

## Section 7: Towards carbon neutral homes

In 2019 Bury Council declared a climate emergency and set an ambitious target to be carbon neutral by 2030. The scientific evidence on climate change is unequivocal with the United Nations declaring, at its 2019 General Assembly, that “we may have just 11 years left to limit a climate change catastrophe”. As a society we need to act now and decisively to slow down and limit the impact of climate change.

Bury is in the process of developing a Climate Action Strategy that will set out where we need to get to, the direction we must travel and the wide range of actions we need from national Government to help us to meet our targets. It is designed to be consistent with the GMCA 5 Year Environment Plan for Greater Manchester which lays out how the city region will progress to carbon neutrality by 2038 but it is more ambitious; we will aim to deliver carbon neutrality in our borough by 2030.

This is an extremely challenging target. Achieving it probably requires full decarbonisation of the national electricity grid and, while significant progress is being made, this is not projected to happen until sometime after 2030. However, one of the silver linings of the Coronavirus lockdown period has been a glimpse of what a low carbon future might do to improve our environment. In Bury, we are determined to do all we can to ‘build back better’; to build a more sustainable economic future that works for Bury as we deliver the low carbon, climate resilient environment our planet so desperately needs.

We are encouraging people to use greener travel by improving connectivity and travel options across the borough. Proximity of new homes to our town centres, places of work and public transport hubs will help to reduce reliance on cars when planning the location for new homes. Active travel measures, to improve residents’ ability to walk and cycle around the borough, will be included in our plans including for town centres. We are intending to plant thousands of new trees to support carbon capture as well as creating pleasant healthy green outdoor spaces within our urban areas for people to enjoy.

We are intending for Bury to become an exemplar, showing the way and creating a sense of urgency to influence the Government and reduce the current UK target which is for net zero by 2050.

### 7.1 The challenge for housing

Around 34% of Bury’s emissions come from domestic gas and electricity uses<sup>18</sup>. Significant progress has been made over the last few years, but the focus has been on measures that are relatively straightforward. An analysis of the energy performance data of Six Town homes shows that to improve beyond a Band C rating cannot be achieved without investment in renewable energy measures such as solar panels, air source heat pumps or solar thermal which represents a step up in investment. This is the case for private housing too.

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<sup>18</sup> Bury Council Carbon Action Strategy (draft)

The housing sector is at a crucial stage; the steps we now need to take towards low carbon are bigger and come with greater risk. There is a sector skills challenge to overcome to retrofit at scale: a lack of capacity and capability for making and installing components successfully. This comes with significant upfront costs that either need to be passed on to the consumer or subsidised in some way.

Our housing targets are:

- 100% net zero-carbon new homes by 2028
- 100% carbon neutral homes by 2030, 20 years ahead of the UK target

Bury Council will do everything it can to achieve these targets. However, it requires some steps to be taken that are not within the Council's control. It means:

- Making sure electricity is sourced from certified renewable or zero carbon sources
- Ceasing fitting new gas-powered appliances such as boilers as a matter of urgency
- Identifying, sourcing/producing and installing modern renewable energy technologies and making provision for retrofitting homes with new sources and technologies that may emerge in future years
- Increasing energy efficiency of all homes across all sectors
- Offsetting any outstanding emissions through carbon capture
- An earlier national target date for a decarbonised electricity grid (from 2050 to 2030)

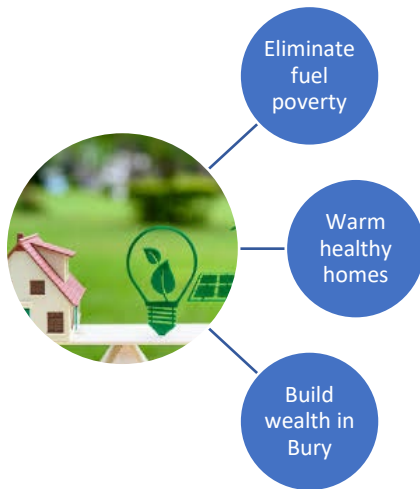
This housing strategy provides more detail on what we will do to endeavour to achieve this target for all Bury's housing, both new and existing dwellings. How we do this will vary depending on who owns the homes. 90% of properties in Bury are privately owned and are outside the direct control of the council. This means we need to take a different approach to homes owned by the Council (Six Town Housing), by a housing association, by a private landlord, by an owner occupier.

