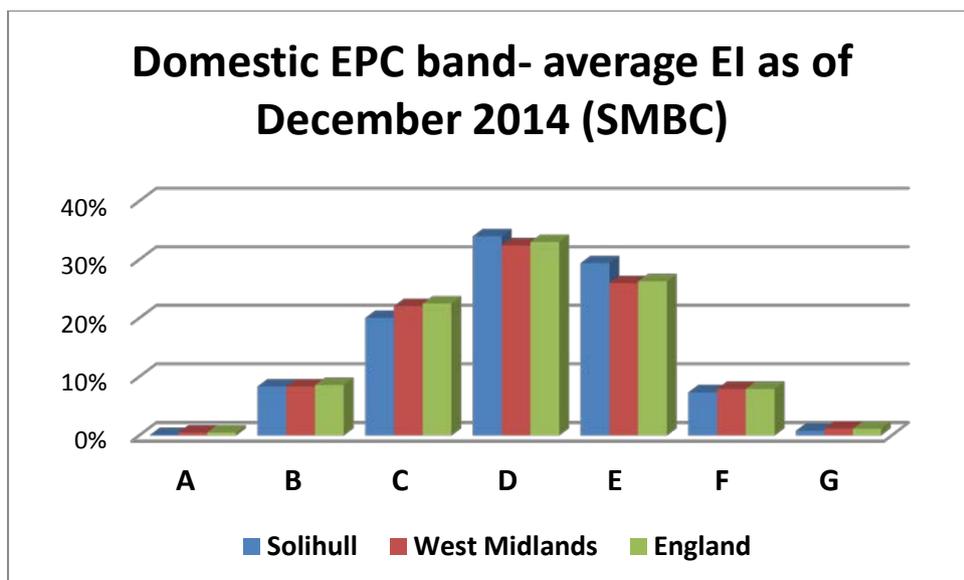


Based on all EPCs recorded to date in Solihull, there are a greater proportion of band D properties than the England average and the same as the West Midlands average. There are also fewer properties in the less energy efficient bands of F and G than the West Midlands average.

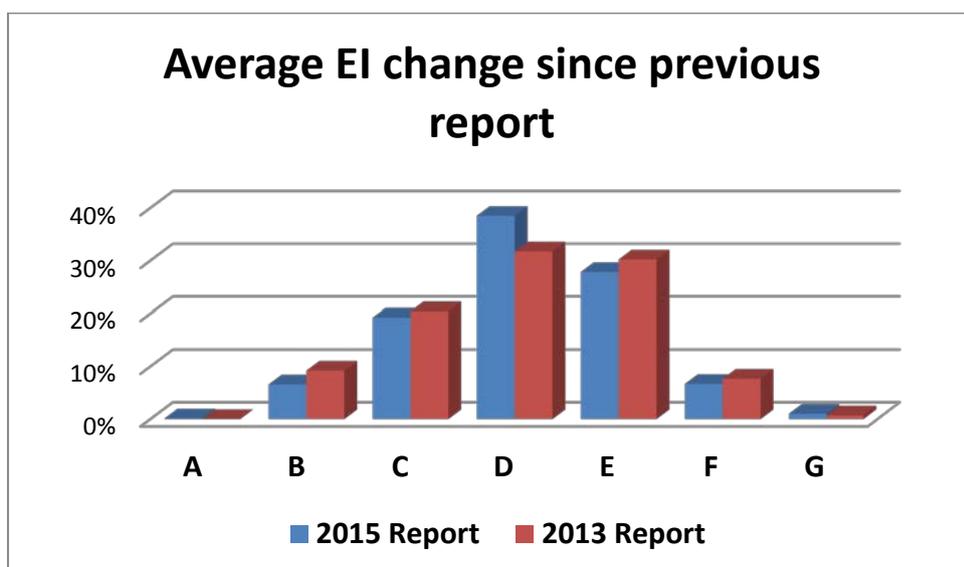


Over the last 2 years since the previous report was published, the data indicates that the proportion of homes in the least energy efficient bands has reduced with a big increase in the proportion of the more efficient band D properties.

