

South Bucks Local Development Framework

Assessment of the Scope for Promoting Energy Efficiencies in the Existing Housing Stock

March 2010



South Bucks
District Council

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Section 1 Introduction & Methodology

Introduction

1.0 The Government through the Climate Change Act 2008 has set ambitious legally binding targets to cut UK carbon emissions by 34% by 2020 and at least 80% by 2050. Through the Low Carbon Transition Plan, the Government aims to cut carbon emissions by 29% on 2008 levels in the housing sector by 2020. Reducing domestic emissions by 29% using energy efficiency measures could cost nearly £50 billion, but the resulting savings in household fuel bills would equal the investment in just only eight years¹.

1.1 This report presents evidence and outlines why South Bucks District Council Core Strategy requires a policy that would seek to increase energy efficiency measures across the existing housing stock through the planning process. The policy would be similar to the policy that is used currently by Uttlesford District Council to achieve the same ends, by retrofitting energy efficiencies as a condition of any application to convert, or built an extension to, an existing dwelling.

1.2 Such a policy is necessary in South Bucks because:-

- the bulk of housing comprises existing stock which will be standing in 2050
- there is evidence to suggest that South Bucks has one of the highest per capita carbon footprints in the UK
- there is limited scope to achieve energy efficiencies through new housing as the Council has already delivered (or granted planning permissions for) a large proportion of its South East Plan (SEP) housing requirements under the existing Local Plan policies.

1.3 This means that if South Bucks is to start to meet Government expectations in terms of carbon reduction by 2020 and 2050, then energy retrofitting is required. This would need to be delivered alongside other local energy efficiency measures, for example installing renewable energy technologies, as the Government has identified that one measure alone will not be enough to deliver required emissions reductions.

1.4 Given the high per capita energy use in South Bucks, together with the relatively low up take on simple energy efficiencies such as loft insulation, it would seem appropriate that measures could be delivered through the planning process. Retrofitting energy measures would sit comfortably with and support recent proposals the Government has outlined in its National Strategy for Climate Change and Energy for carbon emissions reductions.

The Relevance of the Uttlesford Policy

1.5 In 2005, and as part of their Local Development Framework (LDS), Uttlesford District Council prepared a ground breaking Supplementary Planning Document (SPD) on home extensions. Whilst the majority of their SPD is standard planning advice on home extensions, a section on energy efficiency details best practice, and standards expected for energy efficiency on the extension. At the same time, the SPD required the householder to implement energy efficiency measures to be carried out on the existing

¹ The National Heat and Energy Strategy, 2009, The Low Carbon Transition Plan

house as a condition for planning consent². It is estimated that around 1,400 extensions have been affected by the energy reductions retrofitting policy. Uttlesford Council estimates that the required measures will result in annual emissions savings of 398 tonnes of CO₂ and fuel bill savings for householders across the District area of over £72,000³.

1.6 This report sets out evidence as to why a retro fitting policy such as the one established by Uttlesford District Council would be appropriate across South Bucks District and, therefore, relevant as a policy in the emerging Core Strategy.

Methodology

1.7 Desk research was undertaken to ascertain:-

- the key planning policy drivers surrounding energy efficiencies and retrofitting domestic housing
- the numbers of South Bucks housing permissions statistics compiled using gross housing permissions and one for one replacements by financial years 2006/07 2007/08 and 2008/09
- the numbers of home extensions and conversions across South Bucks comprising data from financial years 2006/07 2007/08 and 2008/09. 'Plan alteration' permissions were removed from the data so as to provide a more realistic profile of numbers of extensions / conversions
- the take up of simple energy efficiency measures across South Bucks from the Energy Savings Trust's (EST's) Home Energy Efficiency Data Base (HEED).

1.8 Comparisons between the data sets were then undertaken to provide:-

- a percentage of energy use reductions from householder energy efficiencies across South Bucks
- a picture of the typical energy efficiencies across South Bucks

Report Content

1.9 The report is divided into three sections:-

Section 1

Section 1 sets out the Introduction, Methodology and the relevance of Uttlesford and its retrofitting policy (above).

Section 2

Section 2 details key policy drivers together with local evidence to suggest the necessity and plausibility of energy efficiency retrofitting measures across South Bucks and delivery through the planning framework.

