

STROUD DISTRICT COUNCIL

AGENDA
ITEM NO

HOUSING COMMITTEE

10 DECEMBER 2019

9

Report Title	TENANT SERVICES ENERGY STRATEGY - UPDATE
Purpose of Report	To update the Committee on steps taken to date towards improving energy efficiency in the Council's domestic dwellings, to outline proposals for the existing housing stock contributing to CN2030 and to agree the direction of travel for the new council homes programme in terms of energy efficiency.
Decision(s)	<p>Housing Committee RESOLVES:</p> <ol style="list-style-type: none"> 1) To approve the approach to the improved energy efficiency of new council homes being delivered subject to the increased budget required set out in the HRA budget report to this committee, being approved; and 2) To note that Tenant Services will work in conjunction with the CN2030 member-officer group to commission/undertake a wider piece of work to fully consider all the viable options available, including costs and timescales required to maximise the SAP ratings of our existing dwellings; and 3) To note that in the interim, Tenant Services will continue with the current investment model of planned improvements to energy efficiency in our existing dwellings.
Consultation and Feedback	An initial discussion has taken place with the Chair of the Housing Committee.
Financial Implications and Risk Assessment	<p>There are no direct financial implications.</p> <p>This report recommends to continue with the existing planned works investment model, which can be completed within existing resources. Any future changes will need to be costed and included within the Medium term Financial Plan (MTFP), complete with additional allocation of funding.</p> <p>The proposed changes to new homes are within the proposed MTFP reported to this Committee. This will be subject to Council approval in February.</p> <p>Lucy Clothier, Interim Accountancy Manager Tel: 01453 754343 Email: lucy.clothier@stroud.gov.uk</p>

Legal Implications	CN2030 is not a legal requirement in itself and Part L & Part F of the Building Regulations apply to new housing. However the Council has declared a climate emergency and making the existing housing stock more energy efficient will contribute significantly towards reaching the CN2030 goal. There are no legal implications arising from this report. Patrick Arran, Interim Head of Legal Services and Monitoring Officer Tel: 01453 754369 Email: patrick.arran@stroud.gov.uk
Report Author	Angela Carr, Services Manager (Tenant Services) Tel: 01453 754168 Email: angela.carr@stroud.gov.uk Leonie Lockwood, New Homes and Regeneration Manager Tel: 01453 754153 Email: leonie.lockwood@stroud.gov.uk (For New Homes section).
Options	The Committee can either accept the recommendations or not.
Performance Management Follow Up	None
Background Papers	None
Appendices	Appendix 1: Energy Action Plan – Updated May 2019 Appendix 2: Improvement Modelling Appendix 3: HyDeploy Infographic Table 1: Energy Efficient Installations Table 2: Co2 Savings

1.0 Introduction

- 1.1 Tenant Services' (TS) Energy Strategy was formulated in March 2017 with the intention of improving the energy performance of the Council's Housing Revenue Account (HRA) properties. The key aims of the strategy are to:
- Relieve fuel poverty
 - Maximise carbon reduction in line with the Council's existing and future agreed targets.
- 1.2 The Energy Strategy is accompanied by a rolling 5 year Energy Action Plan which has the following stated aims:
- Provide healthy homes
 - Ensure effective and efficient use of council resources
 - Provide our tenants with affordable warmth
 - Reduce CO2 emissions in line with Government targets
 - Become a Leading Housing Provider for energy management
- 1.3 The Energy Action Plan was reviewed in May 2019 and an update was provided on progress against the aims stated (Appendix 1).

- 1.4 To date several measures have been taken to improve the energy efficiency of SDC housing stock such as improvements to external and cavity wall insulation, fitting of energy efficient (A rated) gas central heating systems, installation of energy efficient and controllable electrical heating and installation/renewal of double glazed windows.
- 1.5 SDC also currently have approximately 540 properties fitted with renewable energy heating systems such as air source and ground source heat pumps.
- 1.6 The measures carried out to date have proved easiest to target and these works have contributed to SDC's housing stock having a current average SAP rating of 64.75 (against a UK social housing average of 62.40). SDC's highest rating home is 93 (A rating) and the lowest are between 8 and 20 (non-traditional construction properties). There is an ongoing programme of surveys to validate those with the lowest SAP rating.
- 1.7 The improvements that are still required in the stock are to the more challenging "Hard to Treat" homes. These will now need significant and targeted investment in order for them to meet the aims as set out within the Energy Strategy.