EPCs also provide an Environmental Index (EI) to indicate the impact a home has on the environment. Band D is considered average with bands E, F and G having a greater adverse impact.



In terms of the Environment Index, there are fewer homes in Solihull in the worst categories of band F and G and more homes in band D and E compared with the West Midlands and England average.



There has also been a further reduction since the previous report in homes in the E and F bands and an increase in band D homes. (Data source: DCLG Dec 2014)

Renewable Energy Generation (www.renewablesandchp.ofgem.gov.uk)

The government introduced a Feed in Tariff (FIT) scheme in 2010 to encourage an increase in locally generated electricity. This has recently been extended to renewable heat generation through the Renewable Heat Incentive (RHI).

Technology	Domestic installations	Installed capacity	Other installations	Installed capacity	Total installations	Installed capacity
Photovoltaic	1126	3.9MW	21	0.6MW	1147	4.5MW
Micro CHP	3	3.9kW	0	0	3.9kW	3.9kW

Total installations in Solihull Jan 2010-Dec 2014

(Source- Ofgem)

Since the previous HECA report (March 2013) there have been 345 domestic, 8 commercial and 2 community photovoltaic installations with a total installed capacity of 1.71MW. To date, this represents 2.5% of the West Midlands total renewable energy generation of 177.74MW.

The Council will continue to support schemes that promote and install energy saving measures in homes and particularly engage with energy suppliers delivering ECO support to communities wanting to get involved in installing renewable technologies.

5. What has been done in the last two years?

As home energy efficiency cuts across many Council functions (e.g. Housing, Economic Development, Public Health) we look to secure support from officers from across the Council as well as a range of external partner agencies including:

- Act on Energy (service level agreement)
- British Gas (ECO funding)
- E.on (ECO funding)
- Encraft (Innovate-UK funded 'Scaling Up Retrofit' Pilot Project)
- AgeUk (Winter Warmth Campaign)
- Greater Birmingham and Solihull Local Enterprise Partnership

In addition the Council is working with major local employers (Jaguar Land Rover, Birmingham Airport, the NEC, EH Smith) through a regular Sustainability Forum to promote energy efficiency to their workforces which includes energy efficiency as part of its action plan.

The Authority is a member of the Local Authority Consortium Group which identifies and shares best practice in energy efficiency with the other authorities in Warwickshire, Worcestershire and Coventry. This has been active since 1998 and now includes 11 Energy Conservation Authorities and 2 first tier authorities and gives the member authorities the opportunity to replicate successful projects which have proven benefit in improving energy efficiency. We are also an active member of the regional Sustainable Housing Action Partnership.

The Authority is also represented on the Carbon Action Network (previously the HECA Forum) by Act on Energy who also chairs the West Midlands CAN and reports to all regional members.

The Council continues to work with Act on Energy (an independent Energy Efficiency Advice Centre) to provide a free local energy advice service to householders in the area and promote national initiatives and devises local energy saving projects.

The council has and will continue to promote local initiatives with insulation contractors accessing funding from energy suppliers and will refer appropriate residents to national and local schemes.

The Council employs a full-time Home Energy Conservation Officer (HECO) who works proactively with stakeholders both within and outside the Council and extensively with Solihull Community Housing (SCH) an arms-length management organisation that manages social housing on behalf of the Council. Together they have a successful track record in securing ECO (previously CERT/CESP) funding for energy efficiency improvements in social housing.

The HECO is engaged in continuous negotiations with the utilities and potential ECO providers to secure the most economically and environmentally-attractive area-based schemes for the borough. He also ensures that the objectives of the national providers and schemes are balanced and applied in line with locally-agreed political objectives and commitments.

