

LOCAL AUTHORITY ACTION FOR ENERGY EFFICIENCY IN HOUSING STOCK

An analysis of energy efficiency data from the
Decent Homes Standard Backlog programme bids

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1. Executive Summary

This paper presents the findings of analysis of energy efficiency data supplied by landlords with bids for funding from the Decent Homes Standard Backlog programme administered by the Homes and Communities Agency (HCA).

The Decent Home Standard (DHS), introduced in 2001, required social housing stock to meet the standard by 2010. 7% of the 4m social housing properties in England did not meet the DHS at the end of 2011.

The thermal efficiency criterion of the DHS has led to significant improvement in the insulation of social housing stock (BRE 2005), which has a higher average Standard Assessment Procedure (SAP) rating than private homes (English Housing Survey).

In the course of inviting bids for the DHS Backlog funding programme, the HCA collected qualitative data from local authorities and Arms Length Management Organisations (ALMOs) about what energy efficiency work they have carried out and are planning.

Data obtained demonstrates that energy efficiency programmes are integrated with DHS programmes; how work is funded; the scale of works; and attitudes towards the proposed Green Deal mechanism. It reveals landlords' aspirations, the challenges they face, the drivers for energy efficiency at local authority level, and their achievements.

The data contains important lessons for the development of strategies to improve energy efficiency of managed social housing stock.

2. Introduction

The policy drivers and mechanisms for the improvement of energy efficiency in social housing are the DHS, and the requirements for energy companies to reduce carbon emissions in customer's homes.

2.1. The Decent Home Standard

In 2001 the Government introduced a requirement that all social housing should meet the DHS, and this now forms part of the social housing regulator's "home" standard. The DHS applies to occupied, managed housing stock owned by social landlords. Across the social sector there were 272,000 non-decent homes on 1 April 2011, 7% of total stock.

To comply with the DHS, homes must meet four criteria: they must be:

- a) free of Category one hazards under the Housing Healthy and Safety Rating System (HHSRS)
- b) in a reasonable state of repair. To fail under this category, one major component or two minor components would be both old and in a poor state of repair
- c) reasonably modern: no more than three of: kitchens older than 15 years, bathrooms older than 20 years, poor internal layout, external noise transmission, flats with poor communal layouts
- d) reasonable thermal comfort, defined as individual heating controls, at least 50mm roof insulation or cavity wall insulation where applicable.

2.2. Funding mechanisms

By 2010/11 a number of social landlords, in particular in the local authority landlord sector, had been unable to achieve the standard, because of stock condition and funding constraints, and £1.6bn was allocated for a DHS Backlog programme

through the 2011-15 Comprehensive Spending Review. The HCA is responsible for allocating and administering this programme, which is open to local authority landlords, both those that have retained management of their housing stock and those operating an ALMO. The HCA was able to include a question about energy efficiency practices in the documentation inviting bids for DHS Backlog programme funding.

The history and achievements of the Decent Home Standard Policy are comprehensively described in the House of Commons Communities and Local Government Committee report *Beyond Decent Homes Fourth Report of Session 2009/10*.

2.3. Energy efficiency incentives: the supplier obligation

Under the Energy Efficiency Commitment (EEC), introduced in 2002, electricity and gas suppliers with more than 50,000 domestic customers were required to achieve energy savings of 62TWh by 2005, by means of assisting customers to implement energy saving measures in their homes.

The first phase ran until 2005, and it was extended until 2008, when it was replaced by the Carbon Emissions Reduction Target (CERT). As suppliers had to ensure that at least half of the savings were achieved by households in receipt of income related benefits and tax credits, social landlords were able to benefit from EEC and CERT, typically to fund insulation (Meeting the Decent Home Standard, Housing Corporation Sector Study April 2007).