## **7.2 Health and economic benefits of low carbon homes**

Low carbon homes will deliver health and social benefits too. Respiratory problems are a significant factor in admissions to hospital<sup>19</sup> (quite apart from COVID-19 cases) and we are keen to eliminate the impact of poor housing as soon as possible.

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<sup>19</sup> Find reference



Properly insulated, energy efficient homes will be warmer with lower fuel bills; they are cheaper to run and healthier to live in. Innovative green businesses that can contribute to emergence of an effective ‘climate change industry’ could help to create community wealth for Bury as well as to enable the shift to carbon neutral.

### 7.3 Our approach to delivering low carbon homes

The industry in low carbon and renewable technology is not yet operating at scale; the technology is developing all the time and it is not yet available at realistic prices while the maintenance supply chain for the new technologies is immature. A recent Government consultation in May 2020 demonstrated that the government is not yet clear on how the UK will meet climate change targets for housing, nor how local authorities will be supported. However, the Government is pushing forward on several important strands and a route map to energy efficient, low carbon homes for the UK is expected to emerge ahead of the 26<sup>th</sup> UN Climate Change Conference of the Parties (COP26) that will take place in Glasgow in November 2021.

Achieving our carbon neutral targets across the borough’s 84,000 existing homes by 2030 as well as all new homes built by 2028 will require a dynamic and future-facing approach that assesses, supports production of and embeds new technologies as they emerge.

Our overall approach will be to fast-track our activity on existing Six Town homes and any new homes that Six Town will build and use our learning to develop our expectations of and support for private developers, landlords and owners to take action. We will also explore options for a housing provider to become a local energy network supplier in Bury.

#### 7.3.1 How are we doing so far?

Between 2008/9 and 2020 the council itself has reduced its carbon emissions by 44%, mostly from reducing electricity and gas use in our buildings. Our total footprint is just under 16,700 tonnes of CO<sub>2</sub> which represents only 2% of Bury’s borough wide emissions total.

We also commissioned Catapult Energy Systems to undertake a piece of work to identify how Bury might progress to carbon neutrality by 2040 and 2050. It highlighted the level of change required, what the change might look like and what the implications would be for stakeholders. This will be used to inform our journey to carbon neutrality.

**Our progress towards carbon neutral homes**

- The Council stock has an average energy performance SAP rating of 70. This represents an average SAP/EPC rating of Band C. The Council and Six Town homes are committed to achieving a minimum C SAP rating for all by 2025.
- We have replaced traditional lighting with LED units within around 900 Six Town homes each year, outside security lights and in around 25 newly refurbished communal areas.
- PV solar panels have been installed to 13 blocks of flats in Whitefield: tenants benefit from free electricity during daylight hours and the Council receives income in the form of a feed in tariff.
- Forty eight homeowners have signed up to the recent Solar Together collective PV purchasing scheme and installations are currently taking place.
- Through a collaboration with Japanese Government, air source heating pumps and monitoring equipment have been installed in 92 Council / Six Town dwellings with reported savings to tenants' energy bills.
- All Six Town Housing staff had received carbon awareness training and frontline staff have been trained to spot signs of fuel poverty and to provide energy efficiency advice in the home. Tenant energy champions have been trained to understand fuel bills and fuel switching to find cheaper deals.
- 9782 (12%) of Bury's households installed insulation measures under ECO between 2013 and March 2019 so that 70% of EPC rated homes have a rating of D or below.
- Opportunities to secure external funding to offset the cost of installation of insulation and low carbon technologies within Six Town housing stock through a range of national energy efficiency and carbon reduction initiatives such as CESP, CERT, FIT and RHI have now been taken and maximised.
- The Council has helped to facilitate the installation of energy efficiency measures via various local and national grants in over 16,000 private sector homes attracting investment of over £12m. This has resulted in significant carbon savings and energy bill reductions.
- Further potential for renewable energy including free solar PV and associated battery storage of the solar energy are currently being explored.
- The average SAP rating for Council homes has shown some improvement over the last 10 years. In 2019, an increasing majority of the Council's own homes achieved a SAP rating of 'C'.
- Around 400 A-rated gas boilers per year are installed as part of the investment programme in addition to cavity wall and loft insulation

Many of these improvements to the environmental performance of the Council's housing stock have been made through accessing initiative-based funding. The ad-hoc nature of these initiatives has left a legacy of ad hoc maintenance arrangements and this is inefficient. We will continue with these programmes in the short term and going forward, we will take greater account of the potential to standardise ongoing maintenance to increase efficiency across all 8,000 homes.