2.0 Energy Strategy

- 2.1 The Energy Action Plan was to be implemented and monitored by the Energy Strategy Steering Group (ESSG), to ensure that any changes made to the plan are appropriate in the context of the aims and priorities of this strategy.
- 2.2 In June 2019 the Environment Committee decided to set up a CN2030 member-officer group with remit to ensure actions undertaken to achieve CN2030 are embedded across the Council. This group is expected to take a strategic overview of energy efficiency and retrofitting across all housing sectors in the District.
- 2.3 The group will also review TS Energy Strategy, taking account of the potential for innovation and trial schemes.
- 2.4 Since the TS Energy Strategy was written, SDC has revised its Environmental Policy, declared a climate emergency and committed to becoming carbon neutral by 2030. SDC's existing housing stock will have a vital role to play in this endeavour.
- 2.5 Total spend to date on the installation of energy efficient components is £11,773,771 (see Table 1: Energy Efficient Installations attached).
- 2.6 The strategy behind this spend has been based on the continued renewal and installation of gas central heating where properties are in a close enough radius to the supply, resulting in 431 installations since 2017.
- 2.7 Natural gas currently continues to be a cost efficient installation for social housing, though it is reliant on energy generated from fossil fuels. The network, technology, fixtures and fittings are readily available as is the expertise to fit and maintain these installations.
- 2.8 SDC has approximately 540 properties fitted with systems reliant on renewable energy, the majority of which are air source heat pumps. The bulk of these systems were fitted

in 2013/14 and 2014/15 when there were several incentive funds available via grant; up to 10% of the funding was granted for fitting a small number of these items. The majority of installations are in receipt of Renewable Heat Incentive (RHI) for up to 7 years post fitting, in order to offset the investment cost. It is still possible to receive RHI for new renewable heat generation installations but this will cease for new installations in 2021. The “replacement” for this fund will be the Smart Export Guarantee; an OFGEM consultation document will be released shortly.

- 2.9 SDC has approximately 600 properties fitted with Solar PV for which SDC receives Feed-in Tariff (FiT) via OFGEM. We have also submitted a joint bid with Gloucestershire Community Energy Coop (GCEC) for a Next Generation Community Energy Grant for the installation of further Solar PV and battery energy storage to some of our sheltered housing schemes. The project is innovative but also grounded in nationally recognised models such as community energy and large scale PV installation schemes run by local authorities elsewhere in the country.
- 2.10 Since July 2017, RHI and FiT have generated an income of £499,932. This is credited to the HRA in general.
- 2.11 Our current installations generate an average of 1,214,886 KW of electricity per year and save an average of 637 tonnes of Co2. This is the equivalent of saving 1,912,624 miles of Co2 emitted by car travel, planting 20,805 trees or boiling 12,472,824 kettles (see Table 2: Co2 Savings attached).

3.0 Current Measurements

- 3.1 Energy efficiency in properties is measured either via the Standard Assessment Procedure (SAP) rating, also known as full SAP or via Reduced Data SAP (RdSAP). RdSAP is used exclusively for measuring energy in existing buildings.
- 3.2 The SAP rating is based on the energy costs associated with space heating, water heating, ventilation and lighting, less cost savings from energy generation technologies. It is adjusted for floor area so that it is essentially independent of dwelling size for a given built form. The SAP rating is expressed on a scale of 1 to 100, the higher the number the lower the running costs. The rating can exceed 100 if renewable generation technologies are used.
- 3.3 For our existing housing stock, the objectives of the Energy Strategy are to relieve fuel poverty and maximize carbon reduction in line with the Council’s existing and future agreed targets. This will require significant investment, prioritization of homes for improvement and behavioral education and change for our tenants.
- 3.4 The Energy Strategy includes an objective to increase SAP by an unspecified number of points over an unspecified number of years, as it was written prior to SDC declaring a climate emergency. Programmed improvements going forward now need to be based on maximizing the increase in SAP rating across our existing stock, making a significant contribution towards achieving CN2030.