High rise heating & external wall insulation

In partnership with British Gas, SCH has completed the installation of external cladding to 31 high rise apartment blocks in North Solihull. This represents an investment of £11m. A further scheme for replacing electric storage heating with biomass fuelled district heating in 23 blocks, valued at £12m, will be completed by April 2015.

The biomass system is much more efficient and controllable than the storage heaters and homes will be cheaper to heat. Residents are also able to track their pre-payment credit and energy usage on a wall mounted meter. It is hoped this will help them to manage their energy use more effectively.



(Over cladding of Mansfield House and Bangor House, Chelmsley Wood)

This work is supported by a fuel tariff and energy supplier switching information and support programme to ensure that residents make the most of the energy efficiency measures installed.



(Biomass boiler plant - Warwick Court)



(Biomass boiler plant external view - Warwick Court)

SCH is also able to claim renewable heat incentive payments for the heat generated by the biomass boilers, providing a regular income to support the on-going running costs. The new biomass heating systems, taken with the over cladding is projected to increase the SAP rating of the apartments from 54 to around 80.

Improvements to low-rise properties

Whilst the focus to date has been on the high rise blocks, SCH's Asset Management Strategy identifies a clear need to improve the energy performance of low rise properties. SCH have installed new heating in 980 homes, 662 homes have new windows and 216 lofts have been insulated. SCH completed the first low rise over cladding scheme on 19 Wimpey-no-fine bungalows. This is a non-traditional construction with single skin walls, meaning that it will really benefit from the new wall insulation. This project attracted ECO funding to the value of 75% of the total project cost.



(External Wall insulation to bungalows in Auckland Drive Smiths Wood)

Comprehensive low-cost refurbishment of apartment blocks

In partnership with Encraft, the Council and SCH have engaged in a pilot project funded by Innovate-UK to re-clad one of our apartment blocks in north Solihull with a highly energy efficient 'wrap around' solution aiming to reduce energy bills by more than 60% for residents. The technique is specifically designed to provide employment opportunities for local apprentices, and uses straightforward construction techniques and materials to keep costs down. A high degree of attention to detail in design and installation is used to secure energy efficiency benefits. The project includes careful monitoring of the building performance and tenant satisfaction before and after the refurbishment, and if successful will provide an economic model which might be rolled out across many more similar blocks in the area.

Renewable energy technologies

SCH undertook a pilot programme to install renewable energy technologies to 27 homes, across a range of different archetypes. This was done on a pilot basis to see how well the renewable technologies worked. The installations included air and ground source heat pumps, solar panels and external cladding. The project attracted £93k of external grant funding.



(External Wall Insulation and Solar Thermal in Barston, Solihull)



(Air Source Heat Pump in Shirley, Solihull)

SCH also carried out a specialist one off project to install a range of renewable technologies and energy saving measures in one property. This included a ground source heat pump and solar hot water system. Renewable heating clearly has a carbon saving value and they are currently considering other suitable systems for off gas grid properties.

SCH installed solar PV on seven of our low rise blocks of flats which also generate electricity for the communal areas.

Building new homes

Energy improvement works are not just confined to the existing stock. It is important that any new homes are built to energy efficient standards and incorporate features that provide lower running costs and save carbon. SCH have incorporated renewable energy technologies into new build schemes across the borough with PV installed in 45 homes and solar thermal in 11 homes.



(An example of Solar Thermal installations in newly built social rented homes)

The Council's **Local Plan** includes policies to encourage appropriate deployment of decentralised energy and heating networks on new developments where viable. Where the large measures are not feasible or viable, developments should incorporate on-site measures, featuring design, energy efficiency and renewable energy generation.

Winter Warmth Campaign

The Solihull Partnerships Winter Warmth Campaign continues to support the most vulnerable during the winter months providing:

- Timely support and assistance to vulnerable residents to prevent crisis occurring.
- Emergency equipment and assistance when heating breakdown occurs
- A referral mechanism to a range of services provided by internal and external partners.
- A proactive approach to targeting those most at risk during the coldest periods.

