



SUSTAINABLE  
HOMES

September 2014

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## National Energy Study Two – understanding energy use in homes

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### 1. The future

The future is low carbon and sustainable. Sustainable Homes is one of the UK's leading sustainability consultancies making it happen. We are not-for-profit. We help landlords, Government and the supply chain take steps to improve quality of life and reduce bills.

Our mission is for '*every home to encourage sustainable lives*'. We do this through:

- being the trusted, independent voice of the sector – through research, advocacy, and industry representation on key issues and best-practice;
- managing the SHIFT sustainability benchmarking network for some of the largest landlords in the UK, responsible for more than a million existing homes and for building thousands of new homes;
- leading research on energy use and behaviour change which informs industry, Government and future regulations;
- providing accredited training courses on housing standards, retrofitting homes, fuel poverty, energy efficiency and other issues;
- communicating best practice through e-bulletins, that go to 12,000 people, Twitter, where we have 11,000 followers, and Linked in, where we have +3,000 connections.

## 2. Context

Over 2.3 million households are living in fuel poverty. As a country, we have made great strides in the last few years, building homes that are more sustainable. We have also started making progress in improving the energy efficiency of existing homes.

But part of the puzzle is missing. Until we address the way people behave and use energy as well we will not see real progress. The first National Energy Study (NES 1) showed that:

- people respond to feedback on their energy use by saving more;
- the most effective feedback was that which compared their energy use to others;
- emoticons, expressing approval or disapproval, have a significant statistically valid impact in helping people save;
- that housing associations were the most trusted to provide energy saving advice;
- many homes with higher SAP scores (Standard Assessment Procedure, the measure of the energy efficiency of a home) still seemed to be using considerably more energy than average, even after allowing for occupancy and size of homes;
- some people are not easily engaged into saving energy.

It is the last two points which are the focus of the National Energy Study Two.

### ***Reason for study***

#### *a) Further investigation of the correlation between energy use and SAP*

NES found that, despite allowing for occupancy and size of homes energy use was not lower for homes with higher SAP performance.

A number of National Energy Study participants, other associations, academics, officials and others are interested to investigate this further. It is proposed that:

- two bedroom homes are the focus of the National Energy Study Two, in order to give better data representation;
- the energy use in the two bed homes from NES 1 are studied again this winter;
- further information is gathered about these homes including (where possible) background information from the Energy Performance Certificates and information from visits to the homes.

#### *b) some people are not easily engaged into saving energy.*

Often it is perceived that people will want to save energy because there is a financial saving. The NES, and other recent research, has found that this is not always the case. While fuel poverty affects many people, there are many more who use energy without particular regard to its cost. To achieve carbon reduction targets it is important to be able to reach these people too.

If people feel good about saving energy for reasons other than money they may do so more readily. Additionally they are more likely to adjust ingrained behaviours if they feel other people are doing the same, than to change behaviour simply on money-saving advice. NES two will investigate people's motivations further and look at 'extrinsic values' (saving money) and 'intrinsic values' (the social and environmental good of using less energy). This will help



to inform how housing associations and others communicate the energy saving opportunity. In particular there are implications for how the green deal is marketed.

As with the last study, associations will provide homes for the study. This will contribute to the total pool of homes for the national study. Each association involved will also receive feedback on energy use in the homes measured and comparison with other homes in the study. Where residents have excessively low or excessively high energy bills Sustainable Homes will inform the housing association.

### 3. Methodology

Energy use will be collected on all the two bedroom homes in the study. Desktop analysis of data that sits behind EPCs will mean allowances can be made for size of exposed wall area and other issues. This part of the study focuses on analysing in more detail the correlation between EPCs and energy use (Part A of the study).

The study is also designed to assess different approaches for motivating residents to save energy (part B of the study). Energy use will be measured by taking regular meter readings over the winter. The homes will be split into three groups, 200 homes in each group. Residents will have their energy use measured under standard conditions before the intervention takes place.

The intervention will include energy saving information and advice. For one group all the advantages for taking action will be couched in terms of saving money. For the other group intrinsic values such as community benefit or reduction of climate change impacts will be highlighted.