Section 3

Section 3 sets out the conclusions and recommendation of the report.

² Supplementary Planning Document – Home Extensions, Uttlesford District Council Local Development Framework, November 2005

³ Lofty ambitions the role of councils in reducing domestic CO₂ emissions, Audit Commission, October 2009

Section 2

Managing Energy Efficiencies in Existing Housing for Changing Climate

Background and Key Policy Drivers

The UK Perspective and Targets on Carbon Emissions Reductions

2.0 The Government through the Climate Change Act 2008 has set ambitious legally binding targets to cut UK emissions by 34% by 2020 and at least 80% by 2050. Through the Low Carbon Transition Plan, the Government aims to cut carbon emissions by 29% on 2008 levels in the housing sector by 2020. Reducing domestic emissions by 29% using energy efficiency measures could cost nearly £50 billion, but the resulting savings in household fuel bills would equal the investment in just only eight years⁴.

2.1 By 2050 two thirds of UK homes will have already been built, so existing homes need to be much more energy efficient, as they will comprise the largest proportion of the housing stock for the foreseeable future. The Government has recognised that to ensure that the scale of change needed is achieved, then energy standards in every type of housing need to be raised⁵.

2.3 A recent Audit Commission report⁶, advises that whilst home energy efficiency has improved there is still much more to do. Nationally, the Government is committed to longer term plans to refurbish existing houses, with energy efficiencies through a 'whole house' approach. This includes up front energy saving measures, whilst paying back costs through savings on energy bills.

2.4 This is further supported via opportunities for local people to manage and monitor their energy use through SMART meters which are spearheading energy reductions. SMART meters let people know exactly how much energy they are using, and what they are spending on it, and this will encourage behavioural change. This in turn ensures action following energy efficiency advice.

2.5 There are likely to be changes in the Planning Policy Statement (PPS) Supplement 'Planning and Climate Change' to PPS 1 on Sustainable Development. This would aim to further encourage Local Planning Authorities to facilitate cost-effective community scale infrastructure to reduce CO₂ and meet future energy requirements.

UK Planning and Climate Change

2.6 The Planning White Paper 2007⁷ emphasised the need for the planning system to support the delivery of meeting the timetable for reducing carbon emissions from domestic dwellings.

2.7 This is reflected in 2 key policy areas: -

Planning Policy Statement 1 Supplement; Planning and Climate Change stated that Local Authorities should prepare and manage spatial strategies that make:-

⁴ The National Heat and Energy Strategy, 2009, The Low Carbon Transition Plan

⁵ The National Heat and Energy Strategy, 2009, The Low Carbon Transition Plan

⁶ Lofty Ambitions: The role of councils in reducing domestic CO₂ emissions, October 2009

⁷ Planning for a Sustainable Future, 2007

'A full contribution to delivering the Government's Climate Change programme and energy policies,' and

The Code for Sustainable Homes (CSH), which established the need to:-

'deliver against climate change and other resource issues such as diminishing water supplies, construction waste, biodiversity'.

2.8 The Code is to deliver the Government target that all new homes will be zero carbon from 2016, and this is further supported by the forthcoming changes to Building Regulations (Part L).

The Regional Planning Perspective on Climate Change - The South East Plan (SEP)

2.9 Policy CC2 from the South East Plan (SEP) outlined the need for measures to mitigate against [and adapt to current and forecast] climate change through local planning policy mechanisms, along with encouraging behavioural change. In terms of reducing area CO₂ emissions, a target for 2026 will be established at the first review of the Plan⁸.

2.10 The SEP sets out that mitigation measures to reduce greenhouse gas (GHG's) emissions should be, in the first instance, primarily addressed through greater resource efficiency, including:-

'greater efficiency and carbon performance of new and *existing buildings* and influencing the behaviour of occupants.'⁹

2.11 The SEP, therefore, appears to support the principle of retrofitting existing housing for energy efficiency.

Climate Change in South Bucks - The Local Perspective

2.12 As outlined above, a proportion of carbon emission reductions can be delivered via the Planning system along with other key policy measures, such as encouraging behavioural change at the local level. A key principle outlined in the SEP is to manage resources more efficiently. This, in short means doing more with less, and retro-fitting existing housing for energy efficiencies lends itself to this principle.

