READING BOROUGH COUNCIL
REPORT BY DIRECTOR FOR ECONOMIC GROWTH & NEIGHBOURHOOD SERVICES

TO:	**HOUSING, NEIGHBOURHOODS & LEISURE COMMITTEE**		
DATE:	**6 JULY 2021**		
TITLE:	**RBC APPROACH TO DELIVERING LOW CARBON HOUSING**		
LEAD COUNCILLOR:	**CLLR EMBERSON**	**PORTFOLIO:**	**HOUSING**
SERVICE:	**DEGNS**	**WARDS:**	**ALL**
LEAD OFFICER:	**ZELDA WOLFLE** **PETER MOORE**	**TEL:**	**0118 937 2285 (x72285)**
JOB TITLE:	**ASSISTANT DIRECTOR HOUSING & COMMUNITIES** **HEAD OF CLIMATE STRATEGY**	**E-MAIL:**	**zelda.wolfle@reading. gov.uk** **peter.moore@reading.gov.uk**

1. PURPOSE OF REPORT AND EXECUTIVE SUMMARY

1.1 This report presents a paper – "Low Carbon Homes – Key Issues and Challenges" to summarise current activity and shape the future development of Reading's approach to ensuring that housing in Reading makes the fullest possible contribution to the objective of a 'net zero carbon Reading by 2030', in line with Reading Climate Emergency Strategy and the Council's Housing Strategy. The paper summarises activity underway and proposals to reduce emissions from Reading's Council housing stock; highlights the scale and nature of the challenges associated with meeting the 'net zero by 2030' target for housing; proposes development of two Low Carbon Housing Action Plans (one for RBC housing stock and one for the private sector) as part of our response to these challenges, to be brought back to HNL Committee by March 2022.

2. RECOMMENDED ACTION

That Housing Neighbourhood and Leisure Committee:

2.1 Notes the significance of housing in delivering the ambition of a net zero carbon Reading by 2030, and the significant challenges associated with delivering this ambition set out in the paper at Appendix 1.

2.2 Notes the need to realign priorities and resources in the short and medium term to more effectively address the challenge of housing retrofit in Reading, and the steps being taken in this regard as set out in Appendix 1.

2.3. Supports the proposed development of Low Carbon Action Plans for (i) RBC housing stock and (ii) private sector housing as proposed in Appendix 1, to be brought back to HNL Committee by March 2022.

3. THE PROPOSAL

3.1 Current Position:

3.1.1 Reducing emissions from the housing sector has been identified as a key strategic priority in meeting both national and local 'net zero' ambitions (see section 1 of Appendix 1). Most housing in Reading does not meet the standards required to support this ambition, although RBC's own housing performs significantly better than the national average (see section 2 of Appendix 1).

3.1.2 Local policies are in place to ensure that new housing does not add unduly to Reading's 'carbon footprint', and RBC is leading by example with high standards in its own new housing designs (see section 3.1 of Appendix 1). However, the challenges of retrofitting Reading's existing housing stock (both RBC housing and non-RBC housing) are significant and currently beyond local means to resource (see section 3.2 of Appendix 1). Fuel poverty remains a key concern (see section 3.3 of Appendix 1), as does uncertainty around government funding streams (see section 3.4 of Appendix 1), though the economic opportunities associated with housing retrofit are significant (see section 3.5 of Appendix 1).

3.1.3 The Reading Climate Emergency Strategy and the Council's Housing Strategy set out the high-level commitment to develop a housing retrofit programme at scale across Reading, but more detailed action plans are now needed, for both RBC housing and private sector housing, to take this forward. The scale and level of ambition within these will in part be determined by the Council's appetite for and ability to put additional resource into this area.

3.2 Options Proposed

3.2.1 A number of initiatives are already underway which are moving Reading in the right direction. The challenge is to increase the scale and impact of these initiatives in line with the 'net zero by 2030' ambition to develop a more comprehensive housing retrofit programme for the Borough. Development of Low Carbon Housing Action Plans for both RBC housing stock and for the private sector are therefore proposed to supplement the Council's Housing Strategy 2020-25 and provide a more detailed road map for the Council's activity in this important policy area. Funding a programme of the scale required remains the key challenge but by combining our own resources with grant funding and offset income collected under the Local Plan 'Zero Carbon Homes' policy, for which housing retrofit has been identified as a priority, we can begin to scale up existing efforts.

3.3 Other Options Considered

3.3.1 The Housing Strategy makes a strong commitment to the headline aims and actions set out in the Reading Climate Emergency Strategy 2020-25 but does not elaborate on these, hence the need for specific action plans. The alternative would be to not produce these action plans, but this would be unlikely to provide the necessary clarity and direction for the Council's efforts to reduce emissions from housing in Reading.

4. CONTRIBUTION TO STRATEGIC AIMS

4.1 The recommendations in this report align with Corporate Plan priorities as follows:

- Healthy Environment: reducing emissions from housing is an essential element in delivering corporate plan commitments to a carbon neutral Reading by 2030.
- Thriving Communities: good quality, affordable and sustainable housing is an integral part of a thriving community, and the report illustrates how action in this area can contribute to this aim.
- Inclusive Economy: there are significant economic opportunities arising from the activity required to reduce emissions from the housing sector in Reading which are outlined in the report.