### **7.3.2 Enabling our townships to support the shift to zero carbon homes**

If we are to achieve our ambitious targets, we need our 70% of residents who are homeowners to be persuaded to upgrade their homes – both the insulation and to convert to a renewable energy system – by 2030. They must also be helped to change their behaviours around energy use, ranging from learning how to maintain the temperature of a newly retrofitted home, to undertaking more journeys by bicycle or on foot.

We need residents to change aspects of their lives in order to make the energy savings. This ranges from homeowners increasing their loft insulation to reduce heat loss, to

We will need to engage Bury's residents, local businesses and community groups in this task. Collectively our residents hold significant knowledge about routes to zero carbon homes. They are also networked and well placed to organise to make a case to national government as well as to share information about new technologies, for example, and to develop trusted financial mechanisms to pay for them.

The Council is committed to engaging residents through stakeholder forums that will be established and supported in each of our Townships. These groups will be encouraged to consider the private housing challenge; how best to go about motivating and enabling homeowners to retrofit their homes. We will share our knowledge and invite these panels and forums to feed directly into the development, delivery and monitoring of progress on our action plans at the same time as developing their own local approach to the climate change emergency. We will support and assist them to identify and make a case for the necessary resources to achieve this task.

### **7.3.3 Accelerating capacity and capability through partnership**

Identifying pathways to volume domestic retrofit and reducing fuel poverty is also a priority across Greater Manchester (Strategic Priority A5 in the GM Housing Strategy). Action is being taken at Greater Manchester level to bring together a 'Retrofit Partnership Accelerator' of existing activity to focus collectively on issues of demand, supply, skills and access to finance to develop delivery and business models for whole house retrofit.

We will work closely with other local authorities through the Greater Manchester Combined Authority and with the GM Housing Providers group and GM Local Energy Market to develop an approach that enables Greater Manchester to achieve net zero-carbon new homes and carbon neutral existing homes. We will also work with a wide variety of other partners – public, private, education, utilities, voluntary, community and social enterprise sectors – to increase our learning and capacity to achieve this huge challenge.

Through partnership working, we will be better placed to:

- Exploit renewable energy potential in relation to solar, hydro and wind on our land and buildings

- Work with our utility providers to plan the necessary upgrades to the electricity supply infrastructure and lower gas demand and its impacts on our community
- Establish local energy networks to supply renewable energy to Bury residents
- Build the green energy sector to ensure we have sufficient service providers that can deliver new retrofit components and renewable heating systems
- Equip and upskill our local workforce and construction industry with the necessary skills to deliver renewable heat and energy systems in the domestic and commercial sector – coordinated with training colleges
- Develop local supply networks for installation and maintenance of energy efficiency measures and renewable energy
- Source innovative business models, finance and delivery mechanisms to retrofit homes and commercial buildings
- Observe progress in relation to other options for use of non-fossil fuels in the gas grid e.g. hydrogen carbon heat.
- Make energy efficiency and renewable energy options more accessible and attractive to our residents
- Maximise community wealth-building by identifying local business opportunities that will arise from the move towards a low carbon future

Working in partnership will also enhance our likelihood of success in lobbying national government to make the necessary changes to national policy and in bidding for national resources to advance our work towards carbon neutral homes.

**Our approach to low carbon homes**

**Undertake analyses of ‘carbon status’ of Bury’s housing stock  
Develop a new ‘Bury Eco-Standard’**

**NEW HOMES  
Net zero carbon by 2028**

**New Six Town homes**

- All new homes built to zero carbon standards ahead of 2028
- Provide exemplar projects for renewable heating systems and modular construction in developments where we have sufficient influence.

**New HA homes**

- Commitment to all new homes built to zero carbon standards ahead of 2028

**New private homes**

- GMCA and LAs consulting on additions to building regulations to require all new homes built in GM to meet zero-carbon standards by 2028
- Support and incentivise developers that are prepared to build to zero-carbon standards

**General – new homes**

- Shift to MMC – levers?