2.13 In 2007, the Bucks Strategic Partnership, through the Environmental Task Group, undertook research as to the likely effects of Climate Change across Buckinghamshire¹⁰. A report from the study concluded *inter alia* that:-

- Buckinghamshire had uniformly the highest per capita domestic carbon footprint in the South East
- Decisive action to prepare for climate change must start immediately if Bucks was to start reducing carbon emissions in order to gradually meet the then Government target of 60% carbon emissions by 2050 (target now is 80% reduction).

2.14 The report soundly established that Buckinghamshire would increase carbon emissions in real terms through inaction through the growth agenda alone. It determined that as a necessary first step Buckinghamshire must ensure 'no net increase' in carbon.

⁸ <http://www.southeast-ra.gov.uk/seplan.html>

⁹ Policy CC2 South East Plan

¹⁰ Managing Climate Change in Buckinghamshire, 2007

2.15 The report also recommended that priorities for homes should include:-

- Designing all our new buildings and neighbourhoods to be comfortable in warmer and more extreme weather [adaptation];
- Adapting *existing buildings* and neighbourhoods whenever the opportunity arises - for example, when they are being refitted'

2.16 The report also set out requirement for actions for retrofitting existing housing as being:-

"...particularly valuable to encourage householders to 'think climate' when carrying out major refurbishment, because it is then a relatively small extra cost and effort to (for example) add or upgrading wall, and loft insulation and glazing..."¹¹

2.17 As such, the report supports the reduction of CO₂ via actions for retrofitting existing housing with energy efficiencies.

2.18 The report along with Department of Energy and Climate change (DECC) statistics also determined that South Bucks had the highest per capita domestic carbon footprint of all of the four districts in Bucks with currently 8.4 tonnes per person on average from 2005 to 2007, whereas the other Districts within Bucks have an average per capita tonnage of 6.4.

	Year	Industry and Commercial	Domestic	Road Transport	Total	Population ('000s, mid-year estimate)	Per Capita Emissions (t)
Aylesbury Vale	2005	367	408	347	1,122	170.2	6.6
	2006	359	417	336	1,111	172.0	6.5
	2007	338	408	342	1,088	174.1	6.3
Chiltern	2005	159	272	148	579	89.8	6.5
	2006	158	275	148	581	90.3	6.4

¹¹ Managing Climate Change in Buckinghamshire, 2007

	2007	155	268	149	571	90.8	6.3
South Bucks	2005	218	201	145	564	63.5	8.9
	2006	184	205	145	534	63.7	8.4
	2007	167	199	146	511	64.3	8.0
Wycombe	2005	353	433	250	1,035	161.4	6.4
	2006	351	438	242	1,030	161.3	6.4
	2007	321	424	243	988	161.4	6.1

Table 1 Per Capita Emissions - by Local Authority, Bucks

2.19 It also found that South Bucks also had the lowest Standard Assessment Procedure (SAP)¹² rating by Local Authority in Buckinghamshire where the lower the SAP rating the greater the energy inefficiencies.

Local Authority	Average SAP Rating
Aylesbury Vale	54
Chiltern	52
South Bucks	38
Wycombe	55

Table 2: Private Housing SAP Ratings by Local Authority 2007¹³

2.20 The report suggests that the following are reasons for locally high emissions:-

- Age and condition of housing stock
- Space heating demand
- Occupancy of housing
- Consumer behaviour and affluence (includes fuel poverty)
- Regional climate.

2.21 South Bucks is an affluent district and has a high proportion of large detached properties, with 42.9% of owned housing in South Bucks being detached¹⁴ with on average 6.37 rooms¹⁵, although in recent years a higher proportion of smaller units have been built. High Emissions in South Bucks has also been reflected in the Energy Savings Trust

¹² For a definition of SAP, please refer to Appendix 1

¹³ Managing Climate Change in Buckinghamshire, 2007

¹⁴ Census 2001

¹⁵ Census 2001

(EST) Green Barometer Report III, where it detailed that South Bucks has one of the highest carbon emissions in the UK¹⁶.

