A targeting strategy for domestic energy efficiency in Swale

An action plan to address domestic energy efficiency locally.

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CEN
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This report is part of the Energy Saving Trust Hotspots Innovation Programme, a partnership between 20 Local Authorities in South West London and Kent

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Contents

1. Introduction

This report is a detailed analysis of the potential for domestic energy efficiency installations in Swale, and has been completed in partnership with Swale Borough Council as part of the Energy Saving Trust Hotspots Innovation Programme.

The report provides a profile of the neighbourhoods in the borough where there is most potential for the installation of domestic energy efficiency measures by residents. It is the aim of the report to provide a framework for the coordinated promotion of energy efficiency measures in the borough.

In particular, the report identifies 'HotSpots' for energy efficiency targeting. These area areas where the promotion of energy efficiency measures will be most effective.

1.1 Background: the Hotspots project

The report has been completed as part of the Hotspots project. The project is a partnership of organisations in South West London and Kent with an interest in domestic energy efficiency. The project is designed to bring together the large amount of data that has been collected about domestic energy efficiency in order to target the promotion of energy efficiency measures to residents.

Many organisations in the public sector have responsibilities and commitments to facilitate energy efficiency improvements in domestic homes. Key among these organisations are Local Authorities, regional Energy Efficiency Advice Centres, Energy Suppliers, and the Energy Saving Trust. These organisations typically also collect data to provide tailored advice to householders, or to measure progress towards HECA and other statutory targets. However, the data has typically not been used to target the installation of measures in households.

The Hotspots project meets this opportunity, and will facilitate energy efficiency improvements in domestic homes by collating this householder data in order to find and target the geographical areas with most potential for energy efficiency improvements. The project will also provide match funding to assist promotional activities in each partner borough in terms of part-funding for promotional activity from the Energy Saving Trust and up to 60% subsidies on energy efficiency measures for householders through EDF Energy's Energy Efficiency Commitment funding.

The project represents a partnership between 20 partner Local Authorities and two partner Energy Efficiency Advice Centres with support from EDF energy and

the Energy Saving Trust. The project is part-funded by the Energy Saving Trust until 2006, and aims to provide a framework which the project partners can use for the coordination of the facilitation of energy efficiency improvements in domestic homes.

1.2 Project partners

The project is led by Creative Environmental Networks and the London Borough of Hillingdon, and receives core funding from the Energy Saving Trust. Creative Environmental Networks is a not for profit environmental company that runs the two regional Energy Efficiency Advice Centres in South West London and Kent.

The following organisations are project partners. The project covers the area of the 20 Local Authority partners below.

- Ashford Borough Council
- Canterbury City Council
- Creative Environmental Networks
- London Borough of Croydon
- Dartford Borough Council
- Energy Saving Trust
- Gravesham Borough council
- Kent Energy Centre
- Royal Borough of Kingston upon Thames
- London Borough of Hillingdon
- Maidstone Borough Council
- Medway Council
- London Borough of Merton
- Royal Borough of Richmond upon Thames
- Sevenoaks Borough Council
- Shepway Borough Council
- London Borough of Sutton
- Swale Borough Council
- Thanet Borough Council
- Tonbridge and Malling Borough Council
- Tunbridge Wells Borough Council
- London Borough of Wandsworth

2. Analysis

The analysis below uses existing datasets to determine the areas of Swale where there is maximum potential for the uptake by householders of domestic energy efficiency measures.

2.1 Summary

The first part of the analysis aims to find the areas of the borough where the domestic housing has high potential for energy efficiency improvements. The analysis has focussed on loft and cavity wall insulation potential (see section 2.1.2).

The analysis has only been possible where there is sufficient Home Energy data coverage, so before the analysis was started the data coverage was investigated (see section 2.2). The analysis concluded that in Swale the data coverage fairly poor: there is sufficient data to conduct a meaningful analysis at ward level, but not for an analysis at census output area level. A census output area is a sub-ward classification, containing approx. 60-200 households as illustrated in Figure 1. Of the 20 boroughs involved in the HotSpots project only 9 have sufficient data for the more detailed study. (Appendix 1 contains suggestions for future data gathering work to make the data coverage uniform in Swale.)

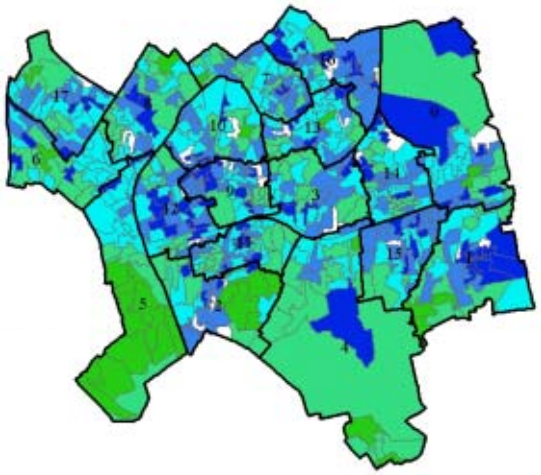

Figure 1: A census output area analysis of LB Sutton, a HotSpot borough with very good data coverage. The figure shows the power of good data coverage.