In 2008, the EEC was replaced by the CERT; originally intended to run to 2011, it was extended to 2012. CERT introduced a higher target of CO₂ reduction, and increased the focus on insulation measures. It has been accompanied by the area based Community Energy Saving Programme (CESP), which promotes a whole house and a street by street approach, in order to enable efficiencies of scale. Only homes in the 10% most deprived area in England are eligible, defined as the bottom 10% Lower Super Output Areas (LSOAs) in the income domain of the Index of Multiple Deprivation (2007).

2.4. Government policy for retrofit: Energy Act 2011

The Energy Act 2011 incorporates provision for the Green Deal. This is a mechanism based on the Pay As You Save principle, whereby the installation of energy efficiency measures is financed by Green Deal providers, and recovered by payments collected by the energy supplier. The cost recovered is intended to be less than the savings in energy costs that will result from work carried out (the Golden Rule). It is expected that for hard to treat properties and vulnerable households, this will have to be supported by a new Supplier Obligation, to be known as the Energy Company Obligation (ECO). Consultation on the detail of the Green Deal mechanism was held from 23 November 2011 to 18 January 2012.

3. Previous studies

The English Housing Survey 2009 report finds that social housing stock is the most energy efficient:

“In 2009, the mean SAP¹ rating for the whole stock was 53 although this varied considerably for different types of stock. The most energy efficient dwellings were those owned by housing associations (62 SAP points), local authorities (60)”²

Research carried out by the Building Research Establishment (BRE) considered measures to meet the thermal efficiency criterion adopted by local authorities to implement the Decent Home Standard³.

The research found that:

- “The vast majority of social landlords are carrying out work well in excess of the thermal comfort standard with 90% planning to install both cavity wall insulation and loft insulation in homes with gas or oil programmable heating. The survey estimates that by 2010 around 85% of lofts in social rented homes will have at least 200mm of insulation.”
- “EEC has made a very important contribution to achieving the thermal comfort standard and other energy targets from 2001-2005 by joint funding of projects; particularly for cavity wall and loft insulation. However, a considerable amount of improvement has taken place without it. “ (Davidson M 2007)

¹ Standard Assessment Methodology, the methodology developed by the Building Research Establishment to measure the energy efficiency of homes.

² Para 6.2, “English Housing Survey Housing Stock Report 2009”, *Department for Communities and Local Government*, 2009 <http://www.communities.gov.uk/documents/statistics/pdf/1937212.pdf>

³ [Implementing Decent Homes in the Social Sector](#)

4. Methodology

In the allocation process for the DHS Backlog programme, the HCA collected information about what energy efficiency works landlords have carried out and/or plan to undertake to their housing stock.

The bid form asked whether landlords have undertaken energy efficiency work to their stock (over and above the thermal efficiency criterion in the DHS); what work they plan to carry out and what standards or targets they are adopting; what funding they have secured; whether they have any feedback on the operation of the CERT and CESP schemes; whether they plan to consider playing a role in the Green Deal; what their views are on the design of the Green Deal, and what they may be able to achieve if their views are taken into account.

The questions are reproduced at Annex 1. Seventy landlords returned bids and most of them supplied information in response to some or all of the energy efficiency questions.

The sample is self selected and comprises landlords and ALMOs that bid for DHS Backlog funding.

Data was obtained in a qualitative format. In some instances information was supplied about numbers of properties treated and costs. This was not supplied to a sufficient extent nor requested in a format that would allow significant quantitative analysis.

In order to analyse the data we developed a qualitative framework. We divided the data by topic:

- Authorities' activities to date in undertaking energy efficiency measures to their housing stock.

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- What programmes authorities plan, including costs, funding sources, scale of interventions proposed, standards and timescales.
- Future work planned, funding sources and challenges and synergies with DHS programmes.
- Feedback on the operation of CERT and CESP.
- Attitudes towards the Green Deal.

There was some overlap in responses to questions. Topics were identified and categorised. Findings are described below organised by question group.

