



Energy Strategy
Housing Revenue Account
January 2022

Contents

Introduction	4
Background	4
Aim of this document	4
Legislation	4
Validity of data	5
Executive summary	5
Ambition	6
Background	7
Scope/Intention	7
Where are we now	7
Primary sources of CO ₂ emissions	8
Desired outcomes	9
Fuel poverty	9
Fuel poverty data according to the age of the property nationally	10
Fuel poverty data according to nature of ownership	11
Outline costs	11
Procurement and delivery process	12
Timescales	12
Technology related issues	13
Funding issues	13
Energy saving implementation	15
The types of technology	16
Monitoring to learn and understand data	16
Offsetting	16
APPENDIX ONE	18
Costs	18
APPENDIX TWO	20
PPP model	20
Procurement	20
Delivery	23
APPENDIX THREE	28
Current stock	28
EPC Ratings	28

Fuel Type Breakdown.....	28
APPENDIX FOUR.....	29
Risks.....	29
APPENDIX FIVE.....	31
Government policy.....	31
APPENDIX SIX.....	33
Stock transition	33

Introduction

Background

It is now widely known that in the UK we have a climate emergency and Government has published ambitious targets with priorities based on a desire to drive an overall 80% reduction in Carbon Emissions (CO₂) by 2050. This target, with current uptake rates, will be impossible to achieve.

The second highest sector for emission of carbon and greenhouse gases is domestic housing energy use - accounting for 14% of the UK carbon emissions. Housing developers and social landlords must now take a proactive and robust approach to contributing to the overall target of an 80% reduction through more innovative, energy efficient, asset investment.

St Albans has declared a climate emergency as have many other local authorities and housing associations.

Since April 2020, the Housing Asset Manager has been working with Council partners, to investigate and assess current housing stock, current energy ratings and efficiency as well as new ways of working. The aim has been, firstly, to confirm the most innovative and cost-effective way of rationalising the Council's asset investment programs, maintenance arrangements and an overall whole house approach to firstly achieve net carbon zero and over what time line. Secondly, the objective is to future proof housing stock (HRA) to ensure the Council can reach and maintain a carbon zero future in the most appropriate time frame possible, whilst delivering value for money and tackling some key challenges - such as fuel poverty - along the way.

Aim of this document

St Albans City and District Council have taken the fundamental decision to reach a net zero carbon target by 2030. This is set out in the Council's Sustainability and Climate Crisis Strategy published in 2020.

This document outlines the issues involved in the delivery of this project and in particular the steps that can be taken to achieve this ambitious target.

Legislation

To avoid the worst effects of climate change, the UK Government passed legislation requiring CO₂ emissions to be reduced significantly by 2050 and to improve all Social Housing to SAP C level by 2030.

With the publication of the Intergovernmental Panel on Climate Change and a study into Climate Change (9th August 2021), there were further announcements regarding the Governments' commitment to Net Carbon Zero during the Climate Change Conference of the Parties (COP26) hosted in Glasgow by the UK Government in October/November 2021 – bringing forward the current target date of 2050 to 2035.

The COP26 summit brought parties together to accelerate action towards the goals of the Paris Agreement and the UN Framework Convention on Climate Change.

In 2019, 26% of UK carbon emissions were produced by domestic energy use (Note 1)

It is expected that the Government Net Carbon Zero targets will place a legal and/or regulatory obligation on Local Government and RPS's (Registered Providers of Social Housing) to meet these targets – largely using their own financial resources - although various funding programs have come, and gone, over the past few years and it is widely expected that other funding streams will be announced over the next few years.

Note 1: Committee for climate change report 2019 – “UK Housing Fit for the Future” 2019

Validity of data

All information included in this report is based on Energy Performance Certificates (EPC) and general asset data currently available as at August 2021.

However, it is widely accepted that some of the existing EPC data is incorrect Note 2

Furthermore, of the current St Albans social housing stock of 4,952 units, currently only just over 90% of the HRA units have an EPC rating. A realistic methodology for overcoming these shortcomings in EPC data are given in Appendix Two.

Where appropriate, an expected allowance for the additional 479 units has been considered, and in such cases this has been clearly indicated.

Note 2. For many years, the widely accepted method of producing EPC ratings was on a statistical basis. For example, if there is a row of, say, 30 similar houses in one street, only four or five might undergo a full EPC analysis. If that data was consistent, it would then be assumed that all units in the same “block” would have the same EPC rating. More recently it has become apparent that this methodology gives rise to – in some cases considerable – EPC rating errors.

Executive summary

All Social Landlords are required (by Government Legislation) to have a net zero strategy covering domestic dwellings, for full compliance by 2050, with many Local Authorities choosing to bring that target forward to 2030. The second aspect of current Government targets is to achieve SAP C by 2035.

In the case of St Albans City and District Council, 4,952 Council owned dwellings must be retrofitted with energy reduction measures in order to comply with the National Net Zero legislation.

The expected cost to meet the 2030 target is estimated to be around £70-80 million (including fabric improvements). Some funding support will be available from Central Government. However, the overall value of such support and the conditions associated with funding applications change regularly.

The implementation of the retrofit technology does, however, have a major social benefit as by the time the project is complete, all residents should have moved out of fuel poverty.

There is a national shortage of contractors qualified to undertake this retrofit work so time is of the essence in completing the procurement process.

The purpose of this strategy document is to set out the current levels of energy efficiency within St Albans District & City Council housing stock of 4,952 units

situated across the District of St Albans and to identify the most advantageous way to deliver the St Albans net zero 2030 aspiration.

St Albans has completed a programme of stock condition surveys and Energy Performance Certificates (EPC) assessments in the last 18 months meaning just over 90% of the HRA properties now have EPC ratings (subject to the concerns indicated in ^{Note 2}, above).

EPCs are carried out by EPC assessors or 'Domestic Energy Assessors' with domestic dwellings being placed on a colour-coded scale from A to G with A being the most efficient with the cheapest fuel bills.

These surveys have indicated:

- 0 A rated
- 1 B rated
- 2,969 C rated
- 1,467 D rated
- 29 E rated
- 7 F rated
- 0 G rated

Total 4,473.

However, the remaining EPCs are being prioritised for completion by March 2022 to ensure the full database of 4,952 EPCs is complete for accurate analysis and modelling across the entire stock. This programme is currently on course for March 2022 with Morgan Sindall Property Services Limited.

St Albans City and District Council has declared a climate emergency and has committed to achieve, as a Council, net zero by 2030 across the entire District. This includes the housing stock.

Within this report, a robust strategy is proposed detailing how to achieve an improvement from the current ratings (detailed above) to net zero within our housing stock. This covers assessment, methods of delivery and average estimated costs of the improvements. We also identify social value and social inclusion benefits; tackling fuel poverty for our residents; partnerships with current and new providers to enable delivery by 2030; and unique, innovative, methods of delivery to achieve such an ambitious plan.