At the conclusion of the study some of the participants will be interviewed about income, difficulties with bills, attitudes to energy use, intrinsic or extrinsic motivators being more important, their understanding of bills, heating controls amongst other things.

The remaining participants will complete a questionnaire on these topics.



To incentivise residents for continued involvement a reward (vouchers) will be offered to participants as well as the opportunity to enter a prize draw.

#### **Timeframe**

<b>21<sup>st</sup> October 2014</b>	Deadline for sign up to the study
<b>14<sup>th</sup> November</b>	Homes selected for study
<b>21<sup>st</sup> November</b>	Monitoring of energy use begins
<b>December</b>	Desktop analysis of homes being monitored
<b>January 2015</b>	Residents receive advice on saving energy
<b>February</b>	Residents receive a second set of advice on saving energy
<b>March</b>	Interviews conducted and questionnaire circulated
<b>April - June</b>	Analysis and writing of report
<b>June 2015</b>	Measure of gas used in homes

## 4. Assignment of tasks

The following is a summary of the tasks throughout the project and where responsibility would lie.

### Each registered provider to:

Provide a list of up to 400 two-bedroom houses. This enables us to compare heating use of similar-sized properties. It is hoped that 50 homes from this list will give their consent to be involved. The list should be vetted to exclude:

- ✋ vulnerable people;
- ✋ tenants likely to be moving before June 2015;
- ✋ others that local housing managers may wish to exclude.

Provide as much of the following information where possible: Current SAP, insulation levels, glazing, building types, any secondary energy sources (such as open fires, or microgeneration) and floor area of the properties.

Liaise with Sustainable Homes prior to letters being sent out.

In some instances it is likely to significantly help the study if visits could be undertaken to the homes by your staff or contractors



### Sustainable Homes to:

Sustainable Homes will carry out the following tasks

- ✋ Final sample selection – they will select the homes from those that offer to participate.
- ✋ Five sets of meter readings
- ✋ In-depth analysis of the homes within the study
- ✋ Provision of energy saving advice
- ✋ Handling of queries from residents involved
- ✋ Interaction with officials, those overseeing the study and media
- ✋ Analysis of results and report writing
- ✋ Individual reports and excel spreadsheets of performance for each association
- ✋ Press releases to announce the project and for your use

## 5. How NES Two differs from the first NES

Residents will not be asked to read their own energy meters and report use.

Residents will not receive feedback during the study.

Homes with EPC's are needed this time and the information that sits behind the EPC Calculation.

More desktop analysis will be undertaken on each home.

Only two bed homes will be analysed.

## 6. Challenges and risks

Challenges	
<b>Secure transfer, handling and storage of information</b>	Only key directly employed staff will be handling and storing the energy use data. Sustainable Homes has strong Data Protection procedures for the safe storing of sensitive information
<b>Ethical issues - identifying vulnerable consumers and gaining agreement to collecting data</b>	Particularly vulnerable people will be excluded from being invited in the first place. Data will be checked for instances of particularly low energy use.
<b>Ethical issues - Interventions in which control groups may be denied support to help them save energy, particularly relevant to vulnerable consumers over winter months</b>	This is unlikely to become a problem. There are no incentives within the study that may mean a resident is likely to make themselves cold as a result of the study itself. On the other hand, it may identify people who are under-heating their homes, this information can then be acted on by their housing association.
<b>Some participants may not routinely read their mail</b>	Data of such participants can still be included if gathered, as such people are still representative of many vulnerable people.

## Key risks for the project

The following table sets out the key risks to the project and how they will be assessed, managed and monitored

