

REPORT TO STRATEGIC SCRUTINY COMMITTEE

Date of Meeting: 16 June 2022

Report of: Chief Executive & Growth Director

Title: **Progress update from Exeter City Futures and city of Exeter Greenhouse Gas inventory**

Is this a Key Decision?

No

Is this an Executive or Council Function?

Executive

1. What is the report about?

- 1.1 This report sets out progress from Exeter City Futures CIC on the work being done to progress the Net Zero Exeter 2030 Plan together with a baseline greenhouse gas (GHG) inventory for the city, it quantifies the reductions required to achieve net zero in 2030 and identifies more specific and timely metrics for monitoring progress towards carbon neutrality in each emissions sector.
- 1.2 The Report paints a stark picture of the scale of the challenge ahead for the city of Exeter in achieving a Net Zero city by 2030. It does provide a helpful suite of key performance indicators that are measurable and capable of being held as a strategic dashboard on performance for the city. The Report inevitably raises questions regarding resources to achieve the goal. Therefore the report suggests options for consideration.

2. Recommendations:

- 2.1 **That Members note the Exeter Greenhouse Gas Emissions Inventory and acknowledge that the pace and scale of change required to deliver on the Net Zero 2030 goal will require a step change in resources, activity and policy making both at a local and national level, and are invited to consider what messages they would wish to relay to the Executive when it considers the Greenhouse Gas Emissions Inventory.**
- 2.2 **That Members of Scrutiny Committee acknowledge the importance of biodiversity and carbon sequestration in addressing the challenge of delivering a net zero Exeter and invite a presentation to a future meeting of Scrutiny Committee on practical proposals for linking the planning and development system with the climate and ecological emergency involving a mechanism to deliver net biodiversity gain on development sites and carbon offsetting within Devon, this could comprise a Natural Capital Delivery Partnership.**

3. Reasons for the recommendations:

- 3.1 Exeter City Council (ECC) declared a Climate Emergency in 2019 and pledged to work towards creating a carbon neutral city by 2030. The target year is 20 years in advance of the 2050 national net zero target required under the Climate Change Act and reported on in the Sixth Carbon Budget.

- 3.2 In 2020 the Council announced a series of initiatives to drive forward the city's net zero ambitions. The Centre for Energy and the Environment at the University of Exeter was commissioned to establish a baseline greenhouse gas (GHG) inventory for the city, quantify the reductions required to achieve net zero in 2030 and identify more specific and timely metrics for monitoring progress towards carbon neutrality in each emissions sector.
- 3.3 The GHG inventory reports emissions for eight sectors: power, buildings, industry, transport, agriculture, land use, waste and fluorinated gasses (F gases). The inventory is for territorial emissions. Territorial emissions are those arising from within the boundaries of the city and are therefore more in the control of people living, working and visiting the city.
- 3.4 Greenhouse gas emissions in Exeter have generally been on a downward trajectory since 2008. Estimated GHG emissions of 717 thousand tonnes of carbon dioxide equivalent (kt CO₂e) in 2008 have declined by a third to 476 kt CO₂e in 2019. Buildings is the sector with the highest emissions (35%) followed by power (24%) and transport (22%). Emissions from each of the remaining sectors are 7% or less.
- 3.5 Analysis for ECC's 2007 Climate Change Strategy identified a 2020 emissions target of 516 kt CO₂. With 2019 emissions below 500 kt CO₂e, this looks achievable (subject to Covid 19 bounce back). However, the sector detail shows that the reduction is the result of grid decarbonisation, which has taken place outside Exeter, and has delivered three times the change estimated in 2007. Local sector reduction in buildings and transport has failed to meet the objectives set in 2007 by factors of 6 and 4 respectively.
- 3.6 Extrapolating from the "current trend" since 2016 suggests that emissions in 2022 will be 448 kt CO₂e. The continuation of the current trend to 2030 would give residual emissions of 291 kt CO₂e, nowhere near net zero. Importantly, the current trend will not continue because of grid decarbonisation; for the decline in emissions to continue at the same rate, a 28% reduction from non-power sectors will be required to deliver the extrapolated trend in 2030.
- 3.7 Delivering net zero in 2030 requires a much greater reduction in emissions. A linear decline in emissions from 2021 to zero in 2030 requires a decline of 50 kt CO₂e (11%) per year and gives cumulative emissions over the period of 2.2 Mt CO₂e. Under the extrapolated current trend these cumulative emissions would be exceeded in 2026. Lack of progress in the buildings and transport sectors is particularly concerning. Growth in the city is leading to increases in emissions and the decarbonisation of electricity cannot continue to make up for the shortfalls in these sectors. The city needs to make significant progress in buildings and transport to deliver net zero.
- 3.8 In the sector analysis, net zero 2050 targets from the Sixth Carbon Budget set the 2030 values for measures in Exeter. The default assumption is that progress from the current position to net zero will occur in a linear manner, i.e. with the same annual increment in the nine years between 2021 and 2030. The danger with other assumptions (for example an exponential change which starts at a low level) is that the short term challenge is minimised only for the measure to then be impossible to deliver in the late 2020s