However, to meet the Councils' net zero target, urgent action is required, particularly regarding the appointment of appropriate contractors on a partnership basis.

Ambition

In July 2019 St Albans City and District Council began working on a comprehensive plan of action to drastically reduce our emissions across, not only our own buildings, services, and operations, but also across the District.

This was in recognition of the rapid action that is needed globally to bring down emissions to limit average global temperature increase to below 1.5 degrees. Our

aim is to do all that we can to reduce emissions across the District to net zero by 2030.

The Council has also published a Sustainability and Climate Crisis Strategy with six core themes:

1. Governance and leadership;
2. Energy use;
3. Transport and air quality;
4. Waste;
5. Nature and sustainable food;
6. Climate change adaptation and water.

We encourage local businesses, organisations, schools and groups to recognise the scale of the task required and support our strategy by developing their own plan of action to improve the sustainability of their day-to-day activities. The Council has a Climate Action Group to offer advice and support across the Borough on reducing Carbon Emissions.

St Albans City and District Council is a partner of the Hertfordshire Climate Change and Sustainability Partnership (HCCSP), which has members from Hertfordshire County Council, all 10 district and borough Councils, and Hertfordshire Local Enterprise Partnership.

Background

The retrofit strategy is a part of the overall Councils' net zero strategy and cannot be considered in isolation.

The bigger picture includes offsetting, local sourcing of materials, general carbon efficiency measure, staff travel arrangements (including use of electric and hybrid vehicles and public transport) as well as using local staff with short travelling distances to their place(s) of work and home working programmes and a requirement for contractors to use local staff.

St Albans City and District Council has a sustainability team and climate action group that co-ordinates the whole Council and District activities relating to carbon emissions and who should therefore be consulted on any major net zero programs.

Scope/Intention

The intention is straightforward - to improve the HRA stock within the Council to achieve an A or B EPC rating and net zero carbon emissions by 2030; to improve the housing stock and the quality of lives for tenants; and to lower energy costs.

However, this will require a substantial commitment from the Council to achieve these ambitious aims in only eight years.

Where are we now

St Albans City and District Council has commissioned a large programme of strategic asset management surveys to ascertain where we are now in terms of our current energy efficiency ratings across the housing stock.

This was led by our Housing Asset Team through our partnership with Morgan Sindall Property Services (MSPS), with over 4,473 surveys having been undertaken in the last 18 months.

We have also embarked on a series of pilot programmes to be able to gain a better understanding of the delivery process, compliance requirements and general perception of efficiency improvements. This will enable valuable lessons learned to be implemented, factual post improvement measurement of how to provide the best carbon savings for our investment and overall value for money.

The Council successfully bid for funding of £250k from the Government under the GDH LADB1 funding stream. This is for at least 50 properties to receive a maximum funding of £5k per property to receive retrofit measures solar panels. This will improve the EPC ratings on these properties to at least a C from their current performance of D or below. This pilot is on track to be completed by the end of March 2022. These works are being delivered in partnership with Morgan Sindall Property Services and a specialist energy company.

The Council has also submitted a bid for the Social Housing Decarbonisation Fund (SHDF) for £1.5m to carry out measures on approximately 150 HRA properties to again improve the EPC ratings to at least a C. The outcome of the bid is expected by January 2022. If successful, the works will start in April 2022 and be completed by the end of March 2023.

These pilots have, and will, also provide feedback from residents and council officers as to how the measures and changes have been received by residents, how best to improve varying construction types and inform future works on similar archetypes, and our overall technical strategy of measures and their application.

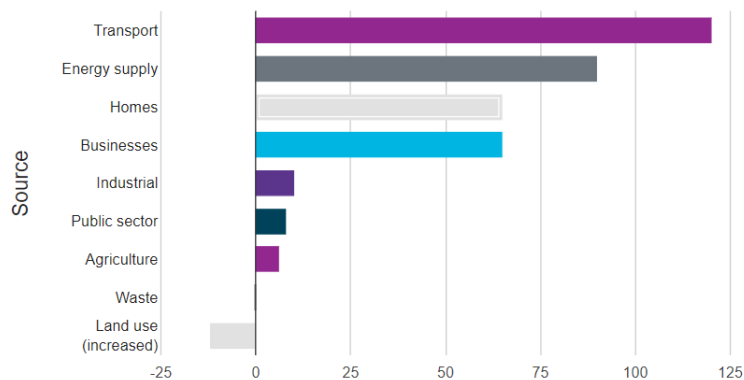
Finally, these pilot schemes have enabled the Council to gain understanding and experience of working with Central Government and the Department for Business, Energy and Industrial Strategy (BEIS) to obtain and use necessary funding to ease the capital cost of the delivery our strategy. This has provided a clear understanding of how best to use future funding pots and blend funding to minimise the impact on the Councils' own funds in achieving our goal of net zero.

Any gaps in capability, capacity or renewable energy knowledge in the current contracting partners delivering heating installations and servicing will be addressed by the strategy outlined in this document. The current contracts do not cover renewable energy or the move to a carbon neutral position for the housing stock. This highlights the need to have a partner that can deliver the energy strategy in a timely manner as part of a three-way partnership between the Council, MSPS and a partner qualified to ensure the strategies aims and targets are met.

Primary sources of CO₂ emissions

Domestic housing is currently the third largest source of CO₂ emissions.

As at 2019 the main sources of CO₂ emissions were ^{Note 3}



Note 3 Local Government Association Data

Desired outcomes

- Net zero by 2030;
- Reduced carbon emissions across the District;
- Improved comfort and health of our residents;
- Lower energy costs and future-proofing such energy costs for residents in the borough - taking our residents out of forced fuel poverty;
- Better ventilation, air quality and “air-tightness” and increasing the thermal value of our assets. These outcomes will increase the life cycle and overall value of our assets;
- To enable the Council to learn lessons for future asset investment, and shape our future strategies, in an evolving market of new technology and other technical advances;
- To create work, apprenticeships and job opportunities for St Albans’ residents, and the nearby population, to aid economic recovery and address social inclusion barriers for young people;
- To create lasting partnerships with BEIS and delivery partners to ease capital costs and deliver long term value for money, including long term maintenance of installed assets and reducing capital costs as well as future operating costs for the Council.

Fuel poverty

There are important social implications to the issue of energy efficient homes.

Fuel poverty in England is measured using the Low Income, Low Energy Efficiency (LILEE) indicator. ^{Note 4}

Under the LILEE indicator, a household is considered to be fuel poor if:

- they are living in a property with a fuel poverty energy efficiency rating of band D or below;
- and

- when they spend the required amount to heat their home, they are left with a residual income below the official poverty line.