5. ENVIRONMENTAL AND CLIMATE IMPLICATIONS

5.1 The Council declared a Climate Emergency at its meeting on 26 February 2019 (Minute 48 refers). The aspirations set out in the Declaration were reflected in the development of the Reading Climate Emergency Strategy 2020-25 which was endorsed by the Council in November 2020, and further reinforced in the Council's Housing Strategy adopted last year. There are no direct environmental and climate implications arising from the recommendations in this report, though the paper makes clear the significance of housing in terms of the contribution it makes to Reading's 'carbon footprint' and sets out some of the steps needed to address this. Development of a larger scale retrofit programme for Reading would make a significant contribution to climate goals as well as representing a significant economic opportunity.

6. COMMUNITY ENGAGEMENT AND INFORMATION

6.1 Section 138 of the Local Government and Public Involvement in Health Act 2007 places a duty on local authorities to involve local representatives when carrying out "any of its functions" by providing information, consulting or "involving in another way". The Housing Strategy and the Climate Emergency Strategy were both the subject of consultation. The outcomes of these consultations have informed this Report and would similarly inform the development of the proposed Low Carbon Housing Action Plans.

7. EQUALITY IMPACT ASSESSMENT

7.1 It is not considered that the decision will have a differential impact on: racial groups; gender; people with disabilities; people of a particular sexual orientation; people due to their age; people due to their religious belief and therefore no Equality Impact Assessment (EqIA) is relevant to the decision. That said, efforts to address fuel poverty, which are described in the report, should generally have positive equalities impacts given the relationship between fuel poverty, disadvantage and some groups with protected characteristics.

8. LEGAL IMPLICATIONS

8.1 There are no direct legal implications arising from the recommendations in this report.

9. FINANCIAL IMPLICATIONS

9.1 There are no direct financial implications arising from this report though the report highlights the significant financial implications of tackling carbon emissions from the housing sector if the Council's ambition for a 'net zero carbon Reading by 2030' is to be achieved.

10. BACKGROUND PAPERS

- RBC Housing Strategy 2020-25
- Reading Climate Emergency Strategy 2020-25

APPENDIX 1: LOW CARBON HOUSING – KEY ISSUES AND CHALLENGES

1. POLICY CONTEXT

Key points:

- ***Housing retrofit is a central plank of the Government's strategy to deliver net zero by 2050***
- ***A massive switch from fossil fuels (gas and oil) to electrical heating will be required to take advantage of increasingly low carbon grid energy***
- ***Domestic energy efficiency (to reduce energy demand) must go hand in hand with renewable electricity (to decarbonise heating)***
- ***The resources being made available to achieve this nationally and locally, whilst significant, do not yet align with the net zero ambition***
- ***Domestic energy use accounts for c.40% of Reading's carbon footprint***
- ***The Reading Climate Emergency Strategy commits to the goal of a 'net zero Reading by 2030 and identifies (i) housing retrofit and (iii) building new homes to zero carbon standards as key priorities***
- ***RBC's Housing Strategy aligns with the Climate Emergency Strategy and development of Low Carbon Housing Action Plans for RBC housing stock and for private sector stock are now proposed to take forward these aspirations***

1.1 National policy context

In June 2019, Parliament enshrined in law a target committing the UK to reduce emissions by at least 100% below 1990 levels in 2050. This was recently augmented by a new target to reduce emissions by 78% by 2035. The body established to advise the Government on meeting these targets, the Climate Change Committee (CCC), has said that to meet them, the UK's housing stock needs to be nearly completely decarbonised by 2050 via the process commonly known as retrofit – a combination of energy efficiency measures to reduce energy demand, and renewable energy technologies to decarbonise the remaining energy which is used.

The CCC has pointed out that low-carbon heating technologies such as heat pumps cannot be deployed cost-effectively unless buildings are properly insulated and repeatedly advised that energy efficiency needs to be addressed immediately if the UK is to meet its statutory Carbon Budgets.

The energy performance of buildings is currently assessed by an Energy Performance Certificate (EPC) with buildings graded on a scale of 'A' (most efficient) to 'G' (least efficient), based on two measures: a fuel cost-based energy performance rating and a rating relating to CO_2 emissions. To work towards net zero by 2050, the CCC recommended that all buildings achieve EPC 'C' over the next 10 to 15 years. The latest Government data has indicated that 16 million homes in England (two thirds of the total) and nearly 19 million homes across the UK, have EPC ratings of 'D' or worse.

The Government's ambitions on energy efficiency therefore tend to be framed in terms of the aspiration for homes in England to achieve EPC Band 'C' by 2035 as a stepping stone towards the net zero by 2050 target. Many commentators, however, have argued this will be insufficiently ambitious, and sector experts have pointed out the strategic importance of housing retrofit in that, unlike net zero aspirations in

other policy areas like aviation, it is achievable with existing technologies. Delivery in this sector would therefore reduce the risk to the overall target from failure to do so in other sectors, and investment in it therefore represents a 'safer bet'.

Housing retrofit, and the role of local authorities in supporting its delivery, is, as such, already a high priority in meeting the Government's net zero ambitions and is likely to become more so as the challenges of meeting this target in other policy areas become more apparent. At the same time, the significant costs of retrofitting the nation's ageing housing stock remain a major challenge, particularly in the light of the economic impacts of the coronavirus pandemic. Whilst Government has announced several significant funding streams to support housing retrofit, it is widely accepted that these are not yet on a scale compatible with the net zero ambition.