Power

- 3.9 Local renewable energy contributes to grid decarbonisation and to the local economy. In the power sector, the majority of Exeter's future additional renewable energy will come from solar photovoltaic (PV) panels on roofs. The Sixth Carbon Budget does not set targets for roof mounted PV so it has been assumed that by 2030 25% of Exeter's existing domestic roofs have PV installed and that 50% of new

homes built between 2020 and 2030 have PV with each installation assumed to have the historic average peak capacity (3 kW). Hitting this target would mean that in 2030, 14,000 of Exeter's domestic roofs (28%) would have PV (currently 2,300). The target for larger non-domestic arrays is 890 installations (currently 128). Recent PV installation rates have been low (36 in 2020) with a long run average of 220 installations per year. Hitting the 2030 monitoring target of 14,900 installations in total requires a rate of some 1,240 installations per year, every year to 2030. This installation rate is twice the peak historic rate achieved in 2012.

Buildings

- 3.10 Emissions from Exeter's buildings have hardly changed since 2008. Buildings were responsible for 35% of GHG emissions in 2019. 25,400 of Exeter's 56,400 homes (45%) are estimated to still need more loft insulation. Installing this basic energy efficiency measure by 2030 requires 2,800 installations in every year until 2030. The city needs cavity or solid wall insulation in 10,200 homes. Insulating all cavities and half the solid walls by 2030 requires 1,500 wall insulation measures each year.
- 3.11 Net zero requires moving away from natural gas for heating. While Exeter has more homes connected to heat networks than many UK cities its size (3,100), another 11,200 will need to be connected by 2030 (1,200 each year). While some homes will be on heat networks, the majority will need to install heat pumps with a target of 42,200 homes having heat pumps by 2030 (currently 449 homes are estimated to have heat pumps). This requires the installation of 4,600 heat pumps every year to 2030.
- 3.12 Non-domestic buildings also need improving. 3,100 non-domestic buildings in Exeter have energy efficiency ratings of C or below. Achieving a targeted 27% improvement in energy efficiency means upgrading most of these buildings to band B with 260 buildings upgraded every year to 2030. The need to switch to low carbon heating in non-domestic buildings implies heating system replacement in 270 non-domestic buildings every year to 2030.

Industry

- 3.13 The industrial sector covers emissions from manufacturing and construction businesses excluding those arising from the consumption of electricity and from buildings (covered above). Typically, the sector includes energy intensive industrial activities such as refineries, chemicals, iron and steel, and cement, which together are responsible for nearly two thirds of UK industrial sector emissions. These industries are not present in Exeter. Emissions in the area are more likely to occur from food and drink manufacture, printing, water, waste management and a variety of other smaller manufacturing businesses.
- 3.14 Industrial emissions in Exeter are relatively small (6% in 2019) and are less than one-half of the 2008 value. Only 2% of Exeter's 2019 industrial emissions came from industrial processes with the remainder arising from fuel consumption (mostly gas) indicating that cutting fuel consumption is the priority. The absence of identified point source emissions in Exeter makes it difficult to identify specific measures that target significant industrial emissions in the city. Improving industrial energy efficiency and switching away from fossil fuels to electricity are likely to be the most effective ways of reducing emissions. However, there is currently insufficient granularity in the data to measure or target specific measures in the sector. Reducing 2019 emissions of 27 kt CO₂e will require annual emission reduction of 2.4 kt CO₂e per year over 11 years to 2030.