There are 3 key elements in determining whether a household is fuel poor:

- household income;
- household energy requirements – based on the thermal efficiency of the property;
- fuel prices.

Raising the energy efficiency ratings of our housing stock will reduce or even eliminate Fuel Poverty.

As part of our net zero policies, we must aim to eliminate Fuel Poverty by 2030.

Note 4 gov.uk/government/collections/fuel-poverty-statistics

Fuel poverty data according to the age of the property nationally Note 5

Dwelling age	Proportion of households within group (%)	
	Not fuel poor	Fuel poor
Pre 1919	78.3	21.7
1919 to 1944	82.3	17.7
1945 to 1964	83.9	16.1
1965 to 1980	90.2	9.8
1981 to 1990	92.0	8.0
1991 to 2002	92.0	8.0
Post 2002	98.2	1.8^
All households	86.6	13.4

^ number based on low sample count (between 10 and less than 30), inferences should not be made based on this figure.

Fuel poverty data according to nature of ownership Note 5

Housing Sector	Proportion of households within group (%)	
	Not fuel poor	Fuel poor
Private sector	87.6	12.4
Social sector	81.6	18.4
All households	86.6	13.4

Note 5 Data from Department for Business, Energy & Industrial Strategy

Nationally, fuel poverty is nearly 50% higher in social housing residents than in privately owned properties, so this issue must be urgently addressed by Registered Social Landlords. In nearly every case, fuel poverty in the social housing sector can be entirely eliminated as part of their net zero 2030 strategy and this is certainly the case for the St Albans City and District Council net zero 2030 strategy.

St Albans Fuel Poverty Table for Net Zero 2030						
This document provides an average fuel saving per EPC rating when measures are added						
Current EPC Rating	New EPC Rating	Average fuel saving (£ per annum)	Average Carbon saving (CO ₂ tonnes)	Life of retrofit (years)	Cumulative saving (£)	Cumulative saving (CO ₂ tonnes)
F	B	£1,000	4.7	15	£15,000	70.5
E	B	£550	4.5	15	£8,250	67.5
D	B	£350	1.9	15	£5,250	28.5
C	A+	£250	1.5	15	£3,750	22.5
B	A+	£75	0.3	15	£1,125	4.5

Outline costs

A detailed analysis of expected costs is given in Appendix One.

However, in general terms, we have considered an industry standard model based on categorising properties that are expected to have a current EPC rating lower than Band C. EPC and efficiency rating – “Energy Performance Certificate” In England, EPCs are carried out by EPC assessors or ‘Domestic Energy Assessors’. Domestic dwellings are placed on a colour-coded scale from A to G - A being the most efficient with the cheapest fuel bills.

Those categories are based on the following variables:

- Existing EPC (baseline data);
- Property type (house, bungalow, apartment in a block, etc.);
- Date of construction (in age bands);
- Number of beds (as an indication of property size and occupancy level);
- Modelled post-measure EPC scores;
- Average costs of measures in a weighted scoring system to ensure best value for all elements of our desired outcomes;
- Average fuel costs.

Procurement and delivery process

Detailed proposals are given in Appendix Two.

It has already been identified that Morgan Sindall Property Services (MSPS) - under the current partnership contract - can deliver all fabric improvements, but there is a need to procure a third partner to work alongside St Albans and MSPS to deliver the heating/hot water and renewable element of the programme.

When considering the overall net zero strategy there are gaps in our existing partnership and supplier contracts.

In particular we need to procure a renewable energy contractor and appoint a retrofit co-ordinator.

In order to meet project timescales, the selection process for the renewable energy contractor needs to be complete by 31st December 2022 – allowing for a 12 to 16 week mobilisation process, and contract start no later than May 2023.

It is strongly recommended that the renewable energy contractor should be procured through an existing Public Sector Framework such as that operated by Procure Public (part of the national framework partnerships group).

The framework operator will have a list of appropriately qualified contractors which will meet the requirements for an SSQ (Supplier Suitability Questionnaire) and the same framework operator can handle the mini competition process to help select the contractor.

This will reduce the cost to the Council of the actual procurement process and speed up the process whilst being totally compliant with Public Sector procurement legislation.

The renewable energy contractor will be required to work on a true partnership basis.

Timescales

There are two critical factors in the overall delivery timescales.

The first is that of Government targets for carbon emission reductions and net zero strategies were 2050 but have been brought forward to around 2035 through Government announcements during the COP26 conference.

However, there is also a practical factor due to the severe shortage of contractors holding the necessary PAS2035 accreditations. This situation is exacerbated by the dramatically increasing demand for contractors to have staff with these approvals as Social Landlords develop their net zero strategies. The situation is also further pressurised by private sector activities in the same field, with other incentives for private housing to achieve the same standard.

As such it is important to manage the procurement process to appoint a main renewables contractor as soon as practically, and legislatively, possible to avoid the potential situation where there are no PAS2035 qualified contractors available.

A risk register with mitigation is included in Appendix Four along with further details of the proposed procurement process in Appendix Four.

This policy has widespread cross-party support so even if there was to be a change in Government the overall policy and target is unlikely to be softened.

Technology related issues

Funding issues

Within the overall Government net zero strategy are various funding streams available to both Social Landlords and Private Individuals. However, most of those schemes are short term and under-funded. As such, in many cases funding “runs out”.

New or replacement funding schemes are often announced at short notice and are aimed at a range of different renewable energy and retrofit technologies.

So it is vital that we are agile in terms of accessing new funding streams as soon as they become available and ensure we are able to make applications no matter what the restrictions are on the types of technology receiving that funding.

Examples of existing, or recently announced funding programmes are:

- SHDF (Social Housing Decarbonisation Fund)
This is a £3.8 billion fund offering the potential for registered providers of social housing (including private and local authority providers) to upgrade the energy performance of their social homes. For the first wave of the SHDF, grants will be awarded via Section 31, which means housing associations will not be able to directly apply to the fund. As with the SHDF Demonstrator, housing associations will be able to apply as part of a local authority led bid.
- GHG (Green Homes Grant)
UK Research and Innovation (UKRI) will invest £30 million in five interdisciplinary projects and a central hub located at the University of Oxford, to conduct the research over 4.5 years.
An additional £1.5 million will be invested in further studies in year three of the research.
The results will be used to shape longer-term government decision-making on the most effective technologies to help the UK tackle climate change and reduce CO2 emissions.

- LAD (Local Authority Delivery – of the green homes grant)
Government releases LAD reports approximately monthly and contain the following data:
Measures Installed by Measure Type;
Measures Installed by English Geographic Region;
 - Number of Eligible Applications by English Geographic Region;
 - Number of Households Upgraded by English Geographic Region;
 - Number of Signed-up Households and Measures installed by LA/LA Consortia Lead.
- ECO Energy Company Obligation
ECO is the government's umbrella term for its programme to make houses in the UK more energy efficient. The latest iteration of the scheme is focused solely on targeting energy efficiency measures in lower income and more vulnerable households.