Identified risk	Assessed	Managed	Monitored
<b>Not gaining enough participants</b>	The team and the housing association partners are aware of the need for statistical validity	Our partners are helping identifying appropriate participants an incentive (a prize draw) is available for all participants.  Questionnaire to check participants meet requirements of the study  In our previous behaviour change projects we had significantly more households than needed	If indications are that insufficient numbers are being recruited, additional communication will be undertaken to gain greater uptake  This could include letters and/or phone calls.
<b>Vulnerable people</b>	We would seek the support of participating organisations to assist Sustainable Homes in identifying vulnerable residents	Sustainable Homes and participating organisations will inform participants that saving energy should not be at the expense of keeping warm.  The design of this study – informing residents of their energy use – should not send a message that heating levels need to be low.	Residents will be provided contact numbers for assistance in keeping warm and healthy.
<b>Not meeting deadlines for completion of the research</b>	Timeliness will be assessed against the delivery plan as set out on the next page.	More staff can be drawn upon to assist to deliver this work.  Members of our team have strong experience in delivering similar research.	Weekly project team meetings will be held and checks undertaken on any issues that could hold up the work
<b>Experiencing drop-out from the study</b>	Drop out rates will be discussed at monthly team meeting participation	We will proactively look to exclude those that are moving before the end of the project.  Emphasis will be placed on the fact that the trial is short and that their participation is very much appreciated.  Experience shows that participants should not be asked to do too much and should be updated on the findings and what the work is for.  In this study we have made allowances for a 25% drop outs.	As the study includes regular correspondence with participants, this can be used to maintain gratitude for their participation and provide a reminder of the prize draw at the end of the study

## 7. References

Sustainable Homes Limited is very well respected. Feedback on our services includes the following:

### CROHM- the strategic carbon assessment of existing homes

*"This research is proving highly valuable. It has highlighted the measures which have the greatest potential for carbon savings. This work is helping Merton focus on the most appropriate solutions for the area"*

Jon Buick, London Borough of Merton.

*"...[the service] has given us a much better understanding of how to deal with our hard-to-treat stock both efficiently and cost-effectively. We are now in a position to translate our strategy for these properties into a deliverable programme, including how we might integrate funding from the Green Deal into our plans"*

Iain Henderson, Catalyst Housing Group

### Consultancy

*"The whole process of developing the organisation's sustainability strategy and action plan in partnership with Sustainable Homes was made very, very easy. I am happy highly recommending them to others."*

John Dyson, Sovereign Kingfisher.

### Training

*"The standard of teaching and your dedication to it were exemplary."*

Anthony Probert, Phlorum Limited

*"Please pass on my thanks to Andrew and the team. A very enjoyable course and a pleasure to be taught by such knowledgeable people. I look forward to doing some more training at some stage!"*

Deborah Elliot, PRP Architects

### SHIFT

*"Being a SHIFT member underlines an organisation's commitment to sustainability which is why we were keen to get on board. One of the key benefits is that businesses are able to have their performance independently evaluated."*

David Bennett, Chief Executive,  
Sanctuary Group

*"SHIFT helped drive us to respond to residents' needs. I would definitely recommend it to other associations."*

Bronwen Rapley, Group Director Legal,  
Harvest Housing Group

*"The overall process was very straight forward and easy to understand. Overall a good service. We are extremely pleased with the outcome."*

Lewis Lowe, Energy Manager,  
Octavia Housing

*"SHIFT has given us a tried and tested tool for measuring and managing our environmental performance. It provides us with a framework for testing our Sustainability Strategy against and is also useful for communicating how we're performing to staff, residents and partners."*

*As a SHIFT member we also have access to some great events and resources and are kept up to date on all the latest national issues."*

Andrew Piper, Environmental Sustainability Manager  
Amicus Horizon



## 8. Expertise

Sustainable Homes works to improve the built environment through training, advice and influencing national policy. In the past 15 years we have gained a reputation for providing a high quality of service. The following is a small summary of some of our recent work.

 <p><b>Department of Energy &amp; Climate Change</b></p>	<p>Department for Energy and Climate change commissioned Sustainable Homes to undertake monitoring work in English homes.</p> <p>Also carried out behaviour change research on energy saving actions in the home</p>
	<p>Home energy advice for Resident Liaison Managers and Resident Liaison Officers for Apollo. These staff were trained to be able to provide energy advice to residents.</p>
	<p>Sustainable Homes partner provide Code for Sustainable Homes Assessor training on behalf of the BRE. This 4 day course and exam qualifies attendees to assess against the Code for Sustainable Homes.</p>
  	<p>Sustainable Homes developed the Sustainable Homes Index For Tomorrow (SHIFT) which assesses the sustainability local authorities, housing associations and ALMOs are doing to adapt to and mitigate climate change.</p> <p>The Tenant Services Authority, UK Green Building Council and WWF-UK support and steer the index.</p> <p>Now in membership are organisations managing approximately 1,000,000 existing homes.</p> <p>SHIFT assesses the sustainability of the work organisations are doing to reduce and mitigate climate change in existing buildings, new build, offices and their governance and management structures.</p> <p>Sustainable Homes won the 2010/11 Sustainable Housing award and is endorsed by a number of other Government Agencies.</p>
 <p><b>Homes &amp; Communities Agency</b></p>	<p>Sustainable Homes wrote the Green Deal guide for registered providers on behalf of the Homes and Communities Agency</p> <p>Sustainable Homes was commissioned to train Homes and Communities Agency housing and development staff</p>