2.22 In terms of energy conservation efforts, the Buckinghamshire Study concluded that whilst the top priority is to tackle road transport emissions, the second priority is to reduce domestic gas and electricity use. This is in line with the SEP requirement that mitigation measures to reduce carbon emissions should be primarily addressed through greater resource efficiency¹⁷. This is further supported by the EST, which concluded that existing UK domestic housing stock alone creates 27 % of the UK's carbon emissions - twice the emissions of commercial and public buildings and five times that of industrial buildings.¹⁸ Energy advice provided by the Energy Savings Trust suggests that it is better to invest in insulation and energy efficiency measures (building fabric) rather than renewables (building services) in the first instance as they tend:-

1. To reduce the need for energy in the first instance
2. To be cheaper, and
3. Not to need replacing frequently.

2.23 Since 2005 DEFRA has assessed local carbon emissions. Table 1 page 6 details per capita emissions in South Bucks. There has been a reduction of 0.9 tonnes per capita for CO₂ emissions between 2005 and 2007 (10% reduction). There is a multiplicity of reasons for this energy reduction, but the key contributors are likely to be the economic downturn compounded by the increasing cost of energy.

South East Plan Housing Target for South Bucks

2.24 The South East Plan housing requirement for South Bucks is to build 1880 new dwelling by 2026, (an average of 94 dwellings per annum) which is the lowest of any local authority area within the South East. A significant scale of new housing development has already been granted planning permission or built in the District. As of 1st April 2009, outstanding planning permissions and dwellings under construction represented 14.5 years of housing land supply¹⁹. This therefore reduces the scope to achieve local CO₂ emissions reductions through new development, as much of the SEP requirement has already been built or granted planning permission under Local Plan policy requirements.

Housing Permissions South Bucks

2.25 Most new housing in South Bucks takes place within existing settlements, and is generally smaller scale in nature, for example, backland development or plot redevelopment. Since 2006, however, the housing supply has been characterised by a small number of large 'windfall' development, for example, the permissions at the William King Flour Mill and Denham Film Laboratories (both in Denham) which have skewed figures

¹⁶ Green Barometer, Issue 3, 2007, see

<http://www.energysavingtrust.org.uk/content/download/21447/80032/file/Green%20Barometer%20three.pdf>

¹⁷ South East Plan, Policy NRM 11

http://www.gos.gov.uk/497648/docs/171301/815607/815696/Pages_from_RSS-3_Section_B.pdf

¹⁸ Energy Savings Trust 2009 <http://www.energysavingtrust.org.uk/>

¹⁹ Calculated using the "residual approach" – South East Plan housing requirement (1,880 units) minus completions in the first three years of the plan period (767 units). Outstanding requirement (1,113 units) divided by the number of years remaining in the Plan period (17) provides the residual annual requirement (65 units). Outstanding planning permissions and dwellings under construction as at 1st April 2009 (953) divided by the residual annual requirement, gives a housing land supply figure of 14.5 years.

significantly. Therefore, a 'Merton- style' policy²⁰ which seeks a percentage of the energy supply to come from sustainable sources, on sets 10 or more units, will have a limited benefit in South Bucks as:-

- Most of the South East Plan requirement has already been granted planning permissions under Local Plan policy
- Most schemes in South Bucks are very small and would most likely fall under the Merton style threshold.

2.26 Given the evidence above, and the high carbon emissions across South Bucks there is a compelling case to reduce emissions through upgrading existing housing stock to meet:-

- National and regional requirements to mitigate against climate change through CO2 reductions
- Managing local resource efficiency
- Actual delivery and change through low cost measure.

²⁰ This refers to a ground breaking policy developed by Merton Council in 2003, which requires that new development generates at least 10% of its energy from on-site renewable energy technologies.

Section 3

Assessment of Energy Efficiencies in Existing Housing Across South Bucks District

3.0 The pattern of residential conversions and extensions that have occurred in the District since 2006 has been assessed. The largest concentrations of conversions and extensions occur in the main parishes of Gerrards Cross and Beaconsfield, followed closely by Iver. Please see Table 3 below.

