
Climate Change and retro fit update

Housing Scrutiny Commission

Date of meeting: 12th. April 2021

Lead director: Chris Burgin

Useful information

- Ward(s) affected: potentially all.
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1. Summary

The City Council has declared a climate emergency and the Housing Division has a part to play in the council's response to how we can reach the target of zero carbon by 2030. This report confirms what the Housing Department is already doing, what we have done in the past to improve the thermal efficiency of our homes, buildings and vehicles and our agreed actions.

2. Recommended actions/decision

That the contents of this report be noted

3. Scrutiny / stakeholder engagement

This report had been prepared to update members of the Housing Scrutiny Commission on the measure the Housing Division is taking to help tackle the climate emergency.

4. Background and options with supporting evidence

n/a, report for information only.

5. Detailed report

Cutting carbon emissions is something that the Housing Division have been doing for some time and we report on what we have achieved and how we achieve it as part of the annual HRA budget and rent setting report. The Climate emergency has brought this into more focus and has challenged us to do more and more quickly.

The ambition:

'Our ambition is to become carbon neutral by 2030 or sooner, this means reducing the city's and councils CO2 emissions to nearly zero, low enough to offset what is left. This is a huge challenge for the city and one which the local authority are taking seriously and one that cannot be delivered alone. It will take a collective effort from individuals, businesses and groups and organisations across the city backed by support from central government.'

Link to Climate Emergency strategy :

<https://www.leicester.gov.uk/media/kuuojdxw/leicester-climate-emergency-strategy-2020-2023-final-version.pdf>.

An overview of where we are now.

1. We are currently in the process of setting new annual carbon reduction targets designed to ensure we meet the ambition of becoming carbon neutral by 2030. Council housing accounts for approximately 16% of all residential housing in the city and as a result of the Housing Capital Programme CO2 emissions from council houses reduced by 58,523 tonnes between 2005 and March 2017 which puts us in a good position moving forward.
2. This has been achieved by window replacements, new central heating installations, new energy efficient boilers and controls, internal and external wall and roof insulation and solar panels.
3. The homes being built as part of our current housebuilding programme have been designed to maximise energy efficiency. Phase 1 of the newbuilds are being built to higher standard than current building control standards and Phase 2 of the new build programme will deliver a 70% improvement.
4. Bidding is ongoing and when there is an opportunity the Housing Division work with colleagues in the Energy Team to submit appropriate bids, the most recent one being the Green Homes Grant phase 2 which will deliver external wall insulation and solar pv to circa 180 council houses..

What are we planning to do next ?

We now need to do more to ensure we meet the Councils target to be carbon zero by 2030 and to try and achieve this we are:

For the housing stock:

- Council houses make up 16% of the total housing stock in the city, across all tenures. Our average EPC rating is C which is good, however this means that we have some properties that are performing below this level and we need to take action to improve the performance of these properties.
- We are commissioning environmental experts to carry out a review of our stock so that we can agree a road map to carbon savings and energy efficiency.
- We need to identify a list of measure per house type that need doing to make sure that each are as efficient as possible, this will help in two ways, firstly we can tailor the capital programme to help deliver these improvements where possible. Challenge ourselves and hopefully make better decisions, for example we may fit different boilers or increase the window specification to fit triple glazing as standard.
- It will also ensure we know what measures we need to carry out when we have future opportunities for bidding for grants to carry out energy efficient measure, rather than being reactive, we will know exactly what each property type will need and we will have models for a whole house approach as well as an incremental approach.

- Therefore, the plan is to approach the issue in two ways, by securing funding to deliver schemes and by maximising business as usual activities. As a result of this work we will know exactly what we need to do to our housing stock to make it as energy efficient as it can possibly be and we will be able to ensure we tackle the worst performing properties first

The wider capital programme:

Boiler upgrades:

All new boilers we fit are energy efficient A rated combination boilers. All radiators have thermostatic radiator valves. Both these measures are being constantly reviewed to make sure we use the most energy efficient products

LED lighting upgrade

We have almost upgraded all of our communal lighting to energy efficiently LED fittings, all fitted with sensors to ensure that they use as little energy as possible. The programme is almost complete, and we expect to complete all areas during the next financial year. Not only has this brought energy efficiency improvements it has made the communal spaces bright and more attractive, this has been welcomed by the residents.

Insulation programme

We have an ongoing programme of upgrading loft insulation levels to our tenant's homes, this is either by request from the tenant or as a result of other works being carried out, for example a new roof being fitted. We also target areas of the city based on data we have that relates to the last insulation date and the thickness of insulation previously installed.

All our homes that have cavity walls have had cavity wall insulation.