1.2 Local policy context

Following the declaration of a climate emergency in February 2019, the Council contributed to the development of the Reading Climate Change Partnership's Climate Emergency Strategy 2020-25 and Policy Committee endorsed the Strategy at its meeting in November 2020. The Strategy explained that Reading produces over 500 kilo-tonnes of CO2 emissions annually with around 40% of this arising from domestic sources (heating, lighting and appliances). The Borough's emissions fell by about 46% between 2005 and 2018 (the latest year for which data is available), with the decarbonisation of grid electricity being a major factor in this.

The carbon footprint of a typical household is primarily derived from gas and electricity. Domestic gas has increased in proportion from 19% of Reading's carbon footprint in 2005 to 28% in 2018. Domestic electricity, by contrast has reduced in proportion to the town's carbon footprint from 16% to 12% in the same period. The reason for this is that electricity has become 'greener' due to less fossil fuel being used in the national generation mix. Gas on the other hand is a largely unchanged fossil fuel and whilst there has been a reduction in its use and a small amount of biomethane has been added, it is not getting appreciably cleaner.

The Climate Emergency Strategy therefore defined the following as a key priority on the pathway to net zero:

'Housing (retrofitting and building new homes and other buildings to low/zero carbon standards): we need to reduce energy use in domestic properties via 'deep retrofit' of existing property and ensure that new property is constructed to net zero standards' (Reading Climate Emergency Strategy, November 2020, p14).

The Strategy elaborates on this with a number of high levels actions in which RBC is identified as a delivery partner as follows:

- Energy reduction through a housing retrofit programme for Reading
- Changing behaviours that save energy
- Reducing fuel poverty
- Publish new housing strategy to incorporate retrofit

This last action was completed in 2020 when the new Housing Strategy was completed, reinforcing RBC's commitment to Climate Strategy objectives in this area. The complexity of the issues is such though that more detailed Low Carbon

Housing Action Plans (for RBC housing stock and for the private sector) are now considered necessary to map out a detailed way forward.

2. ENERGY PERFORMANCE OF HOUSING STOCK IN READING

Key points:

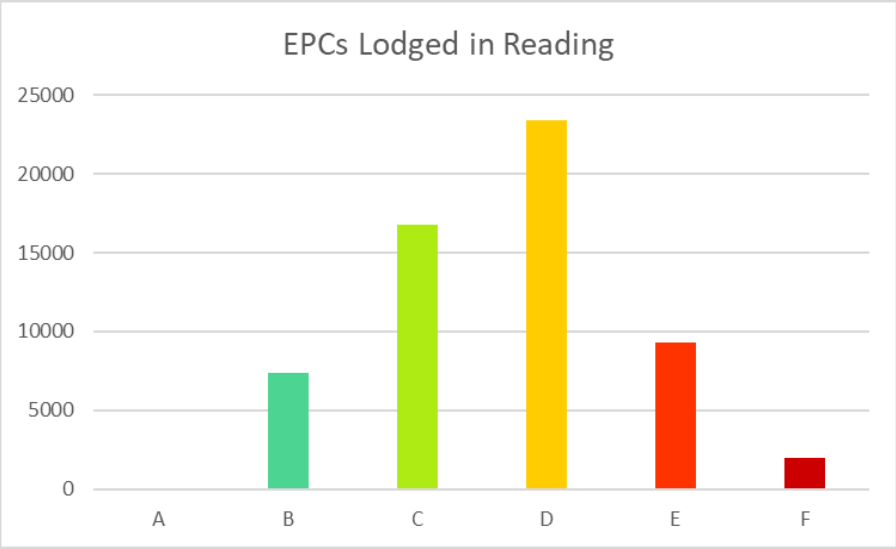
- ***The national average energy efficiency rating for housing is Standard Assessment Procedure (SAP) rating 65 (out of 100) equivalent to EPC band 'D'***
- ***The national average SAP rating for social housing is 69***
- ***RBC's own housing stock performs significantly better than the national average with an average SAP rating of 74 (equivalent to EPC band 'C')***

2.1 Introduction

There are over 70,000 houses in Reading[1] with about 55% of these in owner-occupation, 26% privately rented, 6% social rented housing and 3% other.

2.2 Energy efficiency in private sector housing in Reading

Much of Reading's housing stock is ageing and requires significant investment to reach zero carbon standards. EPC data for Reading Borough shows that there are a large number of EPC 'D' rated properties (39%) and around 19% of properties are 'E' or below.



The Housing Act 2004 states that 'a local authority must keep the housing conditions in their area under review with a view to identifying any action that may need to be taken by them.' Reading Borough Council is in the process of completing an updated Private Sector Stock Condition Survey to fulfil this obligation and, once published, this will enable the Council and wider partners to better understand the energy efficiency rating of dwellings in the Borough to inform the proposed Low Carbon Housing Action Plans referred to in 1.2 above and other interventions.

2.3 Energy efficiency in RBC Housing

[1] Berkshire Observatory, 2020

RBC's housing stock (HRA stock plus PFI stock and HfR properties) amounts to some 7,056 properties. Substantial capital investment has been undertaken over recent years to improve the energy efficiency of RBC housing with the installation of 'A' rated boilers, improved loft insulation, draught proofing, replacement windows and various solutions for improving wall insulation. As a result of this investment, RBC's current stock has an average SAP rating of 74 (better than the national averages of 65 for all housing, and 69 for social housing) which equates to EPC band 'C' (compared to a national average of band 'D').