The information supplied in response to questions 2, 3 and 4: Energy efficiency measures planned, costs and funding sources: was grouped under ten headings, which were:

- CERT and CESP funding
- Other funding sources
- Measures installed
- Scale of activity
- Cost
- Use of SAP
- Degree to which landlords were exploiting opportunities presented by DHS programmes
- What tenures they are working in
- References to work a) completed and b) underway
- Miscellaneous / other category.

5. Findings

5.1 Energy efficiency works undertaken

Question 1: Have you carried out any energy efficiency works to your stock other than the thermal efficiency criterion in the Decent Home Standard?

A total of 61 landlords responded with descriptions of measures that they have adopted and installed. Nine landlords left this blank or responded with a negative. They range from exceeding the DHS minimum standard through basic but effective and important measures, to installing renewables, pilot projects and behavioural interventions.

The measures included:

- **Micro generation / renewable energy measures:** Installing ground source and air source heat pumps, photo-voltaic, solar thermal.
- **Water efficiency measures:** Installing showers, dual flush WC cisterns and water efficient aerating taps.
- **Fabric energy efficiency measures (insulation):** Loft insulation and cavity wall insulation (CWI), including insulating cladding to high rise blocks and other hard to treat CWI; Double and triple glazing installations and insulated front entrance doors.
- **Behavioural interventions:** Providing comprehensive energy advice and working closely with residents to influence behaviour and help them achieve savings in fuel bills; facilitating fuel switching.
- **Other:** Fitting A rated condensing boilers, upgrading or replacing communal boilers, and insulating communal boiler rooms; retrofitting green roofs; low energy light bulbs, provision of sensors to control communal lighting, remote metering and power-down plugs.

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Authorities refer to SAP measures of their stock at present and use them as targets for improvements; this includes prioritising properties with SAP of 35 and below because these are deemed to fail the DHS under HHSRS. Target SAP levels referred to were 65, 69, 70 and 75.

Several authorities have undertaken pilots, some earning awards for their projects. Some have received funding under the Technology Strategy Board Retrofit for the Future competition.

There were references to funding under CERT, CESP, Social Housing Energy Saving Programme (SHESP), Low Carbon Buildings Programme (LCBP) and European Regional Development Fund (ERDF).

Nine landlords gave no information about already existing programmes and measures to improve the environmental performance of their existing stock.

5.2 Planned energy efficiency works

Questions 2, 3 and 4: Energy efficiency measures planned, costs and funding sources.

These questions asked whether authorities plan energy efficiency measures for stock over and above the DHS thermal efficiency criterion; cost estimates, funding sources, and scale of works proposed; standards adopted, eg SAP aspirations; and timescales.

They also asked whether authorities plan additional energy efficiency works in 2011-13; and about funding sources, challenges and profiles; and what if any synergies are planned with forthcoming DHS programmes.

Out of 70 responses, seven did not supply any information in response to this section. Three landlords responded but did not answer questions 2, 3 or 4.

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Data on measures installed to improved the energy efficiency of housing stock was therefore analysed from 60 landlords.

- **Photo-voltaic (PV):** The most frequently mentioned measure: 30 landlords are installing this and four are considering.
- **Insulation:** Thirty four landlords reported that they are installing Loft and/or cavity wall insulation. A further ten are installing solid wall insulation, and nine are fitting insulated over cladding. One local authority referred to insulating loft hatches. Nine landlords referred in their answer to hard to treat properties and/or non-traditional construction (eg Orbits).
- The second most frequently reported measures were installation of **double glazing, solar thermal, air source heat pumps, (seven each) and boiler replacements (six).**
- **Air source heat pumps (ASHPs):** the seven instances of ASHP provision compared with only four landlords that referred to Ground Source Heat pumps.
- Three landlords reported that they have installed and four that they have upgraded **central heating systems**. Three landlords reported that they have insulated **hot water cylinders and pipes**. Five landlords have installed small scale **district heating systems**; one reported **micro combined heat and power**, and four reported converting to or installing **biomass**.
- A number of measures were reported once only. They were: **ventilation; water conservation; green roofs; fuel switching; sound proofing; heat metering; controls and monitoring.**

Some approaches that landlords reported were indicative of strategic approaches. Five of these can be grouped into measures that take account of the resident or user of the property and improvements: as well as resident information (one reference), these include smart metering (two references), Energy Performance Certificates (EPCs, two references), controls and monitoring, (one reference) and fuel switching (one reference).