EPC's

We carry out Energy Performance Certificates on all our properties that are let, this gives us a clear picture on how our stock is performing, on average we have a EPC score of 'C' which is good and better than in the private rented sector.

New housing:

In August 2020 Housing Scrutiny commission members were updated on the energy efficiency measures being introduced to phase 2 of the new build council housing programme, in summary they are:

Layout and Orientation:

The layout of the scheme has been designed to ensure that as many plots as possible have a south east or south west orientation to maximise solar PV generation. However, it has not been possible to do this on all plots. Main living rooms have also been designed to have a dual aspect to maximise the potential for solar gain and cross flow ventilation to limit any overheating

All new homes will be built to better thermal efficiency standards than the current building regulations require, insulation levels will be higher in the walls, roofs and floors and this will ensure that overall the improvement is 70% higher.

Air to Air Heat pump:

An air source heat pump takes heat from the air and boost it to a higher temperature, the pump needs electricity to run but should use less electricity than the heat that it generates

Solar PV panels:

PV panels convert solar radiation into direct current electricity. They are a very good source of renewable energy as they convert the most abundant source of energy on the earth, the sun, into the most useful source of energy, electricity.

PV panels are silent in operation, they have no moving parts, have low levels of maintenance and a long-life expectancy. They are connected into the grid via an inverter and more recently battery technology has improved so the electricity can now be stored.

Solar PV is more efficient in lower temperatures; they should be located to avoid over shadowing and preferable face due south at an angle of 35 degrees. The output of PV panels is measured in KWP, kilowatts peak. The average cost of an installation will be between £2k - £3k.

We are proposing installing 6 x 250-watt panels to each of the roofs, with the exception of two plots that will need 8 panels to achieve the required EPC 'A' rating

All dwellings will have an EPC rating of A and the predicted annual electricity bill of £440 per year, or £36 per month, which compares well to £443 per year for a similar sized Passive House.

This is compared to the average dual fuel energy bill in the UK of £1,138 per year or £93.83 a month. (Ofgem 2020)

This was an improvement on the energy efficiency of the 29 phase 1 properties, however this improvement for phase 2 should not be seen as a static list of measures, each phase will be assessed individually, lessons learnt and new technology and ideas incorporated into new schemes to keep progressing.

Offices and communal spaces:

As we emerge from the pandemic Estates and Building Services has been commissioned with looking at new ways of working, a survey has recently been sent to all heads of service, so they can be part of this process, it is not possible to second guess the outcome but Housing staff will play a role in ensuring these new ways of working are implemented. Housing are hopeful that this will have a positive impact on the amount of energy we use to deliver services.

Work is already ongoing to improve Corporate Buildings and the Council has recently been successful in securing almost £25m, to undertake work to decarbonise Council owned offices and buildings. The award is one of the biggest individual awards from the government's decarbonisation fund.

There are also other less obvious and smaller changes that have occurred, the use of new bulk mailing systems, more online support for customers and the reduction of face to face contact and the need for customers to make car or bus journeys to talk to us, all have a positive effect on the environment.

There will still be a need for buildings and when we are in a position to implement the new ways of working the recently refurbished former neighbourhood housing office at Jersey Road will be one of the locations used. The building has been stripped complete and new high levels of wall and loft insulation installed, the gas boiler removed and air source heat pumps fitted, a heat recovery and ventilation system installed and solar panels fitted on the roof to generate the electricity to help power it all.

The improvement will not stop at the buildings we use but we are looking to install solar pv panels and battery storage to the roof of our larger blocks of flats to generate renewable energy to power the communal lighting and lifts, which will reduce the carbon footprint and reduce energy bills that we apply to service charges so tenants and leaseholders will also benefit financially.

Fleet.

Fleet Services sits in Housing and they manage the corporate fleet of circa 750 vehicles, of various types from 32 tonne hook lift lorries, grit spreaders, busses to transport children, mopeds and vans that the operatives use to repair our tenant homes.

In 21/22 we have a vehicle replacement budget of £3.1m, this will fund next year's part of an ongoing programme of vehicle replacements to ensure the fleet is fit to deliver essential services across the city. The budget is agreed annually.

During 2020/21 Fleet Services took delivery of 60 new vehicles, including 14 x full electric vehicles, thus bringing our total ultra-low emission vehicle total to 33, and 46 x Euro 6 compliant vehicles.(these are the very low emission diesel engines) In addition, we also tendered for and are awaiting the delivery of a further 48 vehicles, including 5 x full electrics, and 43 x Euro 6 compliant vehicles. In comparison to the mainly Euro 3 vehicles that are being replaced, Euro 6 vehicles offer massive benefits on emissions, specifically a tenfold cut in particulate matter (PM), an 84% reduction in Nitrogen Oxide (NOx) and a 69% decrease in combined Hydrocarbons (HC) and NOx.