3. KEY ISSUES IN ACHIEVING NET ZERO FROM THE HOUSING SECTOR

There are five related key issues in meeting the net zero ambition in the context of housing policy:

- Building new housing to net zero standards (RBC housing and private housing)
- Retro-fitting existing housing to net zero standards (RBC housing and private housing)
- Tackling fuel poverty and ensuring that the transition to net zero is achieved without disproportionate costs falling on those least able to bear them
- Availability of Government funding
- The economic imperative and opportunities associated with housing retrofit

These are discussed in more detail below.

3.1 Building new housing to net zero standards

Key points:

- ***There are plans to build c.7,000 new homes in Reading over the next decade – the carbon impact of these should be limited as long as Local Plan policies on Zero Carbon Homes are applied rigorously***
- ***New RBC housing stock is already being constructed to Passivhaus principles in line with the net zero ambition, setting an example for others to follow***

The planning policy context for Zero Carbon Homes in Reading

The Reading Local Plan, adopted in November 2019, includes a pioneering 'Zero Carbon Homes' policy which creates a strong platform to ensure that new housing in Reading aligns with the 'net zero by 2030' objective. This policy requires that all major developments of greater than 10 dwellings meet a 'zero carbon' standard defined as a minimum requirement of 35% below the regulated standard (Part L of the nationally-determined Building Regulations). Where this standard cannot be met via on-site measures, the policy provides for a payment to be made at a rate of £60 per tonne per year for a lifetime of 30 years, to be used to generate carbon savings elsewhere, thus 'offsetting' the residual emissions of the development.

The Council has previously agreed that the priority for allocation of any funding raised under the carbon offset policy should be housing retrofit. It will be important for a retrofit programme not to depend entirely on this income stream, however, as (i) it is likely to decrease over time as developers respond to the signal it sends to deliver zero carbon homes on-site (ii) in the event that national standards are raised to the level which now apply in Reading, the offset mechanism will be undermined and no longer necessary, at which point the income stream could disappear.

However, the income could be pivotal over the next few years, during which time it is expected to peak, in adding scale to Borough-wide retrofit efforts.

It is too early to judge how effective the Zero Carbon Homes policy will be in practice, but it does mean Reading is well placed to insist on high standards in all new housing development which align with the Council's net zero ambitions, as long as we are successful in ensuring compliance with the policy and are supported by, for example, the Planning Inspectorate, should cases be taken to appeal.

RBC commitment to low carbon design in its own housing stock

RBC has set an excellent example for new housing in the Borough by adopting high standards in its own developments, exemplified by the principles adopted for the Wensley Road development in Coley, namely:

- All dwellings designed to Passivhaus standards, achieving space heating consumption of less than 15 kWh/m2/a (a key requirement for Passivhaus design)
- A communal wet distribution heating network for space heating and hot water provision to dwellings, supplied from a central air source heat pump (ASHP);
- Individual ASHPs serving space heating and hot water to each townhouse;
- Solar PV panels on house and apartment block rooftops for renewable electricity;
- The intention to achieve the zero-carbon homes policy via on-site measures rather than relying on carbon offsetting payments to reduce emissions to zero.

The Council has also acknowledged that refurbishment rather than replacement of existing, good quality homes provides an opportunity to make vast savings in terms of embodied carbon of new construction materials. This is particularly true for a large, well-constructed residential development such as the existing homes in Wensley Road, where it is viable to improve the buildings fabric to meet and exceed modern standards. The proposed refurbishment of the existing homes (currently subject to planning approval) is intended to address resource efficiency, environmental protection and to facilitate and encourage sustainable behaviours for residents. The key elements can be summarised as:

- A fabric first approach to the building envelope, aspiring to achieve Enerphit standards for thermal performance, combined with the installation of Mechanical Ventilation with Heat Recovery (MVHR) systems to improve internal air quality and ventilation
- Supporting active travel through increased provision of safe, secure and easily accessible cycle storage, combined with improved connections to the green travel network provided as part of Phase 1 works
- Encouraging and supporting residents to improve recycling habits by providing new user-friendly refuse, recycling and food waste facilities
- Providing enhanced external landscape with increased biodiversity value, creating a key link with existing rich natural habitats in the surrounding area
- Making effective use of resources by re-using materials on-site where possible, reducing waste and specifying materials with low embodied carbon, minimising waste and reducing material transportation
- An holistic approach to improving the environment for existing residents leading to a positive impact on mental health and personal wellbeing.

If all housing developers were to follow the Council's example, the challenges associated with ensuring that new housing does not add to emissions from the housing sector would be greatly reduced.

3.2 Retro-fitting existing housing to net zero standards

Key points:

- ***Modelling suggests that the majority of Reading's houses would need to be brought up to an EPC 'B' rating by 2030 to align with 'net zero' ambition.***
- ***Reading has over 70,000 houses, many of them ageing and in need of retrofit. The cost of this will vary but has been estimated at an average cost of £30,000 per house, equating to c£2 billion for the Borough as a whole***
- ***RBC can be proud of its record of investment and innovation in domestic energy efficiency and retrofit in its own housing stock, with numerous projects now taking this forward***
- ***The cost of further improving RBC's own housing stock to net zero standards would, however, be very significant - estimated at an additional £21m per year to 2030 on top of the existing total annual maintenance budget of £16m***
- ***In addition to cost, significant logistical and technical challenges need to be overcome to retrofit RBC housing at the scale required.***

While it is vitally important that zero carbon homes policies are applied to new development, doing so in reality only takes the 'sting' out of growth in emissions which would otherwise occur from the housing sector as a whole. The great majority of emissions from the housing sector will continue to arise from the existing homes in Reading, most of which are in need of some form of retrofit to bring them up to 'net zero' standards. This section describes the key issues facing both RBC housing and non-RBC housing in this context.