The current scheme, called ECO3, was launched in December 2018. It runs until 31 March 2022 and is focused exclusively on those customers with lower incomes who are considered to be in vulnerable situations or living in fuel poverty. A wide range of benefits qualify recipients for ECO3.

The most popular ECO measures ^(Note 6) are:

- Gas boiler replacement (Installed in 80,012 homes under ECO);
- Other heating - including heating controls (Installed in 64,408 homes under ECO);
- Cavity wall insulation (Installed in 59,877 homes under ECO);
- Under floor insulation (Installed in 45,565 homes under ECO);
- Loft insulation (Installed in 33,645 homes under ECO);
- Solid wall insulation (Installed in 15,187 homes under ECO).

ECO 4 will be launched in April 2022 and will still include social housing, so ECO funding will remain relevant.

Note 6 Ofgem data for ECO3 measures to September 2020.

We will need to react very quickly as new funding streams become available, examples being:

- RHI (Domestic Renewable Heat Incentive)
Eligibility includes both private landlords and social landlords
RHI funding can cover
 - biomass boilers;
 - solar water heating;
 - certain heat pumps.

Payments are made for 7 years and are based on the amount of renewable heat made by the new heating system. This funding stream will be replaced in April 2022 by CHG (Clean Heat Grant).

An agile approach to new funding streams will involve support from our retrofit partners (current and to be appointed) with those partners having experience in all aspects of the technologies being implemented.

Most government funding schemes are currently (typically) available from 2022 to 2024 so consideration must be given to front load the programme and mobilise very quickly to maximise contributions from currently available funding schemes.

It is also important to have a qualified, expert, retrofit co-ordinator or advisor - appointed by the Council - to ensure we use the best combination of funding to minimise the Council's own investment and maximise these funds in a blended approach.

Any funding through Government schemes will have to be PAS2035 compliant, meaning a retrofit coordinator MUST be in place to manage the selection, installation, and monitoring of any retrofit works and also to manage compliance with any funding schemes or grants obtained.

Energy saving implementation

Key to minimising overall costs in the implementation will be using a blend of all funding streams available operating on a specialist partnerships basis with contractors and coordinators to ensure maximum value for each retrofit, to identify all potential funding streams on a case by case basis, and then managing compliance with the right appraisal, the right measures and the capacity to meet the deadlines and capitalising on available funding as it becomes available in both short term and longer term funding schemes.

There are, however, some obstacles to be overcome during the implementation of our net zero 2030 strategy.

These are detailed below.

- Supply chain issues with shortages of some types of product, (such as ASHP – Air Source Heat Pumps) with demand currently exceeding supply.
- There are knock on effects of delays in availability of materials to overcome fabric issues due to the recent covid restrictions.
- Although central Government is expecting a significant reduction in cost of renewable energy products (due to economies of scale in manufacturing) the opposite is currently the case with costs of many products rising.
- The demand on PAS2035 co-ordinators and surveyors is currently unsustainable with a massive shortage of such qualified personnel within the marketplace. Nevertheless, the use of such qualified personnel is essential.

Most of these issues can either be eliminated, or at least mitigated, by the correct selection of the main retrofit partner(s).

It is important that the net zero strategy is aligned with the housing investment program (kitchens and bathrooms, roofs, windows, doors etc.) and then fed into the overall Asset Management Strategy.

The net zero strategy will also align with the Council's new build and development teams to ensure consistency across the stock.

The types of technology

There are two distinct aspects to the technologies employed to meet the Net Zero targets.

The first relates to energy conservation measures, including:

- Roof/loft insulation;
- Cavity wall insulation;
- Ensuring windows and external doors installation is optimised;
- Installation of low-energy light bulbs.

The second relates to energy generation using the following technologies:

- Solar PV ("solar panels");
- Solar thermal;
- Air source heat pumps (ASHP);
- Ground source heat pumps (GSHP).

There are other renewable energy technologies, but these are not suited to individual domestic properties but relate to commercial scale energy generation including tidal power, wind power, hydroelectric power and biomass.

A key element of the net zero project will be the replacement of existing gas fuelled hot water and heating systems with electrical systems albeit far more efficient than obsolete storage heaters.

Hydrogen fuelled boilers are being actively discussed within central Government but are not currently available for domestic use and are unlikely to be fully developed for at least 15 years.

Monitoring to learn and understand data

It will be important to acquire, and install, remote monitoring technology on a whole of house basis to ensure we can instantly obtain vital data on running cost post retrofit, evaluation of the impact of the retrofit, resident behaviour, the ability to be alerted to issues with newly applied measures or that of the resident understanding and use of new measures. A robust approach to remote monitoring will be key for the council staff and retrofit coordinator to measure accurately and successfully measure, monitor, intervene and learn from early retrofits to continually improve and tailor the approach as the programme matures.

Offsetting

Energy saving gains will vary substantially depending on the age and type of property undergoing retrofit.

Even many recently constructed properties are poorly insulated and energy hungry. However, newer properties are generally easier to retrofit where older properties do not lend themselves to economically viable retrofit works.

For this reason, it will be necessary to carefully consider those properties that will not be capable of upgrading to SAP C or net zero. We will need to consider whether we should sell off these properties to private sector clients and use the funds raised to build new, energy efficient, homes. Alternatively – although possibly counter intuitive – some properties could be demolished and replaced by new build units that already meet net zero targets as part of a wider Council inter-departmental plan.

Some properties – including some Council-owned, non-domestic, buildings – will be capable of upgrading to highly energy-efficient status and will then be eligible for “energy offset”. The additional efficiency rating of such buildings can be used to offset the underperformance of some of the older housing stock, even where some retrofit works have been undertaken.

Examples include the use of large PV installations (solar panels) on Council owned properties/land with large roof areas or fields (for example on schools, leisure centres and council offices).

As previously stated, work to adopt this strategy to enable the Housing Department to achieve a carbon neutral position for the HRA stock by 2030, the procurement exercise to establish a suitably qualified partner to deliver the required measures needs to start as soon as possible, ideally by April 2022. HRA financial resources have been included in the HRA Business Plan Housing Investment Programme.

APPENDIX ONE

Costs

Indicative costs, per property (as at August 2021) to meet the net zero target are:

- A rated to net zero - Not Applicable;
- B rated to net zero £13,000;
- C rated to net zero £13,900;
- D rated to net zero £14,400;
- E rated to net zero £16,200;
- F rated to net zero £26,400;
- G rated to net zero - Not Applicable.

These figures must be considered budgetary and are primarily related to installation of retrofit heating and hot water technologies and fabric upgrades.