This analysis of home energy efficiency potential by ward is described in section 2.3, and HotSpot areas at each level are tentatively identified in these sections. The patterns of uninsulated lofts are likely to be quite independent of the pattern for houses with uninsulated cavity walls so the analysis has been conducted in two parts.

The second part of the analysis (see section 2.4) concerns population, housing type, and tenure. The strategy is designed with the overarching aim of reducing CO_2 emissions through improved energy efficiency, and the demographic data has been used to target the 'able to pay'. We are aiming to

target residents with the aim of maximum uptake of energy efficiency measures, so we should seek:

- householders who own or who are buying their home
- householders who have significant disposable income
- householders who live in houses rather than flats.

Census data has been used to produce this population / housing type / tenure analysis. It has then been used as an overlay for the home energy efficiency data: in this section the HotSpots tentatively identified in section 2.3 are confirmed or discarded based on the suitability of the population, housing type, and tenure.

The strategy is not designed to target fuel poverty, although it acknowledges that there is scope for a similar approach to target people who have to use a large proportion of their income to keep their homes sufficiently heated. We aim to publish a sister strategy designed to take this approach before the end of 2004.

2.1.1 Data sources

The data analysis has made use of three main data sources. These are:

- Home Energy Check data, collected by the local Energy Efficiency Advice Centres and owned by the Energy Saving Trust; this data has only been available at ward level, but this may change in future editions of the strategy.
- Home Energy Survey data, collected by the Local Authorities in order to report on the energy efficiency of the borough to the government, and meet their Home Energy Conservation Act (HECA) responsibilities;
- Data from the 2001 Census, available from the Office for National Statistics.

There is potential for additional data to be integrated with the report. Additional Home Energy Survey and Home Energy Check data will increase the significance of the analysis. If original data can be incorporated from the Local Authority's Home Condition Survey this will also increase the significance of the analysis. We are working to progress this work and will aim to incorporate this information into the second editions of these Strategies in 2005.

2.1.2 Choice of energy efficiency measures

Although there are a wide variety of energy efficiency measures available for housing, the study has focussed on loft and cavity wall insulation, as they are both effective and cheap compared with other measures, especially in the present climate of increasing fuel prices. Loft and cavity wall insulation are available to householders for about £300 per measure before subsidies. Through Hotspots, subsidies of 40-60% will be available allowing the measures to pay for themselves within 2-3 years. This makes them suitable

as investment measures, and promotion to householders will result in high takeup.

Measures such as efficient heating systems, double glazing, and solid wall insulation are all comparable with loft and cavity effective in terms of energy efficiency but are typically more expensive by a factor of 4-10. This makes them measures that should be installed during the normal course of household refurbishment and maintenance, rather than as an investment measures. Potential for installation of these measures has therefore been judged outside the scope of this study.

2.2 Data Coverage

The Home Energy data coverage in Swale is reasonably poor.

When the data was collated by ward, the 95% confidence intervals were calculated as being similar to or smaller than the size of the 10 category classification intervals used in the analysis below. However, less than a third of the census output areas in the borough had enough data for the confidence intervals to feasibly allow more than 2 category bands (a census output area is a sub-ward classification, containing approx. 60-200 households). For this reason analysis was not conducted at census output area level.

[Appendix 1 contains suggestions for future data gathering work to make the data coverage more uniform.]

2.3 Housing analysis by ward

The ward level data analysis has been conducted using Home Energy Check data from the Energy Saving Trust and Home Energy Survey data, collected by the Local Authorities. The data is a compilation of data collected between 1999 and 2004.

2.3.1 Cavity Wall insulation

The map (figure 2) and table (table 1) overleaf show the proportion of unfilled cavity walls in Swale by Ward.

The map shows that the cavity wall 'Hotspots' wards are concentrated in a central band of the borough, which has quite a clear divide with the north western and south eastern parts of the borough. The shape of this band corresponds quite clearly with the suburbs of Sittingbourne; an area where one might expect a reasonably high proportion of the type of 1930s - 1970s housing likely to have empty cavity walls.