## 9. Agreement

I agree to assist with the National Energy Study in helping to provide addresses, providing data and enabling Sustainable Homes to contact residents as set out in the assignment of tasks.

I agree Sustainable Homes can invoice me as follows:

- SHIFT members £6,880
- Non-SHIFT members £8,760

I agree to the above and I am/am not a SHIFT member			
Name		Job title	
Signature		Date	

## 10. Invoicing and payment terms

You will be invoiced in two stages 50% at the start of the project and 50% on provision of the final report/satisfaction with the work.

ooo

I hope this quotation is useful. Thank you for the opportunity to quote. We are very interested to take forward this research with you. It has important implications for how we engage with people on saving energy in the home. It also provides an opportunity to better understand of how our homes are performing.

Do let me know if there is anything else you need to take this work forward.

Yours sincerely



Andrew Eagles, Managing Director  
**Sustainable Homes**  
**0208 973 0420**

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## 11. Appendix 1: Insurance

### Professional Indemnity Insurance

AIG Europe Limited  
 The AIG Building  
 58 Fenchurch Street  
 London EC3M 4AB

#### Schedule

	Policy Number:	0034680806
	Form:	AIGHAPI2
Item 1.	Policyholder	HASTOE HOUSING ASSOCIATION LTD, HASTOE WYVERN HOUSING ASSOCIATION, HASTOE HOMES LIMITED, HASTOE CAPITAL PLC, SUSTAINABLE HOMES LIMITED
	Address	Marina House 17 Marina Place Hampton Wick Kingston Upon Thames Surrey KT1 4BH
Item 2.	Policy Period	From: 01/01/2014 To: 31/12/2014 Both days inclusive
Item 3.	Limit of Indemnity (any one Claim, excluding Defence Costs)	GBP 5,000,000 But limited to GBP 100,000 in the annual aggregate in respect of the Loss of Documents Extension
Item 4.	Retention (each and every Claim, but not applicable to Defence Costs)	GBP 5,000
Item 5.	Housing Association Services	Housing Association and Provision of Housing, Employment and Support Services
Item 6	Retroactive Date	None
Item 7.	Premium excluding applicable taxes	GBP 8,250
Item 8.	Declaration Signed by Insured	18/12/2013
Item 9	Endorsements	Endorsement 005 Medical Malpractice Exclusion

## 12. Appendix 2: Project team

Overseeing this project will be:

**Andrew Eagles**

**Managing Director**



Andrew

- is a licensed trainer on the Code for Sustainable Homes;
- qualified as an On Construction Domestic Energy Assessor;
- sits on the London Climate Change Partnership;

Andrew has also contributed to the:

- Senior technical steering group to the Technology Strategy Board - Retrofit for the Future project;
- Senior Steering Group on the Code for Sustainable Homes;
- Low Carbon Buildings Programme Grant Committee.

**Bill Wright**

**Sustainability Officer**



Bill has

- a Masters Diploma in Renewable Energy in the Built Environment;
- a BSc in Environmental Science;
- experience in energy efficiency in homes and schools for a North London energy savings charity;
- worked as a designer and installer of solar PV systems;
- worked on a European project for transferring vocational training in renewable energy;
- has years of experience in monitoring energy in homes in large scale studies.