Non-RBC housing

Many houses in Reading have already installed basic energy efficiency measures such as loft and cavity wall insulation, but a large number of properties are Victorian and built before the building standards required cavity walls. These properties are regarded as 'hard to treat' requiring solid wall insulation, either externally or internally. The historic character of the area also becomes a major consideration as there is a risk of substantially changing the character of properties that are externally clad with insulation. There are many other challenges associated with historic properties such as the air handling and windows and doors. For this reason, care is required in the approach taken.

Other post-war housing includes construction types which are not easily insulated, and many properties will require bespoke wall insulation solutions which would be expensive to install, meaning that the payback would be over a long period making it unattractive to home owners without subsidy. Housing built in the 1960s onwards will typically have cavity wall insulation and many of these will have already been filled - but finding those that are not and also where loft insulation top ups are required remains a priority. The addition of further low carbon heating and renewable technologies could bring this type of property to a reasonably high level of efficiency. Modern homes tend to have an EPC of 'B' and may benefit from renewable energy installations and in many cases may move to heat pump technologies from gas.

In order to achieve the aim of net zero carbon, modelling suggests that the majority of Reading's houses would need to be brought up to an EPC 'B' rating by 2030. The

Minimum Energy Efficiency (Standards) Regulations (knows as MEES) require rented homes to reach EPC band 'C' by 2030 'where practical, cost-effective and affordable'. The private rental sector in Reading represents 26% of the total and, assuming compliance is achieved, that proportion of the properties in Reading should reach band 'C' by 2030, but additional investment would be required for them to reach band 'B' which is necessary to align with the net zero by 2030 target. Local authorities have a potential role in enforcing compliance with MEES but there are significant challenges around the number of exemptions from the Regulations and resource requirements associated with enforcement. There are, as yet, no statutory requirements for improvement in the energy efficiency of existing owner-occupied homes which make up 55% of the total in Reading.

With an estimated cost of 'deep retrofit' of some £30,000 to bring each property up to EPC band 'B', this clearly represents a huge logistical and financial challenge both locally and national – a potential cost of c.£2 billion for Reading Borough area alone.

RBC housing

The Council is using its own housing stock to lead by example in terms of the general standard of its properties and has a good track record of investment in energy efficiency as summarised in 2.3 above. A number of actions have already been taken in the housing retrofit area as part of the Council's response to the climate emergency declaration, as a result of which:

- All RBC housing refurbishment projects have a key goal of being as energy efficient as possible, cutting our carbon footprint and reducing waste
- Alternative forms of heating are being investigated and tested with a view to replacement of the existing gas central heating programme, including trials of alternative technologies
- The cost:benefit equation for installing Triple Glazed windows in place of the existing double-glazing programme, including prospective trial installations, is being reviewed
- Loft information data is being reviewed with a view to targeting the remaining properties which have less than 300mm
- Electrically heated properties which have cavity walls are being reviewed with a view to establishing the effectiveness of the insulation – any that is not up to current standards will be stripped and renewed using grant funding where possible
- Mechanical Ventilation with Heat Recovery (MVHR) is being examined and installed as an alternative to extract fans
- A programme of upgrading insulation to Cross Wall properties is continuing
- Increased use of solar panels on the existing stock is being investigated to supplement the 457 Council homes which were equipped with solar in 2014-15

In addition, in terms of the wider supply chain, the Council is:

- Encouraging trades to recycle, specifically using scrap metal bins when stripping out old fittings and heating systems
- Working with suppliers to reduce single use plastic products and ensure that materials supplied meet low carbon standards
- Encouraging suppliers and contractors to increase energy efficiency and reduce carbon usage through increased weighting of these elements within specifications and tender evaluation

- Working with trades to reduce the number of trips to and from stores and therefore reduce fuel usage
- Encouraging tenants to purchase energy from renewable generators

The Council has also been taking advantage of the Government's Green Homes Grant Local Authority Delivery (LAD) Programme to supplement our existing plans. The Council has secured up to £805,000 of LAD funding to install measures on its own and private housing stock. Scheme delivery is in phases with the first phase concluding this summer and the second phase then beginning and concluding at the end of the year. A third phase is being planned and further rounds are expected to follow.

A project developed under the LAD programme has enabled installation of external wall insulation as part of a whole house retrofit into 12 properties in the Norcot area of Reading. Under the LAD scheme the Council is required to work with private sector householders in the same area to install external wall insulation and other measures.

The council is also installing Air Source Heat Pumps into some of its housing blocks to begin the move away from gas powered central heating. Work has started in the first block of forty flats and a second block is being planned. A further stage of the project will work with landlords of Houses of Multiple Occupation and home owners to install a range of measures, utilising LAD funding wherever possible.

We are learning from these projects as we go but feedback from residents has been very positive. Scaling these pilot projects up will, however, be the main challenge: while RBC housing stock is relatively energy efficient compared to the national average, the investment required to bring it up to a standard compatible with the 'net zero by 2030' target would still be very significant. In broad terms it is estimated that a total investment of c£210m would be required to achieve the maximum potential carbon reduction currently available for RBC's housing stock. While there will no doubt be further opportunities to attract grant, at present properties rated as EPC 'C' or higher are not eligible for grant funding which reduces the Council's ability to benefit from them as most RBC properties are already in this category.

