

## SHAP WMHOG RESEARCH 2017/2018

### New West Midlands model for financing work in existing housing stock

#### Scope of the proposed work

The objective is to develop and test a finance model that will work for Local Authorities and Registered Providers to invest in energy efficient retrofit in their housing stock, independent of government grants. The research will:

- identify and assess cost recovery mechanisms and demonstrate the business case for energy efficiency retrofit in housing stock **across tenures**;
- identify and test a range of finance mechanisms and models;
- determine a range of appropriate cost efficient retrofit specifications and interventions, which will prevent negative outcomes or Performance Gap due to occupier interaction and/or inappropriate measures / lack of installation skills.

#### BACKGROUND

Inadequate and cold housing is known to impact on physical and mental health, on educational under attainment and worklessness and it can impact on community pride and wellbeing. The effects of occupiers' inability to heat their homes is seen across all tenures and all sizes of property.

Initiatives in recent decades have resulted in fabric and energy efficiency improvements to a proportion of Local Authority housing stock. Decent Homes, CESP, CERT, ECO and Green Deal provided investment alongside normal asset management budgets. However, three factors are now impacting on the ability of Local Authorities and their key housing sector partners to fund stock improvements:

1. Underfunded, rushed energy efficiency schemes rolled out to meet grant funding deadlines while keeping the price of saving a tonne of carbon low has resulted in some examples of additional issues such as growing incidences of condensation in under ventilated homes, giving rise to the need for remedial intervention
2. Abrupt changes in policy and funding streams – grants and other incentives – have left many planned schemes high and dry
3. An overall reduction in funding available to Local Authorities to support improvement of the existing housing stock to make it fit for purpose as we face

the issues of dealing with a generally old stock and a growing number of extreme weather events.

## SCOPE

The research proposal has 3 elements:

1. Identify cost recovery mechanism for landlords making energy efficiency investments
2. Identify potential finance models for energy efficiency retrofit
3. Reduce the risk of abortive investment because works do not result in predicted level of energy savings. This can be because tenants' behavior and lifestyle choices do not align with the energy efficiency products and insulation installed – eg turning off ventilation systems that only cost a few pounds a year to run resulting in excessive condensation. It may also result from failure of products to meet their anticipated performance, or from faulty installation.

## FURTHER DETAIL ON THE RESEARCH PROPOSED

### **1. Identify cost recovery mechanism for landlords making energy efficiency investments**

SHAP has previously defined a retrofit energy performance standard and a cost framework for stimulating and developing area based retrofit projects<sup>1</sup>. This standard was extensively tested<sup>23</sup> and there is evidence that a cost for whole house retrofit is approximately £40,000. There is evidence that an 80% carbon emissions reduction

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<sup>1</sup> by the *Community Green Deal* report, published in 2010

<sup>2</sup> in the *Beyond Decent Homes* report published in 2009.

<sup>3</sup> The retrofit standard proposed by SHAP was the same as the TSB's Retrofit for the Future Competition in 2011. The TSB project most closely matching the SHAP base specification in the Fit for the Future competition, took 3 of the top 4 places when analysed by TSB afterwards.

A version of the SHAP Community Green Deal was then created in Manchester. Eight pilots retrofit to an 80% carbon emissions reduction standard cost an average of around £44,000 per property. This is similar to the costings arrived at for the Energiesprong pay as you save model being rolled out to 110,000 properties in the Netherlands. However, a number of barriers remain to the development of a workable model in the UK. SHAP has laid some crucial foundations for a wider deeper retrofit programme but there are pieces missing.

achieved following deep retrofit should result in an average energy bill reduction from £1500pa to £300pa. Using this cost benchmark this project aims to challenge the perception that only the 'bill payer' benefits from whole house energy refurbishment and rarely the landlord.

This research project is the first stage in developing and evidencing a viable business case to inform organisations that a retrofit investment of circa £40k generates energy bill reductions which can be recovered as a means to supplement capital investment whilst still providing lower energy bills for the occupiers.

The research will review current cost recovery models, providing opportunity to build on them and develop new models for recouping and 'sharing' energy bill savings. Through a programme of desk-top research of current 'income' models, rent regulation, interviews with landlords and tenants and portfolio investment analysis the project will publish a report which aims to evidence the opportunities for recovering energy bill savings generated from energy refurbishment.

## **2. Identify potential finance models for energy efficiency retrofit**

The Community Green Deal model developed by SHAP in 2010 relied on Feed In Tariff to cross subsidise the less viable parts of a deep retrofit. Following the changes to Feed in Tariff, we have looked in detail at energy storage as way of replacing that previous subsidy with an income independent of government funding decisions. We believe that this gives rise to a viable financial model .

This research will test the assumptions underpinning this model to confirm whether the model is robust enough to develop further. The research will include an outline sensitivity analysis, and set out areas where further work is needed by SHAP members and wider industry. The objective is to determine whether the model is scalable while also delivering a range of retrofit product(s) of good quality that will create healthy 21st century homes of out of 19th and 20th century stock.

The assumptions to be tested in more detail are:

1. fabric improvement cost assumptions
2. parameters affecting forecast reductions in costs
3. PV and energy storage installation costs
4. energy storage income projections
5. other possible sources of finance e.g. carbon sales
6. management costs and liabilities
7. rate and term of finance

### **3. Managing the risk of abortive investment because tenants behaviour and lifestyle choices do not align with the energy efficiency products and insulation installed**

This research aims to identify and evidence the success factors in occupants maximising the benefit from investment in energy efficiency measures and new technologies. It will also aim to avoid abortive investment by stockholders and individual owner occupiers where lifestyle behaviours do not optimise installation of technologies.

The project will include analysis of:

- Analysis of occupant behaviour change activity linked to installation of differing technologies
- Best technology providing best occupant behaviour change activity
- Interaction between technology and simple advice – is the technological revolution gaining ground in effective home energy management?
- Identifying health and well-being benefits resulting from improved home environment

#### **Output (s)**

The output from the research will be a business case based on new financial models for funding investment in existing housing stock.

This model will respond to the following questions:

1. What finance is available to Local Authorities and their partners to fund investment in existing housing stock?
2. How do stock owners recover the cost of their investment in their stock? What is the business case that will encourage landlords to invest in energy efficiency retrofit?
3. How can the risks that investment in existing stock does not deliver the predicted benefits be managed?
4. What questions should be asked of private finance companies e.g. those offering free PV installation currently.

#### **How will it be applied and by whom**

- The model will be available to all West Midlands Local Authority and Housing Association Housing Officers and Asset Managers.
- The model will help stock owning Local Authorities identify investment strategies and finance options for existing stock.
- The model will help all Local Authorities work with their local social housing providers and private rented sector stock holders to identify finance mechanisms to manage and improve their housing assets.