Transport/Mobility

- 3.15 Emissions from transport, Exeter's third largest emissions sector (22%), have remained stubbornly high with little change since 2008. Pre Covid rises in vehicle

miles in Exeter need to be reversed to hit the 2030 target of a 17% decline in the 542 million kilometres driven in 2019. This change requires a 10 million kilometre per year reduction to 2030, a large change from the 6 million average annual increase from 2000 to 2019.

- 3.16 Electric vehicle (car and van) ownership in Exeter has grown exponentially over recent years. At the end of 2020 there were 590 battery electric vehicles registered in Exeter. For all 50,400 vehicles in Exeter to be electric requires 317 to be registered in 2021 with exponential growth continued thereafter. However, this rate of growth means that beyond 2027 the required replacement rate exceeds the pre Covid new vehicle registration rate. Adequate charging points will also be needed; as of October 2021 Exeter had 49 charging points for electric vehicles. The 2030 charging point target is 778, which if it is to be met, needs the installation of 81 new charging points per year to 2030.
- 3.17 Larger commercial vehicles and HGVs will also need to be zero emissions. In 2020 there were 2,500 HGVs, buses and other vehicles registered in Exeter. These are likely to be a fraction of those categories of vehicle driving on the city's roads. Although relatively few in number, larger vehicles have a greater per vehicle impact on emissions, so transitioning them away from fossil fuels is important. Targets and monitoring for larger vehicles need to be developed as data becomes available.
- 3.18 Exeter has recorded steady increases in cycling over the past decade. However, to reach the target of 11% of car and taxi journeys requires current cycling (5 million kilometres) to increase to 46 million kilometres in 2030, an annual increase of 4 million kilometres each year every year. Similar numbers of journeys will need to be walked.

Waste

- 3.19 Exeter's waste emissions (7% of the 2019 total) have been similar over the past 4 years following the commissioning of the energy recovery facility (ERF) in Marsh Barton. Emissions prior to 2014 were lower as Exeter's waste was disposed of outside the city (mostly to landfill).
- 3.20 Exeter City Council and Devon County Council, the respective waste collection and disposal authorities, only have information on, and collection and disposal responsibilities for, domestic waste. Local authorities have little knowledge of or influence over commercial waste in their locality. It is important for Exeter to obtain reliable and up to date information on volume and composition of non-domestic waste streams to enable assessment of emissions from non-domestic waste.
- 3.21 The Sixth Carbon Budget foresees a range of measures including reducing waste generation by 33% by 2037, increasing the UK wide recycling rate to 70% by 2030 and fitting carbon capture and storage (CCS) to all energy from waste (EfW) plants by 2050.
- 3.22 Exeter generated 39,000 tonnes of household waste in 2020/21. A 33% reduction would require this to fall to 26,000 tonnes in 2030, equivalent to an annual reduction of 1,300 tonnes each year. Although Exeter's households each generate moderately less waste than those in other parts of county, the city has a relatively low recycling rate (28% versus 55% for Devon as a whole). Improving recycling to 70% requires a 4.2% annual increase each year to 2030.
- 3.23 Measures for lowering emissions from the ERF include reducing fossil inputs to the ERF (e.g. by increasing plastic recycling) and exporting heat. The use of heat increases the efficiency of energy recovery from the waste and reduces CO₂ emissions; the more heat used, the lower the emissions. Promoting heat use in the Liveable Exeter schemes in Water Lane and Marsh Barton will be important in this

respect. Ultimately, the installation of CCS is required. The Sixth Carbon Budget requires the installation of CCS on all UK energy from waste plants between 2040 and 2045. Net zero in Exeter requires this in 2030.

F-gases

3.24 Although emissions from F-gases in Exeter are a minor part of Exeter's footprint (7%), under a net-zero scenario, the decarbonisation of other sectors means that, left unchanged, the F-gas contribution will play an increasing role.

3.25 Emissions reduction in the F-gas sector is driven by national and international legislation and there is therefore relatively limited scope for Exeter to accelerate emission reduction from F-gases. Local trading standards bodies enforce air conditioning inspections and more proactive enforcement may be a route to lower emissions.