**EXISTING HOMES  
Carbon neutral by 2030**

**Existing Six Town homes**

- Stock condition survey including eco-elements, to establish baseline position
- Local exemplar projects for deep retrofit and renewable heating systems in Six Town homes and learn from other exemplars from across the UK
- Develop plan to bring all homes to low carbon standard by 2030 and SAP C rating by 2025 (drawing on Bury Local Area Energy Strategy 2018)
- Increase volume of deep retrofit over time as new tech emerges and the market develops

**Existing HA homes**

- Share knowledge, experience and information with HAs

**Existing private homes**

- Private stock condition survey including eco-elements to establish baseline position
- Enforcement to EPC Band E
- Private landlord incentives conditional on eco standards
- Apply new technologies to empty home refurbishment

**Market-shaping and industry development**

New build homes: MMC | Existing homes: Retrofit components  
Renewable energy sources | Local Energy Network Provider

**Learning and collaborating with GM, Together Energy Services, others (e.g. how to do Deep Retrofit)**



## **7.4 New build homes – towards net zero carbon by 2028**

Greater Manchester Combined Authority and LAs are consulting on higher standards for all new builds to be net carbon-zero by 2028, or even sooner on the advice of experts. This is likely to lead to additional building regulations for all new buildings across the region to meet the agreed target.

### **7.4.1 New Council housing schemes**

Any direct building of new Council homes will trial new low carbon technologies such as ground source heat pump technology and PV solar panels. Schemes will also be ‘future proofed’ so that they can be retrofitted with new zero carbon technology that is anticipated to improve in future years – including battery storage and smart energy solutions. From now, all new build homes over which we have control will be either net zero carbon at completion or can be easily adapted before the 2028 deadline.

There may be opportunities around modular construction to re-define ‘good design’ that can contribute to the carbon reduction agenda. The Council is considering small site delivery through Modern Methods of Construction (MMC), potentially using a local supplier to support emergence of a local economy for modular construction.

We will explore opportunities offered by these schemes to ‘upskill’ our workforce to be able to undertake future maintenance and repair of these systems.

### **7.4.2 New housing association homes**

We are working with Greater Manchester Housing Providers to support solutions for housing association homes, including homes built within the borough of Bury. All GM providers have committed to building all new homes to net zero carbon standards ahead of the 2028 date.

### **7.4.3 New private homes**

Requiring private developers to build to higher standards will increase the cost of development. We are therefore intending to work through the township residents’ groups to create strong buyer demand for low carbon homes, and a willingness to pay the additional price. For example, we will actively promote the financial benefits of occupying a net zero-carbon home – the low or zero fuel bills – and quantify the ‘purchase premium’ they might expect to pay in return for having very low fuel bills.

We are taking a GM-wide approach to planning policies to develop a new standard that will be a common requirement across all ten authorities; all councils will agree to employ whatever influence they can bring to bear on new housing development. We will also work with authorities beyond the GM boundary to persuade them to also adopt the new standard. Taking a common approach will help to bring consistency in the development market and to drive up standards.



In addition to this, the Council will orient its support and incentives towards those developers that are prepared to build to the new standards. This includes the support we provide to improve viability of new homes, set out in Section 2, as well as our support for first time buyers.

## **7.5 Existing homes – towards carbon neutral by 2030**

### **7.5.1 Establishing the baseline position in our existing housing stock**

Knowing the ‘carbon status’ of our existing housing, across all tenures, and the size and nature of the gap that needs to be bridged, is key to devising a strategy, prioritising action and measuring impact. In order to establish our baseline position, we will review our existing knowledge (such as EPC and SAP ratings) and undertake two further ‘stock condition’ analyses focusing on energy efficiency and carbon status, to fill gaps in our knowledge.

### **7.5.2 Existing Council homes**

We have made some good progress over the last few years through securing funds from national and international programmes. However, this has depended on the appetite of successive governments to drive this agenda forward and has, consequently, resulted in a piecemeal approach. Going forward, we want to be much more proactive, creating and implementing our own route map and finding ways to deliver it, being ready to secure funding as and when it emerges but relying solely on incentivised programmes.

Our approach to decarbonising existing Council homes will have several strands that we will take forward concurrently, and that will inform each other.