With the aim of:

- Identifying and supporting those in Fuel Poverty
- Reducing Excess Winter Mortality rates in Solihull
- Reducing admissions and supporting timely discharges from hospital.
- Helping professionals to support their client groups.

The campaign is led and co-ordinated by the Council and AgeUK Solihull, with a wide range of local organisations coming together as a partnership to deliver the campaign to vulnerable households of

all ages. Since 2012, and with financial support from Scottish Power a scheme co-ordinator has recruited and arranged training for volunteers who are able to offer home visits and one to one support to vulnerable residents. As well as providing general energy efficiency advice to residents they also look at changing tariff, fuel switching and other income maximisation including claiming the Warm Homes Discount.

Green Deal

To maximise the early potential for Green Deal in Solihull we managed the Green Deal Pioneers project and have considered our further involvement either as a Provider, Partner or have a facilitating/ promoter role. We held Green Deal Stakeholder events in October 2012 and May 2013, and found that a partnership approach would allow the potential to get the most out of Green Deal and ECO without many of the associated risks and costs.

Discussions were held with prospective partners but as the anticipated interest in Green Deal did not materialise these discussions did not result in a partnership agreement.

Our approach to Green Deal is to provide residents with impartial advice and access to a Green Deal provider via our partnership with Act on Energy. We will continue to encourage our residents to use this and ECO funding to improve the homes and in turn this would encourage local service providers and contractors to use this as a platform to grow their businesses and increase local employment opportunities.

Fuel Poverty

Traditionally, fuel poverty has been assumed to exist where a household needs to spend 10% or more of their income on energy. On this basis homes in fuel poverty in Solihull had reduced from a peak in 2009 of 21.3% to 13.8% in 2011, and less than the England average of 14.6%.

In 2012 the definition was revised to consider a more complex model linking low income with a high household energy requirement. The latest government statistics are for 2012 and indicate that Solihull now has 10.7% homes in fuel poverty which is slightly more than the England average of 10.4%, but significantly less than local comparisons of the West Midlands at 15.2%.

6. Plans for the next two years

The Council will continue to take evidence based approaches when considering which energy efficiency projects will deliver the greatest benefit for residents. The data available from EPC's will be invaluable going forward and is already helping to prioritise areas of work. The information contained in Appendix 2 (EPC data since 2013) shows that there is scope for works to un-insulated cavities and loft top ups to a large number of homes in Solihull.

Consequently, we will continue to work with partners to provide information and advice to residents around easy to install energy efficiency measures as well as the more intrusive and costly measures.

There are a number of exciting work streams that we hope to deliver/develop over the next two years. These include:

- A project to install up to 4,600 low- rise social housing properties with Photovoltaic panels (PV), providing tenants with free electricity during the daytime.

- Completion of the high rise biomass fuelled heating replacement programme and the support services provided to residents.
- Developing a Collective Switching scheme with a reverse auction being held in Autumn 2015.
- Working with partners to encourage home owners to utilise the Green Deal Home Improvement Funding to increase the energy efficiency of their homes in particular those requiring External Wall Insulation.
- Work with and offer support to Private Landlords in Solihull in particular those with dwellings that have a poor SAP rating. Colleagues from Housing and Environmental Protection will assist in this work.
- Continue to offer training to front line staff and residents to ensure that home energy efficiency remains high in people's thoughts and we are able to provide the support that residents require.
- Develop a larger external cladding programme with SCH for low-rise stock. The initial focus will be improving Wimpey-no-fine system built homes which we know are not very energy efficient.
- Further EWI works including some of the older traditional properties in the south of the Borough.