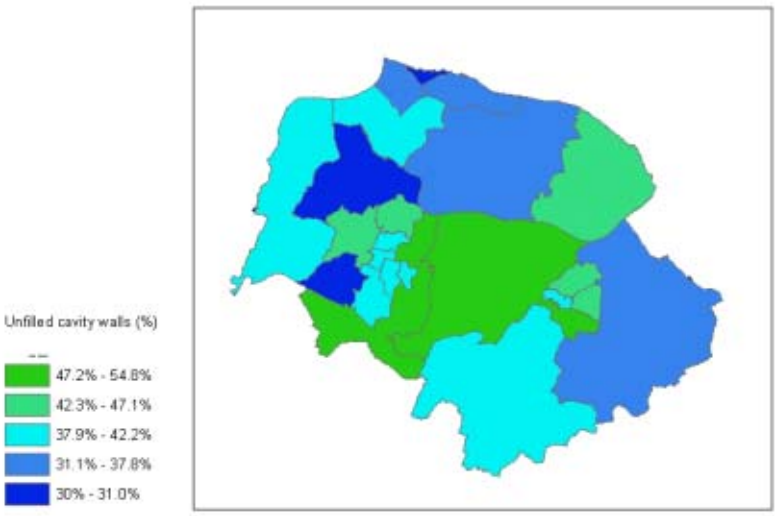

Figure 2: proportion of unfilled cavity walls in Swale by ward

Table 1 shows more specifically that the potential for installation of cavity wall insulation in Swale is very high. A typical borough as analysed through the Hotspots study has cavity wall insulation potential ranging from about 5% to about 35%; Swale's potential ranges from 30% to 54%, making it a borough with very unusually high potential.

Ward Name	Housing with unfilled cavity walls
West Downs Ward	***54%***
Murston Ward	***51%***
Teynham and Lynsted Ward	***48%***
Watling Ward	***48%***
Davington Priory Ward	***47%***
Grove Ward	***46%***
Abbey Ward	43%
Kemsley Ward	43%
Leysdown and Warden Ward	43%
St. Ann's Ward	42%
East Downs Ward	41%
Roman Ward	41%
St. Michaels Ward	41%
Chalkwell Ward	40%
Hartlip, Newington and Upchurch Ward	40%
Milton Regis Ward	40%
Queenborough and Halfway Ward	39%

Woodstock Ward	39%
Minster Cliffs Ward	37%
Sheerness West Ward	37%
Boughton and Courtenay Ward	36%
Sheppey Central Ward	34%
Borden Ward	30%
Iwade and Lower Halstow Ward	30%
Sheerness East Ward	30%

Table 1: proportion of unfilled cavity walls in Swale by ward

Based on this data, the top 6 wards (those with potential higher than 45%) are tentatively designated 'Hotspots'.

2.3.2 Loft Insulation

The map (figure 3) and table (table 2) show the proportion of completely uninsulated lofts in Swale by Ward. The map shows that the uninsulated lofts have a very different pattern from the cavity wall insulation 'Hotspots'. In addition it shows that Swale in general has very well insulated lofts, and no wards have more than 10% uninsulated lofts.

Figure 3: proportion of empty lofts in Swale by ward

Table 2 shows the actual potential for loft insulation by ward in Swale. As with the cavity wall insulation, the potential for installation of loft insulation in Swale is very high. A typical borough as analysed through the Hotspots study has loft insulation potential ranging from about 1% to about 12%; Swale's potential ranges from 6% to 34%, making it a borough with very unusually high potential.

Ward Name	Housing with empty lofts
Sheerness East Ward	***34%***
St. Ann's Ward	***28%***
Chalkwell Ward	***26%***
Abbey Ward	***25%***
Sheerness West Ward	23%
East Downs Ward	22%
Murston Ward	21%
Teynham and Lynsted Ward	20%
Leysdown and Warden Ward	20%
Davington Priory Ward	20%
Queenborough and Halfway Ward	18%
Watling Ward	17%
Grove Ward	17%
Milton Regis Ward	16%
Borden Ward	16%
Hartlip, Newington and Upchurch Ward	15%
Boughton and Courtenay Ward	15%
Sheppey Central Ward	14%
Roman Ward	14%
St. Michaels Ward	12%
Minster Cliffs Ward	12%
Kemsley Ward	12%
West Downs Ward	11%
Woodstock Ward	10%
Iwade and Lower Halstow Ward	6%

Table 2: proportion of empty lofts in Swale by ward

Based on this data, the top 4 wards (those with potential of 25% or greater) are tentatively designated loft insulation 'Hotspots'.

2.4 Demographic analysis

The demographic analysis has been conducted to screen the hotspots identified in the previous sections for the purposes of targeting. The census in 2001 provides a huge variety of demographic information, including information about:

- economic activity of householders
- tenure of households
- type of household (ie houses or flats)

We are ideally seeking:

- householders who can afford to pay for measures
- owner occupier householders

In addition, for cavity wall insulation we are seeking householders who live in houses rather than flats.