In overall terms, the cost of meeting the net zero target on all properties, including both renewable energy and fabric works is £70-80 million between 2022 and 2030.

However, there are several funding streams which will have a significant effect on the net cost to St Albans Council.

St Albans Funding Forecast for Net Zero 2030									
This Document Provides a Forecast and Explanation of Funding that is Currently – and could also remain – available for the term of the St Albans Net Zero Program									
Funding Stream Available	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	Total Potential Funding
GHG LAD scheme	✓	✓	unknown	unknown	unknown	unknown	unknown	unknown	£3,000,000
SHDF fund	✓	✓	unknown	unknown	unknown	unknown	unknown	unknown	£6,000,000
ECO4 (2022-2025)	✓	✓	✓	unknown	unknown	unknown	unknown	unknown	£1,000,000
Clean Heat Grant	✓	✓	✓	✓	✓	✓	✓	✓	£16,072,000
Key to funding amounts (as at June 2021)									
GHG LAD scheme	£5000 per property								

Key to Measures and Costs Used		This table indicates what measures are likely to be implemented to achieve net zero against a base EPC and the estimated costs for those measures								
		EWI	CWI	Loft	LED Lights	Ventilation	ASHP	Solar PV	Solar Thermal	Total Cost
F rating to net zero	✓			✓	✓	✓	✓	✓		£26,400
E rating to net zero			✓	✓	✓	✓	✓	✓		£16,200
D rating to net zero				✓	✓	✓	✓	✓		£14,400
C rating to net zero					✓	✓	✓	✓		£13,900
B rating to net zero							✓	✓		£13,000
Estimated Measures Costs										
External Wall Insulation		£12,000								
Cavity Wall Insulation		£1,800								
Loft Insulation		£500								
LED Lights		£200								
Ventilation		£700								
ASHP		£2,000								
Solar PV		£4,000								
Solar Thermal		£4,000								
SHDF fund	£5000 per property									
ECO4 (2022-2025)	£500 per measure									
Clean Heat Grant	£4000 per property									

Albans Energy Efficiency Measures for Net Zero 2030 Program

PPENDIX TWO

PPP model

Procurement

For several reasons, time is of the essence.

The overall net zero 2030 target is highly ambitious and Social Landlords across the country will all be procuring delivery partners.

Even when the appropriate contracts are in place the scope of delivery will place considerable pressure on all delivery partners.

In general terms, 625 properties will need retrofitting per annum until 2030. As such it is vital that the delivery starts as soon as possible – preferably by May 2023.

As such the selection process for the renewable energy contractor needs to be complete by the end of 2022 – allowing for a 12 to 16 week mobilisation process, and contract start no later than May 2023. This needs to be based on a partnership contractor not merely a simple delivery organisation.

It is strongly recommended that the renewable energy contractor should be procured through an existing Public Sector Framework such as that operated by Procure Public.

The Council's Asset Manager has already investigated this framework and undertaken due diligence (procurement-wise) to arrive at this recommendation.

The framework operator will have a list of appropriately qualified contractors which will meet the requirements for an SSQ (Super Suitability Questionnaire) and the same framework operator can handle the mini competition process to help select the contractor.

This will reduce the cost to the Council of the actual procurement process and speed up the process whilst being totally compliant with Public Sector procurement legislation.

Morgan Sindall has an ongoing partnership contract with the Council until beyond the net zero 2030 target. As such they will automatically remain the partner for fabric works throughout the programme.

Procure Public already has the only suitable and agile framework that covers all fuel types within St Albans' existing stock and future renewable technologies for installation and maintenance, covering a PPP approach. It already has a robust specification available that is in keeping with the councils' expected SLAs and KPIs and is a close match to current contracts for maintenance and term partnerships.

If the recommendation of working with Procure Public for the technology retrofit partner (contractor) is accepted there are a number of important issues to be included within the specification.

These include those detailed below.

- The contract will be on a partnership basis until at least 2030;
- The successful contractor must commit to operating a local office and stores facility;
- The successful contractor must understand, and subscribe to, the “Local Multiplier” ^{Note 7}
- In order to minimise supply chain bottlenecks the successful contractor must demonstrate that they already have a robust supply chain with a direct relationship with key renewable energy equipment suppliers;
- A social value clause must include a commitment to apprenticeships, employing residents and upskilling of local employees;
- A commitment to recycling all equipment/materials removed from properties being retrofitted;
- Elimination of single use plastics and other packing materials by bulk delivery of materials to local stores unit;
- Materials – as far as possible - being sourced locally (even if ordered from manufacturers and nationwide chains) in order to minimise embodied carbon due to long distance deliveries;
- The successful contractor must explain their contribution to social inclusion;
- The successful contractor would be required to provide a full maintenance service on all current gas installations – including LGSR certification, repairs and an out of hours service on a PPP basis once the existing gas maintenance contract comes to an end;
- The successful contractor must have a demonstrable record of supporting Social Landlords with their funding applications and proven experience of working with GHG LAD schemes and reporting to BEIS;
- The successful contractor should – in partnership with the St Albans City and District Council – commit to signing up to SHIFT sustainability accreditation to highlight St Albans commitment to sustainable sourcing and publicly reporting their sustainability impact to the marketplace.

Note 7. The Local Multiplier effect states that spending money locally helps to generate further wealth and job opportunities in the local community. Mathematical models vary but typically it can be stated that £1 spend locally will generate up to £6 of direct financial benefit to the local community over the following 5 years.

From the technical point of view the successful contractor must:

- Confirm they have fully accredited, in-house, PAS2035 co-ordinators and assessors
- They must hold the following accreditations:
 - MCS for ALL technologies;
 - NICEIC Approved Contractors;
 - RECC;
 - PAS2030;
 - Elmhurst Energy Accreditation or Equivalent;
 - Cyber Essentials;
 - SSIP Accredited H&S (Constructionline Gold or equivalent);
 - Trust Mark Approved;
 - Gas Safe approved;
 - HEATAS Accredited;
 - FGAS Accredited;
 - NEA Accredited to advise under PAS2035;
 - Qualified PAS 2035 Evaluator role already established.
- Have demonstrable experience in the following technologies:
 - Solar PV;
 - Solar thermal;
 - ASHP (Air Source Heat Pumps);
 - GSHP (Ground Source Heat Pumps);
 - Electrical systems;
 - Ventilation and Mechanical Heat Recovery Systems;
 - LED lighting;
 - Newly introduced hybrid systems;
 - Gas Boilers, Solid fuel and storage heating maintenance on a large scale PPP model;
 - A robust and proven remote monitoring technology (already in place) to remotely, and accurately, monitor whole house improvements and retrofit measures for the council - with monthly reporting and fault alerting.

A supplier of the following additional services will need to be confirmed:

- External wall insulation;
- Loft insulation;
- Cavity wall insulation;
- Window and door replacements;
- General building works;
- Roofing and enabling works.