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As well as windows and boiler replacement measures referred to above that are installed during planned maintenance, there is a category of relatively low cost high impact measures that were reported in small numbers: draught proofing (three reports), low energy light bulbs (three reports), smart meters (two reports), loft hatch insulation (one report), and controls and monitoring.

5.3 Strategic approaches

There were a number of references to strategic approaches. These included incorporating energy efficiency into design stage requirements; undertaking pilots to try out measures; a whole house approach; and Feed in Tariff (FIT).

- **Funding:** Responses to this question give an overview. References to CERT and CESP amounted to 32 and 38 respectively, with 17 references to FIT and/or Renewable Heat Incentive (RHI), seven references to ERDF and three to own resources. In addition two landlords reported using Regional Growth Fund (RGF) and one local authority reported using each of Private Finance Initiative (PFI), an Energy Services Company (ESCO) approach and Regional Development Agency (RDA) funding.
- **Fuel poverty and SAP:** Twelve landlords identified alleviating fuel poverty as a goal. One of these also referred to Health Indicators, three referred to SAP, two to reducing CO₂ emissions, one to generating income (through PV), and one to fuel switching.
- **SAP targets:** Thirty landlords supplied information about their objectives expressed as SAP targets.
- **Synergy with DHS:** Nineteen of the 70 landlords (27%) that submitted bids stated that they did co-ordinate energy efficiency works and programmes with their DHS programmes. The reasons given included maximising efficiency and value for money; to reduce disruption to

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residents; and to benefit from established supply chains. Five landlords referred to incorporating insulation into works. Other references included rewiring communal lighting with energy efficient lighting; installing PV whenever scaffolding is erected; and utilising CERT, CESP and RGF alongside DHS programmes to maximise efficiency and value.

- **Tenure:** One local authority plans to offer flexible payment terms for the installation of energy efficiency measures to leaseholders and owner occupiers on an estate; one is running a cross tenure programme to install PV, and has identified 'an extensive private sector target group' within this programme. Two more are exploring this.

5.3. CERT and CESP

Question 5 invited feedback on the operation of CERT and CESP schemes to date.

Out of the 70 landlords that made submissions, eleven made no comment on CERT or CESP in Question 5. Seventeen landlords made comments that were not included in the analysis as they did not give any significant material, so 42 responses were considered.

- The most commonly occurring issue was that of match funding; some noted that such a requirement was not originally part of the scheme as they understood it, and several said were unable to access CESP because they could not identify any match funding. Fourteen landlords referred to this as problematical.
- Twelve landlords found CESP complicated and difficult. Nine landlords found it inflexible, and four landlords found it confusing and lacking in transparency. For five landlords CESP conflicted with their internal procurement and probity requirements.

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- Eleven landlords found the geographical criteria impeded them from benefiting from CESP; geographical boundaries of Lower Super Output Areas (LSOAs) do not align with estates, leading to eligibility for CESP which aligns with LSOAs but does not make sense in the context of neighbourhoods.
- Four landlords experienced difficulties and complications with leaseholders.

In addition to these, a number of important issues were only raised once, but are significant enough to merit consideration:

- The use of indicative figures at scheme development, meant that landlords couldn't be certain about how much funding they would receive until they were committed.
- The timing of payments, significantly in arrears, created a problem.
- Energy companies were perceived by landlords to have cherry picked the best value and easiest to deliver measures.
- The list of approved materials prevented one local authority from adopting better performing materials.
- Three landlords identified that CESP does not work well in inner city areas. Others had difficulties in using it in rural locations.