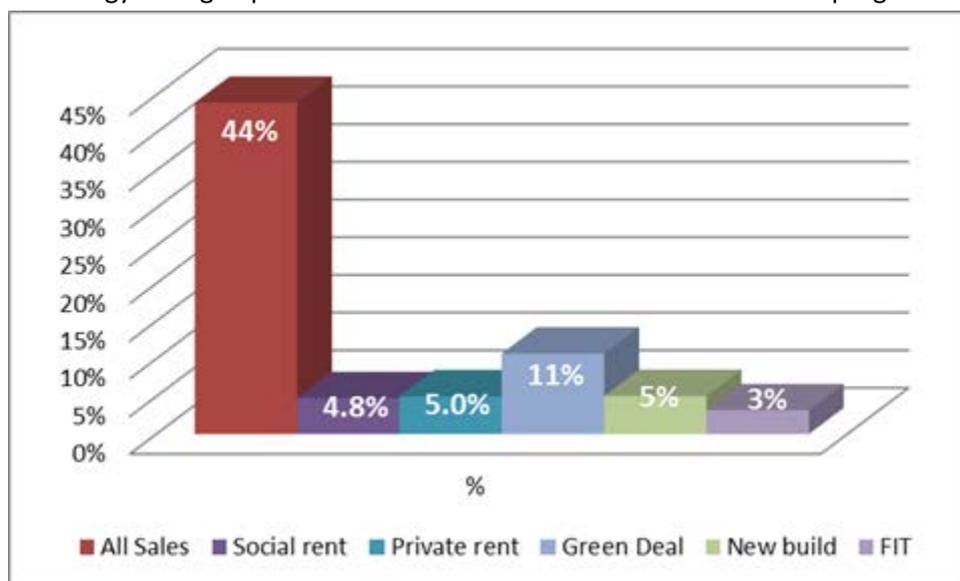
Appendix : i Energy Efficiency Action Plan

Scope	Target/ Activity	Timing
Increase use of renewables	A project to install up to 4,600 low rise social housing properties with Photovoltaic panels (PV), providing tenants with free electricity during the daytime.	2015/17
	Completion of our high rise biomass fuelled heating replacement programme in 23 blocks and the support services we are providing for tenants.	2015/16
Address fuel Poverty through income maximisation	We will be looking to develop a Collective Switching scheme with a reverse auction being held in Autumn 2015.	October 2015
Increasing energy efficiency through insulation	We are working with partners to encourage home owners to utilise the Green Deal Home Improvement Funding to increase the energy efficiency of their homes in particular those requiring External Wall Insulation.	2015/16
	Install External Wall Insulation in social housing (minimum of 50 low rise dwellings) targeting concrete (no fines) walled homes.	
Private Landlords	Work with and offer support to Private landlords in Solihull in particular those with dwellings that have a poor SAP rating	2015/16
Community Energy	Ensure appropriate support is available to communities via Act on Energy that wish to become involved in: <ul style="list-style-type: none"> • Generating energy (electricity or heat) • Reducing energy use (saving energy through energy efficiency and behaviour change) • Managing energy (balancing supply and demand via use of smart meters and grids) • Purchasing energy (collective purchasing or switching). 	2015/16
Training	We will continue to offer training to front line staff and residents to ensure that home energy efficiency remains high in people's thoughts and we are able to provide the support that residents require.	2015/16

Appendix: ii

Energy Performance Certificate data - (Data sourced from Landmark- EPC large data pack)

The Council has obtained the large data set for all EPCs produced, but the following analysis is based on data collected in the last 2 years since the previous HECA report was published. This should give a more accurate assessment of the current characteristics of homes in the area. Although this may not be a representative sample it nevertheless provides a useful insight into the opportunities remaining for energy saving improvements and as such will inform future work programmes.



The 13,901 EPCs carried out since 2013 state the reasons they were produced, with 44% needed for private house sales. The EPCs for Green Deal represent 11% (1,487) of the total and the follow-up EPC, required after a Green Deal installation, is just 7% (103) of the Green Deal total.