These services are currently provided by Morgan Sindall Property Services which is contracted by the Council until well beyond the net zero project target.

It must be noted that there are potential issues regarding the procurement process and the actual project delivery.

These include:

- Lack of skilled staff regarding many aspects of the retrofit works;
- Lack of accredited contractors with proven skills and experience;
- Lack of council's own resource to police and manage the programme and ensure value for money;
- Current lack of product and appropriate solutions available in the market – with associated difficulty in meeting demand;
- The overall project is very ambitious for delivery by 2030. The large volume of retrofit works over an eight-year period will require around 625 retrofit projects per year to meet the net zero compliance requirement;
- Resident buy-in and agreement for the works – including improvements – are vital to the success of the project and will require considerable RLO (Resident Liaison Officer) activity throughout the project delivery;
- Procurement risks with lengthy tender processes could cause the project delivery to be delayed, with a lack of available contractors having specialist knowledge and experience;
- Most Government funding schemes are currently available from 2022 to 2024 so there are benefits in front loading the programme and mobilise very quickly to maximise financial contributions from known funding schemes;
- Ongoing maintenance and evaluation of the effects of poor maintenance are again affected by lack of suitable contractors to maintain the installed systems and evaluate/monitor their effectiveness;
- Lack of independent project management, survey, option appraisal and compliance sign off is a project risk, so it is recommended that an independent retrofit coordinator is appointed – either a contractor or someone directly employed by St Albans is vital.

Most of these issues will be mitigated by the appointment of an appropriate renewable energy retrofit partner/s.

Delivery

The following figures are based on the 4,473 properties that have already undergone an EPC survey.

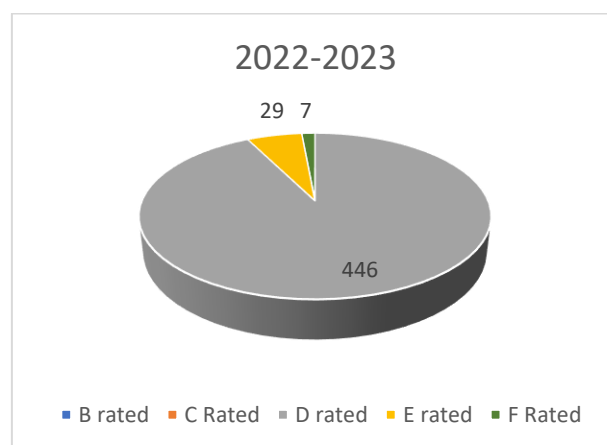
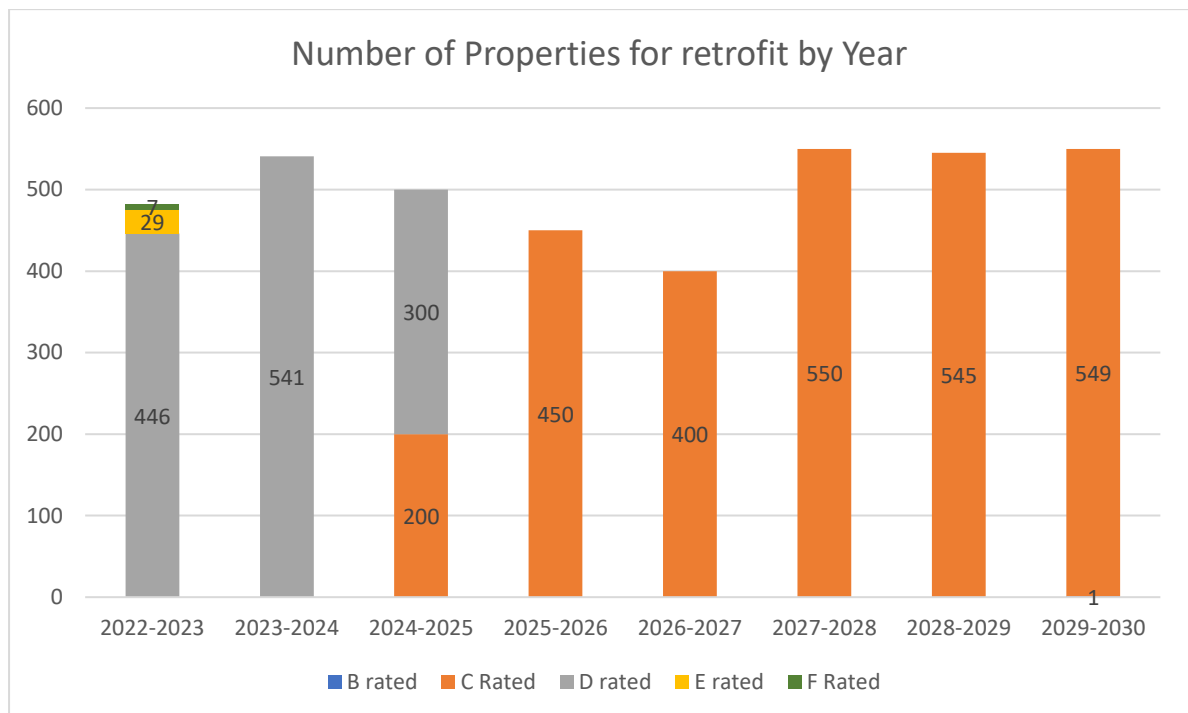
As detailed in the section entitled “Validity of Data”, above.

The renewable technology partner could also be appointed as the gas maintenance contractor. This would allow the energy strategy to be totally agile in terms of maintaining the existing heating systems while adopting the most efficient programme to replace gas heating with renewable non carbon heating systems.

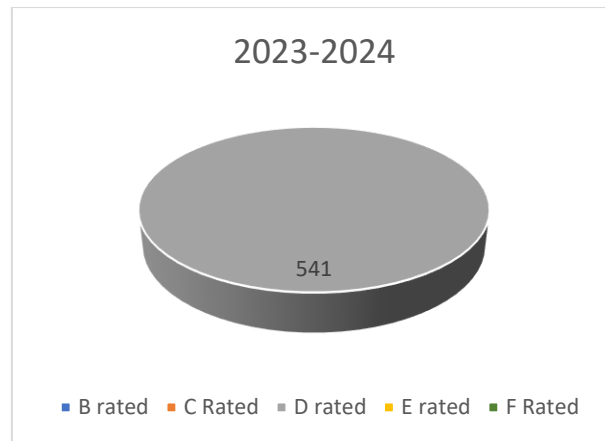
That partner would be required, during their annual maintenance visit, to undertake a fresh EPC evaluation covering all properties. This would address the issue of existing statistical EPC surveys where only some properties in adjacent “groups” are surveyed, with the maintenance contractor (the renewable energy retrofit partner)

being required to update all EPC surveys on every property where they undertake annual maintenance work including LGSR checks and certification.