5.4. The Green Deal

Question 6 asked landlords whether they plan to consider playing a role in implementing the Government's Green Deal strategy. Question 7 asked for comments on how the Green Deal could be designed and what this could help them to achieve.

Fifty three out of the 70 applicants stated that they are interested in playing a role in the Green Deal. Several of those that are considering this expressed

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enthusiasm / commitment. Five authorities may be interested or are considering; nine made no comment; only one said that they are definitely not planning to play a role, and one response was not relevant.

Thirteen landlords stated that the Green Deal is likely to be most suited to the private sector, with references to both private rented and owner occupied homes, with one landlord stating that they would only use it for the private rented sector.

Seven landlords identified an important brokering role for themselves. Aspects referred to included that they are trusted by consumers, that they are well placed to play a strategic role and that they can unlock demand.

Six landlords gave information about pilot projects that are underway or proposed; six landlords referred to the benefits of the Green Deal to local employment and one identified the need for skills development.

Eleven landlords specified working in partnership, most frequently with utility companies but also with a wider range of organisations.

Three landlords referred to resident behaviour issues and identified that the success of the Green Deal is dependent on acceptance by customers (ie the bill payers).

Three landlords referred to linkages with DHS programmes under the Green Deal heading.

There were fewer than three references to leaseholders, hard to treat homes, ESCOs, landlords acting as Green Deal installers, and to Energy Performance Certificates. One landlord described a whole stock housing energy database that it has developed.

6. Analysis

Seventy local authorities and ALMOs submitted applications for DHS Backlog funding out of a total of 326 local authorities in England, of which 171 own stock. The sample size was therefore 41% (70/171). A condition of funding was that applicants have more than 10% of homes that fail the DHS. The sample was wholly from landlords that consider they have stock that needs upgrading, although some that applied did not have more than 10% DHS fails.

Sixty one landlords, or 87% of those that responded, described activities that they are undertaking. Factors that may affect the level of activity reported are that:

- a) these are the landlords with housing stock in the worst condition.
- b) as this creates a pressure to carry out work, there is an opportunity to consider energy efficiency work in parallel.
- c) as the data was collected as part of submitting bids for funding, there is an incentive for associations to give a good account of their activities.

The landlords that responded by definition have housing stock that is below standard, and only nine of them gave no information about already existing programmes and measures to improve the environmental performance of their housing stock. The level of responses indicated a high level of awareness of the need to incorporate energy efficiency work into stock management activity and the level of associated activity. The range of responses indicate quite a high level of awareness and understanding of energy efficiency issues.

6.1. Measures

The most frequently reported measures fell into three categories: micro generation (PV – 30 local authorities; solar thermal and air source heat pumps - seven local authorities each); insulation measures (34 local authorities installing loft and/or cavity wall insulation, ten local authorities installing solid wall insulation and nine local authorities installing insulated over cladding); and planned maintenance items (double glazing – seven local authorities, and boiler replacements – six local authorities).

Solar thermal is arguably the most mature microgeneration technology and one that is particularly suited to social housing because residents are more likely to be at home during daylight hours. Factors that may have influenced decisions to install PV, solar thermal and ASHPs include availability of Feed in Tariff for PV; although there was only one reference to the Renewable Heat Incentive which will be available for solar thermal installations. The choice of ASHPs may be influenced by the fact that they are cheaper and easier to install than ground source heat pumps.

Replies reporting installation of double glazing and of replacement boilers are likely to indicate awareness of the energy efficiency of these measures as much as proactive action to improve energy efficiency, because these are now required standards under Building Regulations for planned maintenance programmes. Although the question was about energy efficiency measures, a number of landlords reported water efficiency measures (shower installations, dual flush WC cisterns and water aerating taps). This demonstrates awareness that by reducing the use of drinking quality water, these contribute to reducing energy demand.