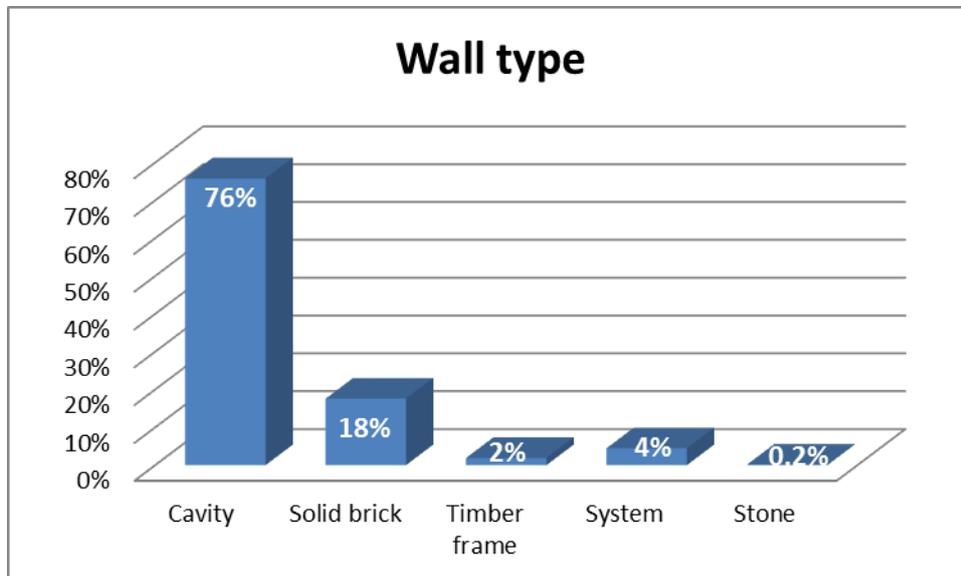
Potential Improvements

Average Characteristics	current	potential	% change
Number of EPCs assessed	13901		
Energy Efficiency band	D	B	
Environmental Index band	D	C	
SAP rating	61	81	32%
Environmental Impact	59	80	35%
Energy consumption	254	120	-53%
CO2 emissions (tonnes)	4	2	-52%
Heating cost (£)	759	514	-32%
Hot Water cost (£)	150	90	-40%
Lighting cost (£)	84	54	-35%
Total energy cost (£)	993	658	-34%

The table above gives the average results from the sample of 13,901 EPCs, showing that the average SAP rating is 61 (band D). It also indicates that with improvements this could increase to SAP 81 (band C), and shows that the energy consumption and CO2 emissions could be reduced by over

50% with a consequent reduction in energy cost of 34%. This suggests there is still significant opportunity to improve homes based on the latest EPC data.

External Wall options

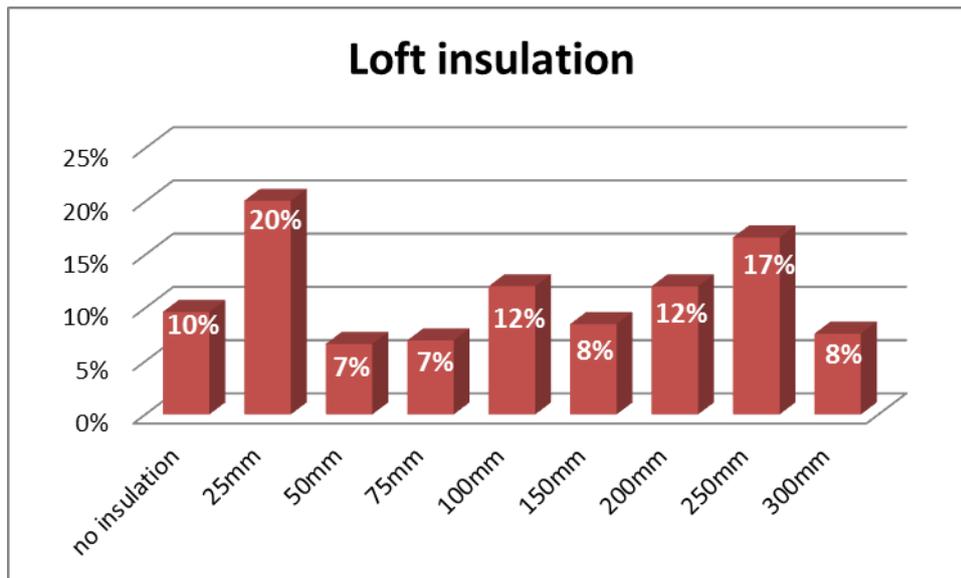


The sample shows that 76% of homes have cavity walls and 49% of these are un-insulated. Whilst not all cavity walls can be improved by cavity fill, a significant number can and this will be a target for local promotion supported by ECO where available.