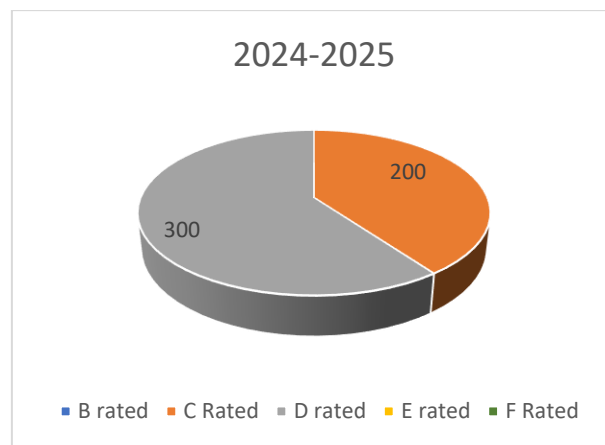
This will overcome the issue of properties currently having no EPC survey as well as providing accurate EPC data on every property- even where there are multiple properties in one street/block.



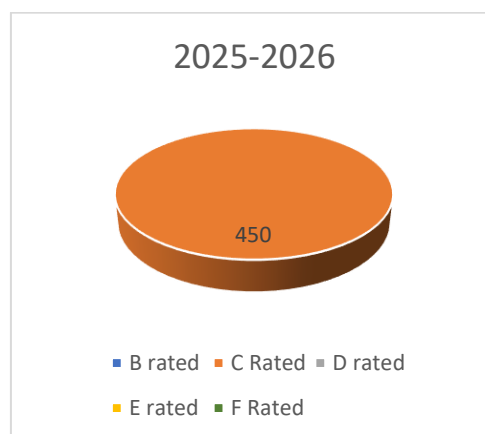
Retrofit target 2022-2023 with priority being given to D rated properties



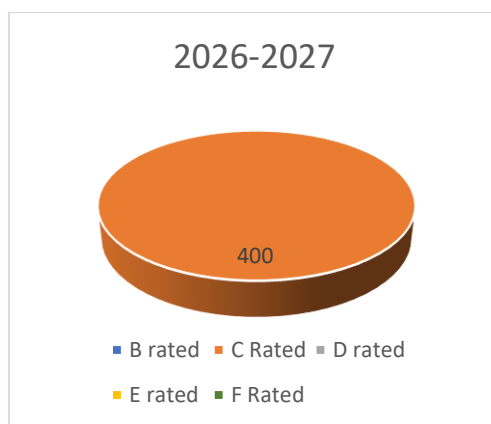
Retrofit target 2023-2024 with priority continuing to being given to D rated properties



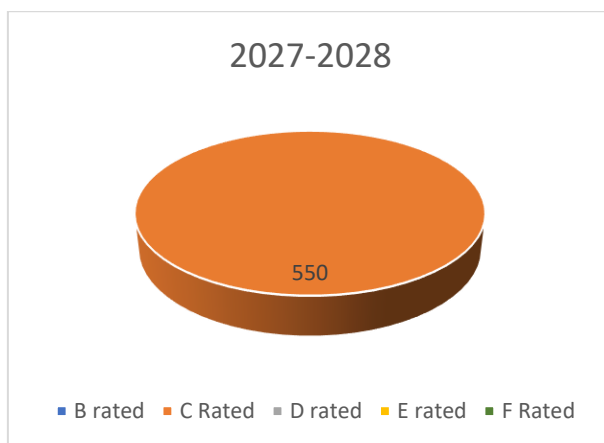
Retrofit target 2024-2025 with priority continuing to being given to completing D rated properties and commencing work on C rated properties



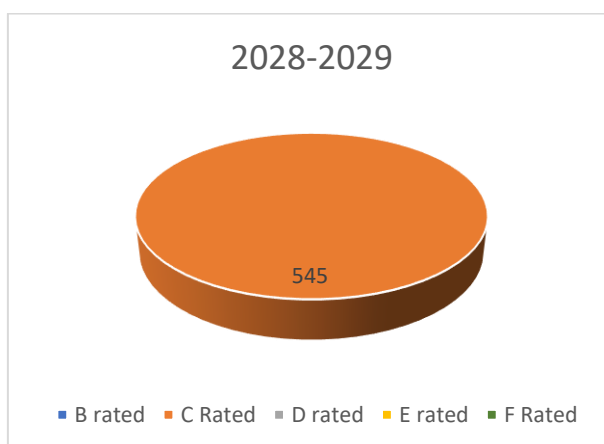
Retrofit target 2025-2026 entirely for C rated properties



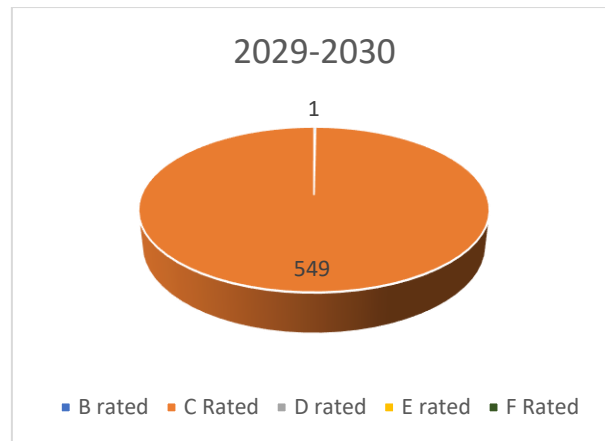
Retrofit target 2026-2027 entirely for 400 C rated properties



Retrofit target 2027-2028 entirely for 550 C rated properties



Retrofit target 2028-2029 entirely for 545 C rated properties



Retrofit target 2029-2030 for the remaining (549) C rated properties
and the one B rated property

This data is based on those properties currently having an EPC rating and will need adjusting for the properties that are currently lacking an EPC rating. The additional EPC rating are currently on schedule for completion by March 2022.

APPENDIX THREE

Current stock

EPC Ratings

4,473 properties have currently been surveyed and given an EPC rating.

Of these:

- 1 is EPC B rated
- 2969 are EPC C rated
- 1467 are EPC D rated
- 29 are EPC E rated
- 7 are EPC F rated

Total 4,473

No properties are A, or G rated.

Fuel Type Breakdown

- Gas Central Heating – 4891 properties
- Electric storage heating – 14 Properties
- Solid Fuel – 1 Property
- Communal systems – 10 properties

Total 4,916

APPENDIX FOUR

Risks

Any project of this size and complexity will have risks.

However, we have identified a number of risks as well as the steps that can be taken to mitigate those risks.