3.26 Further work is required to develop specific targets for F-gas emissions. Reducing 2019 emissions of 29 kt CO₂e will require annual emission reduction of 2.6 kt CO₂e per year over 11 years to 2030.

Proposed Monitoring Targets

3.27 The monitoring targets show the scale of the changes needed in Exeter to meet the 2050 targets set out in the Sixth Carbon Budget by 2030. In summary, these include:

- Over 1,200 PV installations each year every year to 2030, compared to 36 in 2020, a six-fold increase in the long run average installation rate.
- Installing loft insulation in 25,400 homes by 2030 or 2,800 homes each year every year to 2030.
- Insulating the walls of 13,500 homes by 2030 at the rate of 1,500 every year.
- Putting 4,600 heat pumps in homes every year to 2030, there are currently 449 heat pumps in Exeter's homes.
- Connecting an extra 11,200 homes to heat networks by 2030 (over 1,200 each year).
- Improving the energy efficiency of 260 non-domestic buildings every year to 2030 and switching 270 every year to low carbon heating.
- Reducing driving in Exeter by 10 million kilometres each year, every year to 2030.
- Continuing the exponential growth in electric vehicles ownership (aiming for 317 in 2021) and putting in an additional 81 charging points in every year to 2030.
- Increasing cycling rates by 4 million kilometres annually (equivalent to 70% of the current total level) with matching increases in walking.
- Achieving a 1,300 tonne annual reduction in household waste generation each year, every year and a 4.2% annual increase in recycling rates each year, every year to 2030.
- Capturing and storing CO₂ emission from the Exeter energy recovery facility by 2030.

3.28 It has not been possible to identify data sources or specific proxy measures for the industry and f-gas sectors and some more specific targets have yet to be determined and therefore do not currently have data sources or incremental targets. These shortcomings should be addressed as part of the ongoing monitoring process.

Carbon off setting and Biodiversity gain

3.29 It is inevitable that carbon off setting will be part of the programme to achieve a net zero city, urgently the City Council needs to satisfy itself that a mechanism has been established that is credible and capable of delivering greenhouse gas reductions. There is a growth in international and national initiatives to off-set carbon, there is an international and national price for off-setting a ton of carbon. That pricing

mechanism will change over time. There is opportunities for abuse and opportunities to do indirect damage. It would be interesting to work out all the existing commitments to deliver carbon off setting and whether it is feasible to actually achieve these stated commitments.

3.30A couple of local authorities have put in place a local pricing mechanism for biodiversity gain and given the planning obligations it is timely that the city council establish a process that will satisfy members both in terms of biodiversity but also as part of the carbon off setting requirements.

3.31It would be helpful if Members could look at local initiatives and see for themselves the opportunities for addressing biodiversity gain and carbon off setting. It would be possible to invite to Scrutiny committee companies already working on local initiatives that may provide a mechanism to deliver with a degree of confidence.

4. What are the resource implications including non-financial resources

4.1 ECF as a Community Interest Company is minimally resourced and has relied heavily in the past upon funding from Oxygen House and Global City Futures and to a lesser extent ECC. At times other partner organisations contribute by providing an officer resource. For example in the past a transport planner from DCC was based in the team, and a project manager was seconded into the team by the University of Exeter. If the role of ECF is defined as a change agent, a vehicle for the city's organisations to keep a focus on the challenge and to align and co-ordinate activities towards a net zero goal then the capacity of the team is insufficient to meet the task but nevertheless it can continue to perform an effective role in moving the agenda forward, but in an opportunistic way rather than as supporting a programme designed to meet defined targets.

4.2 Presently there is insufficient resource within ECF to support the whole programme to achieve Net Zero Exeter 2030. Even if the work was limited to a traditional programme management role ECF would need more staff. There is insufficient funding to support studies and prototype work. There is no funding for capital projects nor a constant funding resource to fund bid writing for national funding opportunities. However, there is clear alignment with the strategic ambitions for the partner organisations that should be suggestive of a willingness to address these issues.