With only 18% of homes having solid walls, insulation methods for these are much more expensive but very effective. Almost 93% of solid wall homes are shown as un-insulated. This would be a popular improvement if sufficient resources were available to make it affordable. This is shown by the demand for the Green Deal Home Improvement Fund (GDHIF). A much bigger funding pot needs to be made available to satisfy demand, preferably allocated through each local authority, to ensure a fair distribution.

Roof Insulation Options

The other main areas for thermal improvement are roofs. In the sample, 97% of roofs are pitched with lofts, 1% has a room in the roof and 2% have flat roofs. Whilst flat roofs are best insulated when the waterproof covering is renewed, rooms in the roof pose a particular problem with a lack of access. However the bulk of roofs have a loft and over half of these have 100mm or less insulation. These roofs would benefit from additional insulation, especially the 10% that have no insulation at all. This is an area for increased promotion to assist those who use their lofts for storage and help clear them for insulation to be added, even if this means providing raised platforms. The benefit of increasing the thickness of loft insulation where 150mm or more is already present is limited and funds may be better devoted to other energy saving measures.



Some insulation measures are particularly expensive in terms of energy saving and that includes double glazing. The EPCs indicate that 99% of the homes surveyed already have part or all double glazing. This is a particularly desirable measure for households but the main reason is unlikely to be to save energy and it is likely that replacement will continue without additional promotion or support.

Space Heating Options

The greatest energy consumption in most homes is through space and water heating and high efficiency boilers make a significant difference to the heating costs.

In Solihull borough 86% of homes have a boiler system serving radiators or under floor heating, 6% use electric storage heaters and 3% use room heaters, 3% use warm air heating and 1% have no fixed heating at all.

Also from the EPC data, 89% of homes use mains gas for space heating, 9% use electricity and 1% oil with around 1% using LPG and solid fuel. This is a much higher proportion for mains gas than many areas.

Given that the life expectancy of a boiler is usually between 10 and 20 years and high efficiency replacement boilers have been required by the Building Regulations since 2005, most boilers will have been renewed without the need for further promotion. However, this is a reasonably expensive measure and will only normally be undertaken as a distress purchase when the old boiler fails. Financial support may be required for low income households and these will be assisted to access ECO or Green Deal funding.

As well as requiring high efficiency replacement boilers, the Building Regulations also requires the heating system controls to be upgraded at the same time. The requirement is for time and temperature control of heating and hot water circuits, with bedrooms controlled separately from the rest of the house. 54% of homes with boilers already have the required controls and the remainder will be upgraded when their boiler is renewed as required by the Building Regulations.

Lighting

Following on from the previous Energy Efficiency Commitment programme, where energy suppliers provided free compact fluorescent lamps (CFLs) to many households and these were given away freely at many energy events in the community, most homes already use some low energy lights. This process achieved a high penetration of CFLs in homes despite the known issues of lower light output, slower response and the general dislike of the appearance of the bulbs.

EPCs also collect data on fixed lighting and 81% of the homes surveyed have some low energy lights fitted although only 12% had all low energy lights. This is a relatively low cost and particularly cost effective improvement and easy for the householder to implement.

The latest generation of low energy bulbs (LEDs) are even more efficient and long lasting with an appearance and characteristics similar to incandescent bulbs. The current cost of LED lighting will slow the change to this technology, but when the cost benefits are explained in terms of payback, they become more acceptable.