There were several instances of low cost high impact measures: insulating heating pipes, draught proofing, low energy bulbs, loft hatch insulation, heating controls and monitoring and smart meters: a small number of respondents reported each of these.

6.2. Green Deal

Some of the responses expressed high levels of enthusiasm and commitment:

“S____ is strongly committed to taking an active role in delivering Green Deal for social housing once full details are known.”

“Yes, C____ intend to be at the forefront of the Green Deal and are talking to utility suppliers to ensure the most is made of the schemes for suppliers, housing authorities and customers.”

“C____ is excited and currently investigating the recent decision to allow social landlords to participate in the provision of the works. We are currently evaluating how the Green Deal would benefit residents of C____ “

Commitment is also evidenced by participation in pilots: three landlords reported that they have undertaken pilots, four would like to, and two referred to their importance.

The nature and extent of the role that local authorities can play in achieving the government’s energy efficiency policy objectives is suggested / illustrated by two aspects of their responses. Firstly these demonstrated commitment to residents in two ways: there were seven references to behavioural aspects: resident information, smart metering, EPCs, controls and monitoring, and fuel switching. In addition, 12 landlords referred to fuel poverty as a driver for undertaking energy efficiency measures. Complementing this, seven landlords referred to aspects which indicate that they can play an important brokering role (in the context of the question about the Green Deal).

7. Conclusions

The responses to this survey illustrate issues that should be incorporated into consideration of the role that local authorities can play in delivery of the Government's policy objective to increase the energy efficiency of the existing housing stock.

They demonstrate awareness by local authorities of the need to make housing stock energy efficient, of measures that can be adopted, and of the strategic roles that they can play; however there is a spread of knowledge and awareness, with generally low numbers of instances of each of a wide range of aspects. They demonstrated a significant level and degree of commitment and enthusiasm.

These attributes complement other advantages and benefits of local authorities' participation in this agenda: their local knowledge and existing relationships and partnerships; their service delivery and supply chain arrangements; and consumer trust and confidence.

Aspects that could be explored in order to enable a local authority delivery role include what scope there is for sharing skills, knowledge and information; and what scope there may be for achieving economies of scale by working together across local authority boundaries.

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Annex 1 Energy Efficiency questions in DHS Backlog Programme bid pro-forma

1. Have you carried out any energy efficiency works to your stock other than the thermal efficiency criterion in the Decent Home Standard?
2. Do you plan energy efficiency measures for your stock other than the thermal efficiency criterion of the Decent Home Standard? If Yes, are you aiming for a particular energy efficiency standard (quantify if possible, eg a minimum or average SAP rating)? Where possible please give: (i) cost estimates; (ii) proposed funding sources; (iii) the proposed scale of activity (eg the number of homes covered , and location of the stock where relevant); and (iv) the proposed timescale for works.
3. Do you plan additional energy efficiency works to your stock in 2011-13?
4. Since you plan additional energy efficiency works to your stock in 2011-13: (i) Is funding identified? If yes (a) is funding secured, (b) what is the value and profile of funding? If no: what sources of funding are being pursued? Are there any challenges in accessing funding which might be remedied by a change in funding structure? (ii) What synergies are planned with 2011 – 13 Decent Homes capital works delivery programmes (acknowledging this may be subject to Backlog funding allocations)?
5. Do you have any feedback on the operation of the existing CERT and CESP schemes?
6. Do you plan to consider playing a role in implementation of the Green Deal?
7. Are there issues you feel should be taken into account in the design of a future ECO and of the Green Deal? What will you achieve over and above current plans if these schemes are designed in the way you propose?

homesandcommunities.co.uk
mail@homesandcommunities.co.uk
0300 1234 500



Homes and Communities Agency

7th Floor

Maple House

149 Tottenham Court Road

London W1T 7BN

alison.mathias@hca.gsx.gov.uk

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