4.0 Existing Investment Modelling

- 4.1 Significant investment will be required to reach CN2030. Modelling carried out in 2016/17 indicates the cost per average increase in SAP points of various measures that could be undertaken to SDCs homes as well as the cost per tonne of Co2 saved (Appendix 2: Improvement Modelling).
- 4.2 Since the modelling was completed, the majority of the energy efficient installations shown in Table 1 have been completed. It should also be noted that the models assumed that the installation of A rated gas boilers would be continued into the future. Recent proposed and actual changes in legislation have brought this into question.
- 4.3 The stock modelling shows the results for a selection of improvement scenarios and highlights 3 example combinations that result in the highest increases. The 3 examples assume that the existing programmes of planned work have been completed and the average SAP rating has increased to 70.66 (an increase of 6.19).
- 4.4 The “Basic” combination features electrical heating upgrades, installation of air source heat pumps (where gas is not available) and external solid wall insulation. The approximate investment required for this combination is £4.38M and gives an increase in average SAP of 1.2; 71.86. These costs are included within the MTFP and 30 year financial forecast.
- 4.5 The “Enhanced” combination allows for combined heat and power to two communal heating systems, new gas central heating, installation of air source heat pumps, external wall insulation to non-traditional build homes and new double glazing and improved insulation to flat roofs. The approximate investment calculated for this combination is £11.9M, giving an increase in average SAP of 3.19; 73.85. This level of investment is potentially achievable, allowing for decisions to be made for continuing programmes not included within the energy efficiency agenda.
- 4.6 The “Ultimate” combination allows for all improvements included in the Enhanced combination with the addition of Solar PV to all suitable dwellings. The approximate capital investment required for this combination is £20M and gives an increase in average SAP of 5.67; 76.33.
- 4.7 This level of investment together with the aspirations for new build properties would be difficult to achieve.
- 4.8 Since the SAP baseline for existing stock was established there have been three iterations of SAP. The effect has been that even though improvements in the stock have been made there has been little change in the overall SAP rating. For example, the change in conventions between SAP 2012 and SAP 2018 resulted in SAP levels going from an average of 64 down to 58. Every change in convention means officers have to manually intervene to update energy information.

5.0 Next Steps & Considerations

New Council Homes

- 5.1 The Future Homes Standard (Ministry of Housing, Communities and Local Government – Consultation Paper October 2019) sets out proposed changes to Part L (conservation of fuel and power) and Part F (ventilation) of the Building Regulations for new dwellings. This standard will be set in order to future-proof new homes with low carbon heating and world leading levels of energy efficiency (Spring Statement 2019). It will be introduced in 2025 and implemented via the Building Regulations.
- 5.2 The Future Homes Standard has a high emphasis on fabric standards. It is based on new homes typically having triple glazing and standards to walls, roofs and floors that will significantly limit heat loss and reduce the energy use requirements of the home. The Government recognises that although this will play an important role in reducing demand for heat, these measures alone will not meet its ambitions or the net zero emissions target by 2050.

As a result, in addition to a high level of fabric efficiency, MHCLG also proposes that a low carbon heating system is integral to the specification required to meet the Future Homes Standard.

- 5.3 New homes will represent a small percentage of homes owned and managed by SDC.
- 5.4 Ahead of this standard being introduced and to address the Council's CN 2030 commitments, an approach is proposed for the specification of the new council homes in terms of energy efficiency. The next three schemes in the programme, that need to be tendered now in order to comply with the programme and the profiling of the budget as contained in the HRA budget report, a fabric first approach is taken and the number of PV panels on the roof maximised, taking into account orientation, and tenders are sought for both a gas boiler and for air source heat pumps. Prices can then be reviewed when tenders are received and a decision can be made on the best way forward. Battery storage will also be investigated, liaising with our maintenance colleagues, to establish whether this is practical at the moment, and, if so, to also include this into the tender. All of these options should deliver us at least a SAP rating of 86, which has been estimated would deliver a reduction on emissions on Part L in the building regulations of 27%.
- 5.5 A SAP rating of 86, which equates to an EPC rating of B, complies with the proposed planning policy level of achieving a minimum SAP rating of 86 for all new homes in the district, as detailed in the Environment Committee decision in June 2019. However, the proposed planning policy has now moved on and the recent Local Plan consultation is looking at a higher reduction in carbon emissions in new homes and the setting up of a carbon offset pot to deliver carbon neutral homes.

The new homes team will work with colleagues across the Council and take advice from external agencies to establish how we are going to move closer to the draft local plan policy levels, how the carbon offset may work to deliver carbon neutral homes and how we balance increasing energy efficiency on new build homes against that on our existing stock.

- 5.6 Each time a scheme is tendered a review will be undertaken as the specification will move on as technology, the market, government subsidies, etc. enables us to move to greater energy efficiency and will put the Council in a position to address the requirements set out in future changes to the building regulations on this matter and the policies that are finally adopted in the Local Plan.
- 5.7 The increased cost that has been estimated for delivering a SAP rating of 86 on all of the 84 properties in the new programme, together with the budget for the new scheme at Cambridge House, is detailed in the HRA budget report presented at this meeting for approval and equates to an additional £4.1 million. This additional budget also needs the approval of Strategy and Resources Committee in January and Council in February. A contract will not be awarded on these next three schemes to be tendered until the increased budgets have been approved.