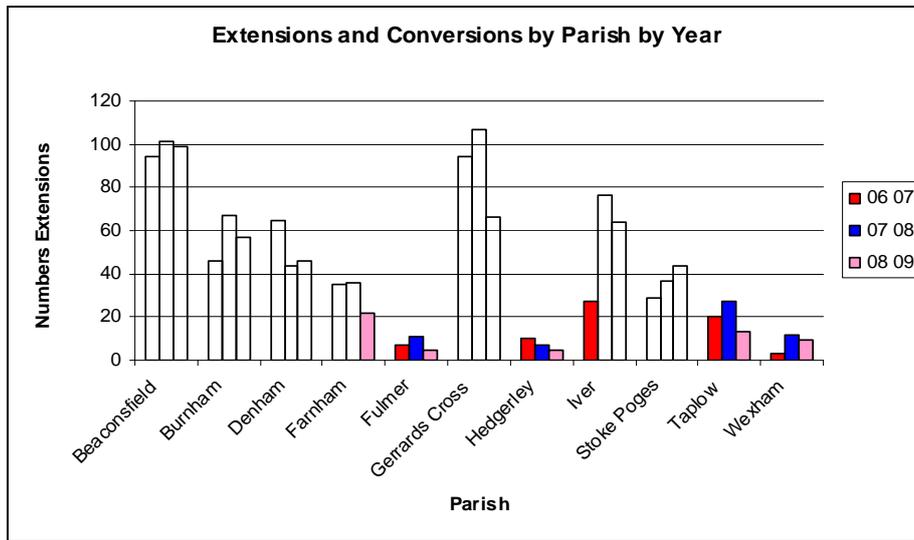


Table 3: Extensions and Conversions by Parish by Year 2006 - 2009

3.1 Over the past three years there have been 2292 new dwellings granted planning permission (including one for one replacements), with 1385 permissions granted for extensions and conversions. In terms of retro-fitting properties, whilst the numbers of new build are higher the extension and conversion process is still very substantial in comparison. Please see table 4 below.

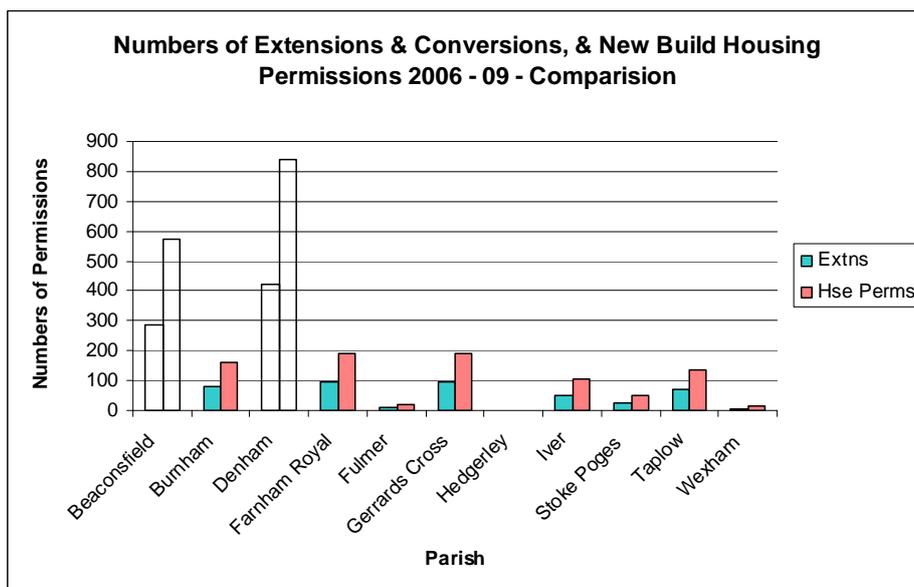


Table 4: Numbers of Extensions and Conversions and Housing Permissions Comparison 2006-2009

3.2 The number of extensions / conversions granted planning permission per annum throughout 2006 to 2009 equals approximately half of the number of permissions granted for new dwellings. Please see Table 4 page 10 above.

3.3 From the three year sample, there is, on average, an annual extension / conversion rate at 462 per annum, please see Table 5 below.