#### ***Strand 1: Deep retrofit pilots to push boundaries and upskill the workforce***

In 2021/22, Six Town Housing will embark on a small ‘deep retrofit’ pilot to bring between 5 and 15 Council homes to carbon neutral standard. Deep retrofit requires extensive work to existing homes to apply a whole range of measures, including a renewable energy source, all at once.

Through the pilot, we will upskill our workforce in retrofitting homes aiming to develop an efficient standardised retrofit process that incorporates the best and most appropriate technology available at the time for that particular property and that both minimises the cost, time taken and disruption to tenants. We will learn from other councils that are ahead in retrofitting their housing stock and with other GM local authorities will explore different models of retrofit. Initially we will prioritise properties that are empty between relets.

We will also identify one or more of our sheltered housing schemes that require more extensive remodelling or repurposing and undertake these works at the same time as deep retrofit. This will allow us to better understand scheme-based renewable ‘district’ heating and energy systems that may not be suitable for single dwellings.

As tenants move into the retrofitted homes, we will train them and make sure they have access to information on how to minimise/optimize energy use while keeping the home at ambient temperature.

Further phases of the deep retrofit programme will be informed by our learning from the earlier phases and from the experience of colleagues across Greater Manchester.

***Strand 2: Identify steps to bring all 8,000 Council homes up to the Bury Eco-Standard***

We will reset our approach to the Bury Standard (in Six Town Housing Asset Management Strategy) replacing it with a much higher level 'Bury Eco-Standard' which will reflect a fully retrofitted home with a renewable energy source in addition to the measures in the existing standard (see also Section 3.1).

We will set out a route map to achieve the Bury Eco-Standard across all our homes with challenging but realistic targets. Since we will not be able to clearly see all the steps at the outset, we will review and update the route map on an annual basis, bringing new information to bear on the next steps we will take.

Initial steps may include, for example:

- Insulation, draught-proofing and other 'fabric' upgrades
- installation of PV panels to some properties assessed as being suitable for them
- phasing in of air and ground source heat pumps (and phasing out of new gas boiler installations)
- installation of district heating systems in selected schemes
- 'future-proofing' properties to make them ready for installation of future technologies, such as hydrogen boilers or batteries, at a later date
- making it easy for tenants to procure their electricity from certifiable renewable sources

We will develop a monitoring framework that enables us to keep abreast of the changes we're making to our homes. It will also provide a means for us to regularly review our learning – from the retrofit pilots and through our connections across Greater Manchester and other local authorities – about how best to achieve net zero carbon homes in the shortest possible timescale. We will use this to inform and regularly update our stepped approach to achieve the 'Bury Eco-Standard' in all our homes.

How we phase works in later stages will depend on what we learn in the earlier stages. It will also depend to some extent on how new technology emerges and on the Government's strategy and programmes. We are likely to increase the number of homes we deep retrofit as we learn how to streamline the process while matching solutions to the dwelling, and as component costs reduce. We will revise our annual customer satisfaction survey to include questions about energy efficiency and retrofitted homes to learn more about how we can improve the customer experience.

### 7.5.3 Existing housing association homes

Greater Manchester Housing Providers have committed to achieving a minimum C SAP rating for all existing homes by 2025.

We will engage with the other RPs in the Borough to generate a plan of action for bringing their homes up to the Bury Eco-Standard by 2030.

### 7.5.4 Towards carbon-neutral private homes

Section 7.3.2 sets out how we will support Bury's residents to play their role in driving forward carbon neutral homes in the private sector through local energy groups in each of the six townships. This represents a significant strand of our efforts for all private homes to become carbon neutral by 2030.

In addition, we will consider how we might *develop levers and incentives to influence private landlords to adopt low carbon technologies*. Private rented properties are now required to comply with the 2018 Minimum Level of Energy Efficiency Standard, which is currently at EPC band E. Bury Council is currently engaged in a pilot, funded by BAIS, to test out a mix of methods to improve privately rented homes that fall below this level – including providing information and advice to landlords, signposting to sources of ECO funding for cavity wall insulation, incentives such as grants to undertake works and serving notices. By December 2020, we will know much more about what works best in what circumstances and will have developed our approach.

We will also consider how to ensure that any investment the Council or Six Town makes in private housing, for example, refurbishments to private homes on a lease-and-repair basis through the Ethical Lettings Scheme, helps to achieve Bury's low carbon goals.