Approximately £60m is already built in to the 30-year Asset Management Plan as expenditure up until 2030 (e.g. for window replacements or central heating upgrades already identified as required prior to 2030 which will now be carried out to enhanced energy efficiency standards). This still means, however, that meeting the 'net zero by 2030' target for RBC housing stock would require an additional investment of £21m per year over and above the £16m total annual budget currently identified for the entire maintenance and refurbishment budget.

In addition to cost, retrofitting RBC's housing stock raises several other challenges:

- Simply changing from gas central heating to air source or ground source heat pumps could increase heating costs as gas is still substantially cheaper for space heating – this highlights the importance of deploying energy efficiency measures in combination with renewable heat sources
- Operating costs of heat pumps can be significantly reduced by improving insulation, improving air tightness, providing Mechanical Ventilation with Heat Recovery and from off-setting running costs with solar PV – however, some properties may be difficult to improve or equip with these technologies

- The scale of acceleration of the programme that would be required to achieve net zero by 2030 would present major logistical and capacity challenges
- The widespread use of key meters in social housing is problematic in that the energy providers tend to charge more for this facility, and as key meters will not necessarily work effectively with some of the most energy efficient systems
- Communal heating systems for some blocks may be required which would require the Council to be registered as an energy supplier, creating an increased need to manage energy usage centrally and recharge tenants individually
- The new build program may involve substantial demolition and redevelopment of end of life stock, creating a need to ensure that investment is not being made on stock that will ultimately be demolished

3.3 Fuel poverty and energy efficiency

Key points:

- ***10.3% of households in Reading live in 'fuel poverty' – a typical proportion for an urban unitary authority but higher than the average for Berkshire***
- ***The Council has taken advantage of Energy Company Obligation (ECO) funding and operated a Winter Watch scheme to help c.250 people per annum in fuel poverty***
- ***Officers have explored the potential for an ECO Flex scheme for Reading, but this is not recommended as the scheme focuses on gas boiler replacements (thereby locking in dependence on fossil fuels) and ends in March 2022***

The condition, age and design of houses affects how easy they are to heat and thereby their energy efficiency. Homes with poor energy efficiency are more expensive to heat and therefore it is more likely that householders with low incomes will suffer from 'fuel poverty'. The latest data (2019) showing the number of homes that are in fuel poverty in Reading is 10.3%. Whilst this is typical of other similar urban unitary authorities, it is considerably higher than the average for Berkshire.

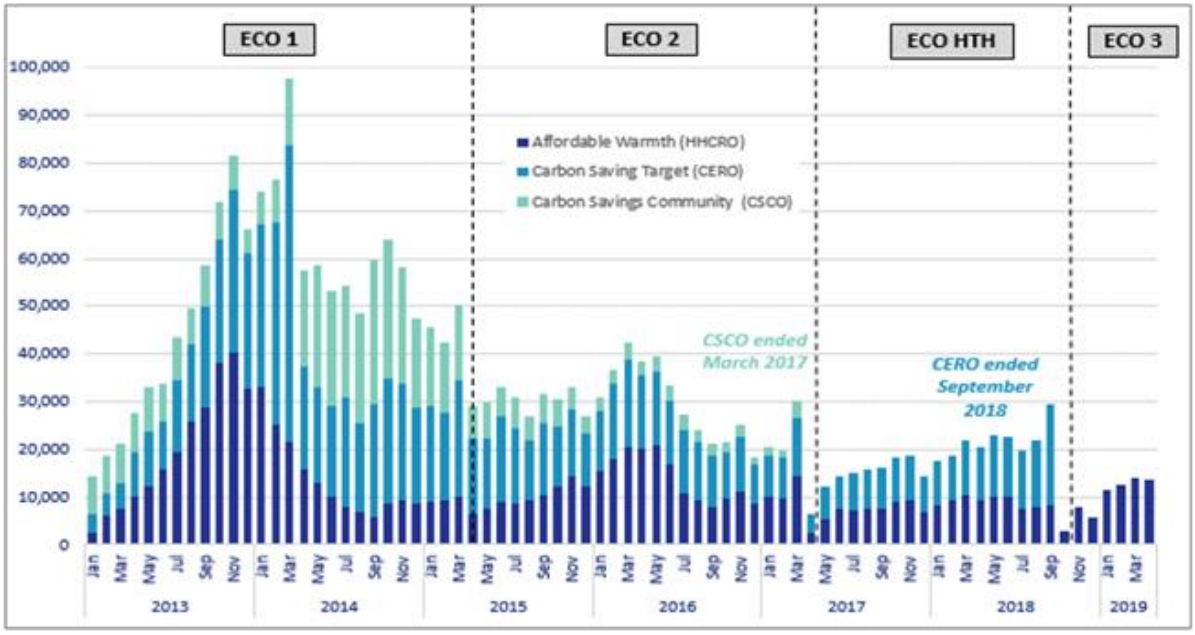
RBC has in some years run a fuel poverty programme called Winter Watch. An officer is available to visit householders who are struggling to heat their homes to help them to secure cheaper energy and improve their properties, comfort and health. The scheme has helped c250 people per year. Various Government funding streams have supported upgrading of household insulation and other energy efficiency measures. Previous schemes have focussed on lower cost options such as cavity wall and loft insulation. After the failure of the Government's Green Deal in 2015, which was intended to provide around 10% of the cost of measures with the remaining 90% coming from householders through forward financing the measures against the energy savings, the focus has moved more towards directing funding to tackle fuel poverty.