The Council will continue to work to reduce the number of vehicles as it has done over recent years by reducing from nearly 1000 vehicles to the current 750 and will also where practically feasible always look to purchase electric vehicles replacements first.

Proactive in bidding for money.

GHG-LAD Phase 2 – Brief overview

Following on from the roll out of the Green Homes Grant – Local Authority Delivery (GHG-LAD) Phases 1A & 1B, BEIS have now launched Phase 2 of the available funding to support their programme to deliver low carbon measures to low income households.

For Phase 2 we have been awarded a capital allocation of **£2,125,500**.

Our funding bid is at a preliminary stage and we will be submitting a multi tenure bid to support works to improve approximately 180 of our council housing stock (Solid Wall insulation and Photovoltaic panels). In addition, there will be further support to approximately 100 owner occupier and private rented sector properties (Solid Wall insulation & supporting measures), these measures will be fully supported with BEIS funding. The potential total bid value is in the region of £ 3 million and the scheme (current timescales) needs to be completed by end of December 2021

Previous Retro fit schemes

In previous years we have successfully bid for ECO (energy company obligation) and CESP (community energy saving programme) to externally insulate 1330 homes and fit solar pv panels on 1264 homes.

Housing are part of the wider Carbon Reduction board and we have the following actions in the plan:

Storage heater upgrades

To carry out a feasibility study, secure funding and develop a programme to replace older electric storage heaters, in council housing properties where a wet heating system is not suitable, with more efficient modern equivalents with better controls. The feasibility study will be carried out in 20/21 and the work completed in 21/22.

District heating - Beatty Avenue

In collaboration with Engie, give consideration to upgrading the biomass plant at Beatty Avenue in order to reduce the reliance on top up heat provided from gas boilers in winter months. It is hoped that by doubling the capacity of the plant room and additional 240 tonnes of carbon per year can be saved. We are currently working with Engie to see if and when this is possible.

Heat metering - technical survey

Assess the feasibility of installing heat meters in council housing connected to the district heating network. Heat meters will allow for tenants to be charged for the heat they actually use, encouraging efficiency. The survey will be carried out in 21/20 and then based on the outcome of the survey a phased implementation plan will be devised based on a delivery period of 3-5 years.

External wall insulation

Carry out a feasibility study, secure funding and develop a programme to install external wall insulation on more council housing.

Solar PV

Carry out a feasibility study, secure funding and develop a programme to install solar PV panels on council housing, looking at both individual houses and larger blocks with communal areas. PVs on larger blocks could provide electricity to help power lighting, laundries and lifts in communal areas. There are 11,294 properties that may be able to benefit from solar pv and 1,545 blocks. The feasibility study will be carried out in 21/22 and any implementation plan based on a delivery period of 3-5 years. This could result in lower energy bills for tenants and a reduction of 16,000tonne of carbon.

Council house carbon reduction plan

Appoint consultants to review specific/common house types to develop a specification of works that if carried out, either together or incrementally, as part of the existing HRA capital programme, or as a result of specific projects/successful bidding for funding will deliver low carbon homes. We are drafting the brief now.

We are also working with other division to deliver the following:

Climate toolkit for capital projects

Develop and implement a procedure, guidance and targets to address climate change in all capital projects. To include:

- procedure and guidance for assessing the climate implications and carbon reduction options for any capital project, based on the Energy Hierarchy
- corporate minimum requirements for carbon reduction and energy efficiency, and aspirational target(s) to be considered, at a whole building level
- Authority's Requirements: where appropriate, technical standards and minimum requirements for individual building components and construction/demolition activities.

Capital projects programme management - climate considerations at gateway stages

Build in a requirement to use the climate toolkit to address climate implications in each capital project from the outset, ensuring that proposals cannot progress to approval without proper consideration of carbon reduction, based on the Energy Hierarchy, as well as climate adaptation opportunities and requirements - with appropriate measures costed and confirmed to meet agreed targets and performance standards.

Capital projects - carbon tracker

Develop and implement a system for recording carbon reduction and climate adaptation targets and measures agreed for all capital projects and council-supported development schemes, and for tracking their progress to implementation - enabling oversight of climate outcomes by managers and senior decision-makers.

The HRA capital programme has always reported of the carbon savings the division has achieved and the items in the plan are in addition to the work that we are already doing:

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6. Financial, legal, equalities, climate emergency and other implications

6.1 Financial implications

No comments sought, for information only

6.2 Legal implications

None sought, for information only

6.3 Equalities implications

None sought, for information only

6.4 Climate Emergency implications

None sought, for information only