A risk assessment follows:

Risk No.	Corporate Objective	Risk Description (Risk/Cause/ Consequence)	Date risk included in the Register	Risk Category	Likelihood	Impact	Inherent Risk Score	Mitigating Controls	Likelihood	Impact	Residual Risk Score	Action	Completion Date	Officer responsible	Target date to achieve target risk score	Target Risk Rating	HoS (Accountable)	Risk Owner SPO (or OPO if no SPO) (Responsible)
1	Great Place	Time Frame to deliver to 2030 - Failure to meet requirements of Net Zero Strategy 2030	22/12/2021	Corporate Priorities	4	5	20	1. Supply chains established and routes to specialist providers 2. council buy in and support 3. Pilots already established and proven methods	2	5	10	1. ring fence budget 2. take advantage of Govt initiatives and funding pots 3. create a partnership contract for specialist provider 4. Asset Management Service Review - including the formation of a dedicated Compliance and Energy	31/03/2022 31/03/2031 31/03/2023 31/03/2022	Simon Smith, Housing Asset Manager		8	Simonne Devall, Head of Corporate Services	Simon Smith, Housing Asset Manager
2	Great Place	Funding Volatility from Govt - With lack of govt funding and blended funding the council may fail to deliver the full transition to net zero	22/12/2021	Corporate Priorities	2	5	15	A funding forecast has been provided with industry knowledge and the reassurance that to date for a long period of time Govt have to support the delivery and uptake (the forecast is conservative)	1	5	5	1. Work closely with BEIS, Govt, stay up to date on funding availability and regularly re-forecast funding available to support the delivery and liaise closely with partnering providers	31/03/2031	Simon Smith Housing Asset Manager		5	Simonne Devall, Head of Corporate Services	Simon Smith Housing Asset Manager
3	Great Place	Climate Change -Not meeting Council's climate emergency declaration of being carbon neutral by 2030	11/03/2021	Corporate Priorities	4	4	16	<ul style="list-style-type: none"> Insulation Programme. Installation of low carbon boilers. Govt funding of £250k for pilot of 50 properties. Disposal policy to sell low EPC properties. No gas heating being installed on new Council developments. Sustainable measures included on all new developments e.g electric charging points, solar panels. 	2	4	8	Completion of Energy Strategy . Develop a programme of works to ensure all stock is carbon neutral by 2030	31/03/2022	Simon Smith Housing Asset Manager		6	Simonne Devall, Head of Corporate Services	Simon Smith Housing Asset Manager
4	Great Place	Supply Chain/Staff Availability and Success - Inability to supply works through lack of adequate, suitable qualified operatives, suppliers in desired locations with desired skills and training	22/12/2021	Corporate Priorities	4	4	16	<ul style="list-style-type: none"> 1. Tried and tested partnership contractor in place - Specialist frameworks in place to source a specialist partnering provider, previously known providers with FULL capability 2. Utilise Procure Public Framework for suitably qualified, experienced contractors who are capable of such delivery which remains compliant with EU procurement regulations, then appoint an independent retrofit 	2	4	8			Simon Smith Housing Asset Manager		8	Simonne Devall, Head of Corporate Services	Simon Smith Housing Asset Manager
5	Great Place	Ongoing monitoring, lessons learned and Agility of strategy - lack of resident buy in, unintended outcomes or problems with identified energy efficiency measures, poor design of measures identified, lack of post install monitoring of measures identified	22/12/2021	Corporate Priorities	3	4	12	Employ an independent or directly employed retrofit coordinator and evaluator to report, monitor retrofits, track lessons learned and tailor the approach to ensure our intended outcomes are achieved. Increase efforts via contractors and council own staff to educate, assist and gain confidence of residents to enable successful application of measures	2	4	8	1. Employ a retrofit coordinator and increase liaison with residents pre installs, during install and post install to design correctly in line with council goals and ambitions, engage more actively and openly report lessons learned. 2. Employ a remote monitoring whole house	31/03/23 31/03/31	Simon Smith Housing Asset Manager		8	Simonne Devall, Head of Corporate Services	Simon Smith Housing Asset Manager
6	Great Place	On going maintenance and after care of installed technology - Poor maintenance service, premature failure of measures and technology, reputational issues for the Council and a decline in customer satisfaction	22/12/2021	Corporate Priorities	3	4	12	Term partnering contractors for maintenance of property, assets and installed equipment which would be expanded to include new technologies via existing and new partnering contractors for the term of the delivery and after completion. Extended manufacturer warranties and a unique PPP Net Zero model	2	4	8	Procure and extend contracts with partnering contractors for a 10 year period to contractually obligate partners to maintain current maintenance service levels, warranty levels and comply with current KPI's on new retrofit tech for long term periods (including IT interfacing).		Simon Smith Housing Asset Manager		8	Simonne Devall, Head of Corporate Services	Simon Smith Housing Asset Manager

APPENDIX FIVE

Government policy

Legislation regarding net zero targets has been in place for some time but currently the Government requirement for net zero is 2050.

But the Government wishes to be at the cutting edge of net zero legislation, and it is possible that the legislation will be further tightened with announcements at the COP26 conference earlier this year.

This could be a government commitment to bring the net zero target forward.

Whilst the 2050 target is already very aggressive there seems little likelihood that Government will extend the compliance date again as this would be a public, and International, admission of failure.

Whilst different political parties have some differences of opinion over detail – all major parties agree with the need for urgent action regarding net zero, so even (potentially) with a change in National Government, the overall net zero issues will remain at the forefront of UK climate control legislation.

Nevertheless, the precise details of the net zero legislation can, and almost certainly will, change.

One area of Government activity relating to the net zero agenda is that of grant funding to undertake the necessary works.

Due to the costs (to Government) of the Covid pandemic, the Chancellor of the Exchequer has indicated that very large-scale Government funding of net zero programs will not be possible.

For this reason, as new funding streams are announced, it is vital that we respond with applications for such funding in a very timely manner – before those streams run out of money.

APPENDIX SIX

Stock transition

It is important to analyse what work is already planned. This work plan must be re-visited to ensure works on any individual property is not handled in two separate operations. It must be re-configured (if appropriate) for any such work to be undertaken as part of the retrofit activity.

This should be undertaken annually, in advance, as a partnership between St Albans, any retrofit co-ordinator and Morgan Sindall to align our programmes and co-ordinate trades/contractors and visits to rationalise activities.

There must also be an analysis of how any existing renovation/upgrading budgets can be reversed into the net zero programme.

Some properties (generally the older examples of the housing stock) will be uneconomic, or even impossible, to retrofit to achieve net zero on an individual basis. These should be considered for being sold off to private sector owners or even demolished and rebuilt using modern technology as the most economical way of achieving net zero. A Carbon Net Present Value exercise will be carried out for each property in the HRA portfolio to determine which stock will be recommended for disposal, redevelopment and energy efficiency measures to help achieve a carbon neutral position for the HRA stock by 2030

This must be aligned with the Councils' disposal policy.