The Energy Company Obligation (ECO) scheme was introduced to ensure that energy companies paid through an obligation to reduce the consumption of energy in UK housing. Now in its third iteration (ECO3), the scheme has been refined to focus more on fuel poverty and is orientated more around boiler replacements with minimal support for external wall insulation. The number of measures supported nationally has dropped considerably over the years since the scheme was introduced. ECO3 continues until March 2022 and is focused fully on low income and vulnerable households.

ECO3 funding is awarded using a calculation which varies depending on the house type, measure etc. The funding allocations are likely to fully cover measures such as loft and cavity wall insulation and to make a substantial contribution to the cost of gas boiler replacement. The contribution to solid wall insulation however is minimal considering that the high costs of this work and fuel poor households are unlikely to be able to access the capital finance to invest in these measures. This means that the scheme has been relatively ineffective in this regard, albeit there is an obligation on energy providers to collectively deliver 17,000 such measures nationally. This number is relatively insignificant in meeting the challenge of 'hard to treat' homes which require solid wall insulation.

The graph below shows how the successive changes to the ECO scheme have affected the uptake of measures[2]. This suggest that the biggest opportunities for accessing ECO funding were to be had during the early part of the last decade.

ECO measures installed, by obligation, by month, up to end to end March 2019



A flexible approach to identifying eligible households was introduced in April 2017. Under ECO3 energy suppliers are able to meet up to 25% of their obligation under a sub-section of the scheme called ECO Flex (also known as LA Flex). This requires Local Authorities to develop and operate a scheme to deploy funding provided via the ECO3 mechanism.

Whilst RBC has utilised ECO funding to provide measures under the Winter Watch programme, RBC has not to date developed an ECO Flex scheme. Officers began exploring the potential for an ECO Flex scheme for Reading in 2020 but with the many other competing pressures facing officers over the last 12 months, were unable to make significant progress with this. The Council did, however, continue with its own energy efficiency programmes and gave priority to developing housing retrofit programmes including Green Homes Grant scheme which delivers similar objectives to ECO Flex and which offers a significant level of central government funding focused on addressing fuel poverty and carbon emissions in tandem.

[2] Parliament UK.

The ECO Flex scheme has a significant focus on gas boiler upgrades and the current phase is in any case due to conclude in 31st March 2022. Officers' conclusion is therefore that our efforts would be better focused at this point on alternative fuel poverty reduction measures which better align with our climate emergency aims (i.e. electrification of domestic heating accompanied by other energy saving measures) rather than developing an ECO Flex scheme which is in the process of winding down, and which potentially extends the dependence of beneficiary properties on fossil fuels. We would, however, retain the option of developing a scheme for future phases of ECO, subject to the terms of those future phases.

3.4 Availability of Government funding

The Climate Emergency Declaration made by the Council in February 2019 made clear that the ambition of a net zero carbon Reading by 2030 could not be achieved without significant changes in Government policy and funding streams.

The Government has made a number of funding streams available to stimulate housing retrofit including the Green Homes Grant which was targeted at homeowners. This £1.5bn scheme was launched in October 2020 and consisted of a voucher scheme offering £5,000 - £10,000 per householder to install low carbon measures. At the same time the Local Authority Delivery (LAD) Scheme referred to above in section 3.2 was launched.

Other funding streams include the Home Upgrade Grant, the first phase of which has already been allocated with further rounds will follow. This funding stream is directed at rural areas that are 'off gas' and where oil fuel is typically used and so is not applicable to Reading. A Social Housing Decarbonisation Fund first round is also underway, and a second round is due to open in the autumn offering £160m to social housing providers for projects to 2023 which include deeper retrofit.

The Green Homes Grant voucher scheme was seen as a key plank in the strategy to promote housing retrofit. Unfortunately, due to low uptake and supply chain and registration issues, the voucher scheme was scrapped recently, leading to significant uncertainty among homeowners and the industry. This exemplifies an historic trend of considerable uncertainty around 'green' funding streams from governments of all complexions which adds to the challenge of developing retrofit programmes at local authority level. We can, however, look to other local authorities for best practice which could be applied to Reading, and this will be a key activity to inform development of the proposed Low Carbon Housing Action Plans.

3.5 The economic imperative and opportunities associated with housing retrofit

Key points:

- ***Reading residents spend £90m p.a. on energy but subsidy is needed to persuade homeowners to invest in retrofit***
- ***The burgeoning market for retrofit represents a significant economic opportunity for 'Reading plc' to deliver inclusive growth and 'green recovery'***
- ***There are significant gaps in skills and capacity which need to be addressed – but these could represent an opportunity for RBC commercial services if we build our own skills and capacity to deliver retrofit at scale.***

The residents of Reading spend in the region of £90m per annum on energy. Energy efficiency works have been estimated to require up to £2bn of investment for Reading to become zero carbon by 2030. If property owners were able to make a ten-

year return on investment that could lever up to £900m of investment over the next decade. This represents a significant market opportunity. The challenge is that due in part to the low cost of gas, paybacks for many properties are longer than ten years. For this reason, it is important that the Council seek to secure and distribute grant funding, especially to those who could not otherwise afford to invest and for situations where properties are hard to treat. This emphasises the importance of substantial and consistent national funding streams being made available to deliver both national and local 'net zero' ambitions.