Parish	06 07	07 08	08 09	Total
Beaconsfield	94	101	99	294
Burnham	46	67	57	170
Denham	65	44	46	155
Farnham	35	36	22	93
Fulmer	7	11	5	23
Gerrards Cross	94	107	66	267
Hedgerley	10	7	5	22
Iver	27	76	64	167
Stoke Poges	29	37	44	110
Taplow	20	27	13	60
Wexham	3	12	9	24
Total	430	525	430	1385

Table 5: Numbers of Extensions and Conversions by Parish 2006 - 2009

3.4 From the statistics it can be surmised that for the remainder of the Core Strategy plan period - 2011 until 2026, the number of homes in South Bucks that could positively benefit through a policy to retro fit existing housing with energy efficiency measures, would be 6,930 dwellings, or 26.7% of the existing housing stock²¹. This assumes that the trend for the last three years will continue through to 2026.

Home Energy Efficiency Database (HEED)

3.5 The Energy Savings Trust and Partners have collated statistics on the application of energy efficiencies on existing properties across the UK. Information for HEED is drawn from a wide variety of sources such as obligated suppliers meeting the Carbon Emissions Reduction Targets (CERT), to installed measures such as those through Warm Front and Cocoon to Home Energy Conservation Checks (HECA).

3.6 Information from HEED provides a useful picture of the take up energy efficiency installations across South Bucks, and this is summarised below.

3.7 Numbers of existing dwellings in South Bucks comprise about 25,906²². The total homes in South Bucks in the HEED data base comprise 4,968 (19.17%). Sample information from HEED, is therefore, 19.17% of the total existing housing stock in South Bucks. There appears, therefore, to be significant scope for further energy efficiency measures to be undertaken across existing properties in South Bucks.

Property Types

3.8 From the sample set, all property types are included e.g. flat, end terrace, bungalow, and the highest number represented was detached housing - 913 houses (18.4%), with the lowest being a semi detached bungalow. The detached dwellings are likely to have increased space heating demands over smaller properties. This together

²¹ No's existing houses 25,906 taken from the 2001 Census

²² From 2001 Census – it is therefore an estimated figure.

with increased affluence is likely to have a bearing on increased energy use through elements such as swimming pools, ancillary buildings e.g. stables, and the 'affordability' of energy.

Property Ages

3.9 Property ages recorded in HEED are from before 1900 to post 1995. From statistics available, the highest number of properties are those built between 1959 and 1965 (13.2%) with 'Unknowns' comprising (69.95%). From this era (early 1960s), properties were built with cavity walls (approx 50mm) but are likely to contain no insulation; lofts were likely to have no insulation or a maximum of 50mm glass fibre, which is well below current Building Control part L standards²³. Windows were usually single glazed with frames comprising timber or aluminium, which traditionally have poor air tightness. Installing simple energy efficiency measures such as improved insulation (cavity wall / loft) would improve the energy efficiency of this housing type along with others.

Loft Insulation

3.10 Part L of the Building Regulations also requires that the current minimum requirement for loft insulations is glass fibre @ 270 mm thick. From a data sample of 998 South Bucks homes (93.5%), and where 170 homes are unknown, only 135 homes have the required level of loft insulation (13.5%). 16.8% homes in the sample have loft insulation to a thickness of 100-149 mm, whilst the remaining homes have none at all. Part L of the Building Regulations will be changing to meet the increasingly higher energy standards of the Code for Sustainable Homes in 2013 and 2016. This means, given the evidence above, there will be increasing opportunities to improve the insulation of homes in South Bucks.

Double Glazing

3.11 From a sample size of 4,968 homes, 20% of homes (1,007) were fully double glazed. A further 20% of homes had some or part glazing, whilst the remaining homes (3,112) were likely to have single glazing. This means that it is extremely likely that there will be opportunities to improve home energy efficiency through this measure.

Summary of HEED Energy Efficiency Measures 2006 - 2009

3.12 From between 2006 and 2009 five types of energy efficiency installations have been implemented across South Bucks. From the available statistics, the total numbers of homes comprise 1,712 of which 1,429 (83%) are unknowns (i.e. there is no data on energy efficiency measures). The remaining homes with known energy efficiency installations, however, can be broken down into the following energy efficiency categories, as follows:-

Measures	% Completions
hot water cylinders	1.4
condensing boilers	12.2
non-condensing boilers	1.9
room heaters	0.9
solar hot water (various types)	0.1

Table 6: Summary of HEED Energy Efficiency Measures 2006 - 2009

3.13 The numbers of installations appear to be quite limited, so there are obvious opportunities to upgrade the existing housing stock with energy efficiency measures.