Existing stock

- 5.8 In order to achieve the CN2030 target, SDC will need to consider adopting the measures proposed in the Future Homes Standard; increasing the energy efficiency of the existing housing stock.
- 5.9 Measures to consider include:
- Heat pumps
 - Heat networks
 - Direct electric heating
 - Hydrogen blending to the gas network
- 5.10 SDC currently has approximately 4000 units heated with gas central heating, 540 units heated with renewable systems and 600 – 650 units heated with electricity as a primary heat source.
- 5.11 The Committee for Climate Change (CCC) has recommended that new homes should not be connected to the gas grid from 2025 (UK Housing: Fit for the future? CCC 2019). As a result, they anticipate that the installation of air-to-air or air-to-water heat pumps will play a major role in delivering low carbon heat for homes (Future Homes Standard – October 2019).
- 5.12 Our current renewable heating consists mainly of air-to-water systems that are now in the 6th or 7th year of their estimated lifecycle of 15 years. This lifecycle is based on that currently used for conventional gas central heating boilers in the Decent Homes Standard.
- 5.13 Experience to date indicates that these units may not remain in use over the estimated lifecycle. The original systems installed, Dimplex LA6mi & LA9mi, in some cases were not fitted particularly well. The systems themselves were a mix of several manufacturers' components, with the whole system given a Dimplex label. These components have failed at earlier rates than expected and the systems are now obsolete. This has led to a number of replacement systems being installed, far earlier than allowed for. The average cost of these replacements is £9,500.00. The total costs

to renew SDC's current electric systems for this renewal option would be approximately £5.7M; this does not include renewal of existing units.

- 5.14 Subsequent systems fitted were either Mitsubishi or Daikin models. These manufacturers have continued to manufacture and develop these systems and parts are available when repairs are required. The average cost of a repair to an air source system is currently £600.00.
- 5.15 The expiry of the Green Deal in 2015 resulted in the subsequent lack of investment in training and skills to fit and maintain these systems. Generally, gas and refrigeration engineers have been engaged to install and maintain them. MHCLG has recognised that there is unlikely to be the necessary supply of trained installers and products in the current supply chain, especially so in the case of heat pumps. The CCC reports:

“it is not feasible to ramp up installation rates of heat pumps straight away to the current levels of gas boiler sales (over a million per year) from the current level of 20,000 per year, not only due to market development but also because there are not enough qualified heat pump installers” (Net Zero – The UK's contribution to stopping global warming, CCC 2019).

MHCLG plan to work with industry to ensure it has the necessary skills and plans to invest £34M to scale up training models for construction skills across the country.

For our district the Gloucestershire Energy Strategy (GfirstLEP) states a commitment to accelerating low carbon housing retrofit, lead by Severn Wye Energy Agency and states:

“The market for low carbon housing retrofit needs orchestrating – bringing together householders keen to take action with a well-trained local supply chain which understands low carbon retrofit techniques and appropriate material choices for local buildings” (Gloucestershire Sustainable Energy Strategy January 2019).

- 5.16 It is likely to prove better value for money for SDC to train in house engineers to maintain, if not install the systems going forward. Training can cost from £800.00 per engineer and does not, at present, need to be renewed (City & Guilds 2079 Category 1 F-gas qualification).
- 5.17 Heat networks used to be referred to as district heating. A heat network is a distribution system, taking heat from a central source, such as a plant room, and delivering it to a number of dwellings or buildings. SDC currently has 5 such networks, all on sheltered schemes, which have been or are about to be refurbished but remain on the gas network.

Heat networks have an advantage in that it can be easier to add new technologies to them with little disruption to tenants providing an opportunity to introduce renewal and recovered heat sources that cannot be accessed at an individual dwelling level.

Heat networks are expected to play a strong role in delivering low carbon heat for future homes (BEIS 2019).

5.18 Direct electric heating is expected to play a minor role in providing low carbon heating for the future. Although it is near 100% efficient and produces no emissions at the point of use, it is very expensive to run and, at large scale may not be able to be supported by the national grid.

5.19 Hydrogen blending may have a role to play in future heating systems but will be particularly significant for the existing network if sufficiently successful. Two large live trials are to take place in the north of England with HyDeploy and Keele University, which has its own gas network. It is expected to make little or no difference to the use of existing gas appliances and could save around 6M tonnes of carbon dioxide emissions per year (see Appendix 3: HyDelpoy Infographic). The costs involved are not yet known.

6.0 Conclusion

6.1 Tenant Services will continue with the current investment model of planned improvements to energy efficiency in our existing dwellings; and working in conjunction with the CN2030 member-officer group, commission/undertake a wider piece of work to fully consider all the viable options available, including costs and timescales required to maximise the SAP ratings of our existing dwellings.

Whilst the recommended approach for new homes is to deliver a minimum SAP rating of 86, increases to this should be considered as future schemes are brought forward and tender prices and potential grants become known.