A scaling up of domestic retrofit would present significant economic opportunities for the Borough. Local installation companies and low carbon and environmental goods and services companies could grow in the local area creating many jobs with a variety of skill levels, contributing to a 'green recovery' from the coronavirus pandemic in line with the aspirations in Reading UK's economic renewal and recovery strategy, 'Powered by People'.

There is also potential for the Council's own commercial services to develop a market share to ensure high quality local services and job creation. Council housing maintenance staff are in the process of learning new skills and capabilities as the pilot projects described in 3.2 above develop. Currently there are major skills gaps within the construction sector and questions about the ability of the industry to deliver retrofit at the scale required, even if the funding were available. If Council staff can become proficient in these skills then this could represent a significant commercial advantage as the market for retrofit develops, providing an income stream to the Council to potentially scale up retrofit programmes.

4. DEVELOPING READING'S APPROACH TO LOW CARBON HOUSING

The analysis in sections 2 and 3 above sets out the scale of the challenge facing Reading in scaling up housing retrofit efforts. Development of Low Carbon Housing Action Plans (for RBC stock and for the private sector respectively) to complement Climate and Housing Strategies would help set out a more detailed road map to achieving this. Officers have begun work on this with a focus on RBC housing stock, but it will include details of how the existing maintenance and upgrade programme is reducing emissions as well as future plans to move away from gas towards electrification of heating, generate more renewable energy and adopt innovative energy saving technologies and designs.

5. SUMMARY AND KEY QUESTIONS

Figure 1 attempts to summarise visually the challenge of getting all housing in Reading to the standard necessary to align with the 'net zero by 2030' ambition. Each box in this four-box model is broadly proportionate in size to the number of properties at stake (existing or new houses planned to 2030), thus illustrating the scale of the challenge. Each box is also RAG-rated (green = easier, red = harder) based on two key parameters – the degree of control in the hands of RBC and the cost implications relative to currently available resources, thus illustrating the degree of difficulty anticipated in tackling the number of houses represented by each box.

Figure 1: scale of the challenge of achieving 'net zero by 2030' in the housing sector

Existing *New*

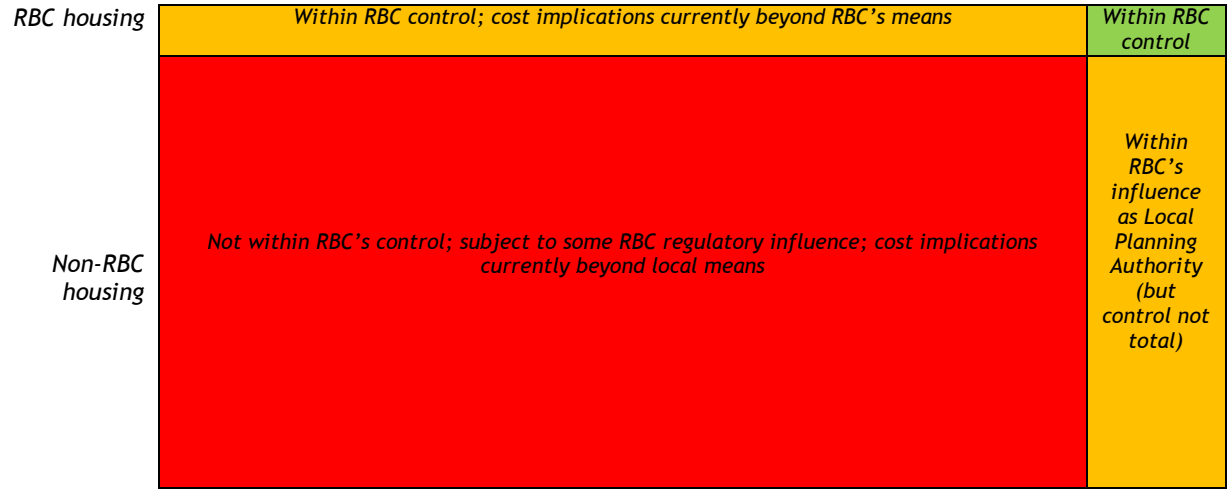


Figure 1 suggests that:

- Delivering new RBC housing to zero carbon standards is both within the Council's control and means – we are well on the way to achieving this already with our new housing developments and building the cost implications into existing project budgets via good sustainable design and construction practice
- Retrofitting all existing RBC housing to zero carbon standards, whilst within the Council's control, is currently beyond the Council's means, and even with a substantial increase in investment in this area we are likely to need to access alternative funding streams to bridge the gap
- Delivering new non-RBC housing to zero carbon standards should be possible as it is within the Council's influence as local planning authority, though this assumes that developers will comply with our Zero Carbon Homes policies, that planning decisions will apply them robustly and that the Planning Inspectorate/Secretary of State will support them in the event of appeals.
- Retrofitting existing non-RBC housing to zero carbon standards represents the biggest challenge, both in terms of scale and degree of difficulty, particularly in view of the recent closure of the Green Homes Grant to new applicants and uncertainty about what may or may not replace it.

  The key questions to be addressed are the Council's ability to (i) increase investment in retrofit for RBC housing stock (ii) development of a programme which practically supports retrofit in the private sector, both of which will be necessary if the 'net zero by 2030' ambition is to be realised. The proposed Low Carbon Housing Action Plans will help in setting out a road map and determine the best way of meeting these challenges.

May 2021