**Richard Lupo**

**Senior Sustainability Consultant**



Richard

- is a Chartered Environmentalist and Full Member of the Institute of Environmental Management and Assessment (IEMA);
- at Sustainable Homes he has carried out over 30 full sustainability assessments of social landlords;
- other consultancy work includes calculating and making recommendations for improvement of office carbon emissions and business fleet emissions;
- has trained and qualified over 300 Code for Sustainable Homes assessors as well as trained building professionals on Housing Quality Indicators and sustainable refurbishment.

**John Stapleton**



## **Head of External Affairs**

John

- has eight years' public affairs and policy experience;
- worked as housing policy adviser at the Commission for Architecture and the Built Environment (CABE) and managed the *Building for Life* design initiative;
- was an adviser to Margaret Beckett as Housing Minister;
- enjoys changing policy and influencing for a low carbon more sustainable future;
- worked as a parliamentary researcher for three years;
- is now working on some of the most significant issues facing the affordable housing sector.

**Begum Nash**



## **Sustainability Officer**

Begum

- is a mechanical engineer;
- has an M.Sc. in Sustainable Energy Technologies and Management with Distinction (Brunel University);
- works on our national energy studies to help inform the sector of energy use, behaviour change and performance against energy standards;
- carries out leading monitoring work of homes across the country;
- assesses the sustainability of some of the largest landlords in the country;
- previously assisted European clients on renewables solar energy, energy efficiency and other issues.

**Robert Amoroso**



## **Marketing & Sustainability Officer**

Robert has

- very strong expertise on social media, websites, search engine;
- a specialised honours BES in Environmental Management;
- certificate in Geographic Information Systems (GIS) and Remote Sensing;
- a Certified Green Advantage Commercial/Residential practitioner;
- manages the sustainable homes contacts, bookings, database and conferences.

## 13. Appendix 3: Data protection

### Ensuring your data is safe

Sustainable Homes is registered with the Data Protection Act through its parent company, Hastoe Housing Association, who provide business systems and IT services for Sustainable Homes. Hastoe is fully compliant with the Data Protection Act, in the following ways:

a) *Secure storage of physical & system data*- Data stored on servers is either password protected or kept in folders with limited access permissions, and external access is prevented with firewalls, Windows authentication, and SSL certificate authenticated secure transport.

b) *Data back-up procedures*- Daily backups are kept in a lockable fireproof safe remotely from the servers. Financial and client data is encrypted during backup, and a full weekly backup is taken offsite via courier to a secure storage facility.

c) *Procedures for the destruction of physical and system data* - Destruction of equipment is fully WEEE compliant via authorised contractors.

d) *Protection of data during study* - It is intended that initial selection letters will be sent out by the respective housing associations, thus only respondents giving their consent to participate will have relevant data passed to Sustainable Homes.

Those collecting meter readings will clearly need addresses, but personal data will be kept securely on an encrypted laptop.

Only Sustainable Homes employees, or, where appropriate employees of the respective housing associations will have access to personal data of participants.

e) *Data encryption software used* - Sophos Safeguard

f) *Use of laptops and electronic removable media* - All laptops and other electronic equipment are required to be Sophos encrypted to prevent unauthorised data access in the event of equipment theft (with Sophos encryption software). In addition, removable USB media is blocked via Sophos policy unless registered with Hastoe's IT Dept.

g) *Details of person/s responsible for data security*. Andrew Eagles / Bill Wright (Sustainable Homes) and Richard Blainey (Head of ICT, Hastoe Housing Association).

h) *Policies for unauthorised staff access or misuse of confidential/personal data*. The following relevant policies are available on request: Systems Regulations; Data Protection Policy and Practice Statement; Smarter Working Procedure; Lone Working Procedure; Access to Information – Residents and Applications; Access to Organisation Information; Confidentiality Procedure; Email Policy and Procedure; Mobile Phone Protocol; Remote Working Protocol. There is also a Business Continuity Plan and IT Disaster Recovery Plan.

i) *Policies for staff awareness and training of DPA*. All staff attend compulsory DPA training.

j) *Physical security of premises*. In addition to building security, alarms and concierge out of hours, there is also a PIN entry system restricting access to the data server room at all times.

## 14. Appendix 4: Credentials



SHIFT is also endorsed by



Department  
of Energy &  
Climate Change

NATIONAL  
HOUSING  
FEDERATION



Homes &  
Communities  
Agency

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