In general Swale has a high proportion of householders in the higher income brackets, a reasonable level of owner occupancy, and a very high number of houses rather than flats. This is all positive for the project.

2.4.1 Analysis at ward level; confirmation of 'HotSpots'

Cavity wall Hotspots

All of the tentatively designated cavity wall 'HotSpot' wards have more than 50% owner occupancy, income levels, and proportion of houses. They are all therefore confirmed as Hotspots.

Ward Name	Housing with unfilled cavity walls
West Downs Ward	***54%***
Murston Ward	***51%***
Teynham and Lynsted Ward	***48%***
Watling Ward	***48%***
Davington Priory Ward	***47%***
Grove Ward	***46%***

Table 6: cavity wall insulation 'Hotspot' wards

Loft Insulation Hotspots

All of the tentatively designated loft insulation 'HotSpot' wards have high owner occupancy, and income levels. They are all therefore confirmed as Hotspots.

Ward Name	Housing with empty lofts
Sheerness East Ward	***34%***
St. Ann's Ward	***28%***
Chalkwell Ward	***26%***
Abbey Ward	***25%***

Table 7: loft insulation 'Hotspot' wards

3. Proposed action plan

The Hotspots project has a publicity budget over 2 years to promote energy efficiency measures using the findings in each of the 20 partner Local Authorities. This budget will be divided as evenly as possible between the partner areas.

The action plan below indicates the activities that will be conducted under the Hotspots project. However, it is hoped that the project will provide a framework for complementary activities working with the local authority (and potentially other partners). There is considerable scope for additional activity to link with each of the activities described below. CEN can provide support with this, from providing lists of Hotspot areas not yet mailed, to providing designs and materials, and support with complementary activities.

Timescale
We plan to conduct the publicity in October, November, and early December 2004, to coincide with the onset of winter.

Branding
As demonstrated in this report, the cavity wall insulation hotspots and the loft insulation hotspots are quite different. With this in mind we will be aiming for two discrete messages.

We will be aiming to support the brands currently existing (the Swale council KASH scheme), but we are keen to use an attention grabbing message that links the local area directly. We propose a '(many people in XXX area) haven't got much upstairs' 'teaser' message for loft insulation, and a '(many people in XXX area) have got cavities?' 'teaser' message for cavity wall insulation.

Activity 1: Press releases.
We plan three press releases between October and December. These will be sent direct to local papers, and in partnership with Local Authority press officers.

We hope to be able to work with the councillors of Hotspot wards in press release related publicity activities.

Activity 2: Direct mailings
We plan to write to about 1250 households randomly selected from Hotspot wards in each borough. There would be potential to target additional households with Local Authority support.

Activity 3: Street / outdoor posters
We are planning two or three street / outdoor posters (to be displayed in bus shelters, shopping areas, etc) in hotspot areas. The poster design will be customised to suit the specific area where the poster is located. There would be potential for additional posters with Local Authority support.

Activity 4: Targeting of discrete districts.
We plan to distribute leaflets and small posters and through local distribution points (such as libraries, restaurants, shops) in Hotspot areas of the borough. The posters will be designed with the messages already described, and will be customised to the local area. If the distributions could be arranged by the Local Authority we could divert budget to other activities.

We have not got resources to distribute letters and leaflets to houses in Hotspot areas, but we would recommend this activity in small Hotspot areas, and would provide support with materials.

Activity 5: Advertisements in Local Authority magazines.
We plan to arrange an advertisement and some editorial about the project in the Local Authority magazine.

Appendix 1: Future work

Additional data

Additional data gathering

Of the total 400 census output areas in Swale, the average number of surveys per census output area is 8, but only 117 census output areas have more than 10 surveys: 10 surveys per census output area is an absolute minimum for meaningful analysis. If future data gathering mailings were to concentrate on producing a uniform coverage at this level or higher, data analysis would be possible.

On request we can provide information that would be of assistance in securing uniform data coverage most efficiently, including mailing lists or lists of full postcodes of households to be targeted.

Home condition survey

The Local Authority home condition survey includes information that could be used to increase the data resolution of future strategies. However, we have had compatibility problems with home condition survey databases. If we can access home condition survey data in a suitably compatible format we will incorporate it into the HotSpots project.

Evaluation and future strategy editions

We are planning to publish a second HotSpots strategy in September 2005.

This will include any extra data that we can access in the meantime, and the strategy will also include an evaluation of the energy efficiency promotion outlined in section 3 for the winter of 2003 / 2004. This will give us a good indication of the effectiveness of the HotSpots approach, which may be modified based on the findings of this strategy.