²³ The Building Regulations, L1B, Conservation of fuel and power in existing buildings, 2006

Other Measures

3.15 There are other measures to encourage energy efficiency across South Bucks which are being implemented via the Local Authority, the Energy Savings Trust and Partners and through the energy companies themselves. These measures tend to be for those on low incomes or who are vulnerable such as older people. Please see the table in Appendix 1 for further details of typical local energy efficiency measures.

Section 4

Conclusions and Recommendation

4.0 The number of energy efficiencies currently being delivered through the local mechanisms such as Warm Front is currently limited, and targets in the main, people who are on low income and those who are vulnerable. There are currently no existing energy efficiency measures targeting the bulk of the existing housing stock in South Bucks.

4.1 Much of the housing stock appears to contain energy efficiencies below current Building Control Regulations, (Part L), or none at all.

4.2 If South Bucks is to start to meet Government expectations in terms of carbon reduction targets by 2020 and 2050, as set out in the Low Carbon Transition Plan, then energy retrofitting is required. This would need to be delivered alongside other local energy efficiency measures, as one measure alone will not be enough to deliver the nationally required emissions reductions.

4.3 The report has outlined other compelling national, regional and local requirement to mitigate against climate change for CO₂ reductions, which can be summarised as follows:-

- managing local resources efficiency
- delivering and changing the energy status of homes through low cost measures.

4.4 Given the high per capita energy use in South Bucks, together with the relatively low take up on simple energy efficiencies such as loft insulation, it would seem appropriate that energy efficiency measures could be delivered through the planning system. Retrofitting energy measures would sit comfortably with and support recent proposals the Government has outlined in its Low Carbon Transition Plan, for emissions reductions.

4.5 The report has outlined that about 19.17% of homes have so far been targeted with energy efficiencies, though the picture is incomplete as to how many of those homes have taken up and implemented efficiency measures.

4.6 The report has demonstrated that if energy efficiencies were to be made a conditional part of planning permission for extensions / conversions, then the planning system alone over the remainder of the plan period (2011-2026) would potentially deliver energy efficiencies to 26.7% of the existing housing stock across South Bucks alone.

4.7 Given the high carbon emissions across South Bucks and evidence outlined above, there is a strong case to reduce emissions through upgrading existing housing stock to meet carbon reductions.

4.8 A high proportion of the District South East Plan housing requirement has already been built or granted planning permission; therefore, requiring new housing development to be more energy efficient will have a limited effect on addressing local CO₂ emissions in South Bucks. It is therefore recommended that the Core Strategy includes a policy that encourages homeowners to improve the energy efficiency of their properties through retro-fitting them with simple energy saving measures when granting planning permission

for all conversions and extensions. The measures sought should take into account the character and location of the property.

Appendix 1

Data Source Categories Comprising HEED²⁴

Table 2.1: How data providers fit into different data source categories

Data Source Category	Data Provider	Data type
Energy Supplier	EEC/CERT obligated suppliers & NI EE Levy Scheme	Installed measures and some basic survey data
Fuel Poverty Scheme	Warm Front, Warm Deal, Central Heating Programme, New HEES in Wales, Warm Homes	Installed measures and survey data
Local Authority	Local Authorities National Register of Social Housing (NROSH)	Installed measures and survey data
Energy Saving Trust	EST Home Energy Checks	Householder completed property surveys
Other	CIGA, CORGI, FENSA, LCBP, SCHRI, Clearskies	Installed measures and some basic survey data.

Standard Assessment Procedure (SAP)

The Standard Assessment Procedure (SAP) for energy rating of dwellings is a calculation of a building's energy efficiency. SAP ratings are scored on a scale from 1 to 100 where 1 is the worst and 100 will indicate no heating/hot water cost. It is possible to achieve a higher score than 100 with the use of micro generation exported to the national grid.

²⁴ Heed Online Data Interpretation Guide 1.1



South Bucks
District Council

Capswood, Oxford Road
Denham
Buckinghamshire
UB9 4LH

Tel: 01895 837200

<http://www.southbucks.gov.uk/>