4.3 The Net Zero Plan 2030 identified the scale of the investment programme required to deliver Net Zero 2030. A successful delivery plan would be a mixture of public and private finance. There is already large scale investment taking place in various work streams and there is investment appetite to fund aspects of the work, big shifts are taking place with long term investment strategies. For example land is being bought by institutional investors for the purpose of carbon off setting requirements, pension funds are investing in technology such as air heat pumps. Registered Providers (RPs) are investing hundreds of millions in housing retrofit programmes. It would therefore be a mistake to assume that the public sector has to do the heavy lifting in funding the transition. There is an interest in working with cities to deliver an ambitious programme. International examples of cities making progress are worth looking at. The clear 2030 end date for delivering net zero crystallises the challenge and what has to happen to achieve the goal. But the present pace of change within the city will not get us to the goal of Net Zero by 2030.

4.4 The retrofit programmes for domestic and commercial buildings are quantifiable and we have enough examples of the ingredients for achieving the required improvement in performance to be able to quantify the cost and work through the logistical challenges to achieving the monitoring targets. It will become more interesting and challenging when addressing the solution for individual buildings, as the Council's own retrofit programme illustrates optimising the solution for specific properties has to be done by building type and building specific. The technical solutions require

assessors and contractors, labour and product, finance and rigorous inspection. There already exists private and public funded programmes, and contractors are working with the Exeter College to address challenges in areas such as skills and labour supply. RPs are willing to share learning. Individual companies are building digital twins of the city's roofs to identify capacity for PV, potential for walls to contribute to PV output. The city possess firms at the leading edge of air heat pumps technology. Therefore there are many of the ingredients already assembled to make solid progress towards a meaningful retrofit programme. But to achieve the targets required to meet Net Zero 2030 requires a step change in activity, a massive increase in outputs.

4.5 The same can be said for: connecting an additional 11,200 homes to heat networks; stepping up Electric Vehicle (EV) infrastructure, reducing car usage and increasing cycling usage etc. A massive step change is required. From an ECF point of view aggregating individual programmes in a programme management function will not achieve the goal, although there is a lot of value in bringing this body of work together in one place and holding the data on performance in a public fashion, and it is clearly an option.

4.6 It has been known for some time that the sector that is likely to be most challenging is transport, because people live complex lives and transport policy impacts on us all, movements across the city and in and out of the city are vital to us as individuals and to businesses. We also know that when public transport is less than satisfactory or when there is no public transport available the car becomes essential to our quality of life. This is particularly so for those living within the rural catchment of the city. A Net Zero Exeter requires us to address this theme. The County Council transport planners can testify to the difficulty in making decisions that require interventions prioritising pedestrians and cyclists over motorists. The simple fact is that the city will need a profound shift in cycling within the city and this will require a combination of reprioritising of infrastructure in favour of cyclists, safe networks and supportive policies, plus co-ordination of transport policies, parking tariffs and innovation in mobility solutions. Layered on to this will be the need for changes in the planning system the distribution of land uses and physical activities and support for communities and individuals. Good work is already taking place to begin this transformation but the pace of the change is not sufficient to meet a Net Zero Goal. In real time the city council is having to consider policies that will lock in the city development for the next 20 years and therefore the redevelopment of surfaced car parks or not, the location for multi-story car parks or not, the provision of car free developments or not are all matters that require urgent attention and care so as to not to damage businesses in the here and now for the sake of a goal that we have chosen 20 years ahead of the country as a whole.

4.7 Therefore, in answer to the question what are the resource implications of this report, the question is what role members wishes ECF to play in pursuance of the Net Zero 2030 goal? It can be modest, assuming that Members simply note the report and acknowledge the considerable challenge or it can be seen as mission critical and therefore requires an enhanced resource commensurate to the challenge in hand. A combination of investment and a clear policy framework will be required to support the city of Exeter achieve the Net Zero goal and options to achieve these outcomes should be brought back to Executive with some urgency.

5. Section 151 Officer comments:

This report sets out in stark terms the challenges to deliver net zero. From a financial point of view, the scale of investment required is far in excess of that which the Council can afford. Council set aside £1 million a year ago in order to provide some resource to the project, but this in itself is clearly a tiny fraction of what is required. Members will

have a difficult balancing act on driving forward the agenda, whilst protecting number of income streams that they rely on to deliver services to their citizens.

6. What are the legal aspects?

None identified

7. Monitoring Officer's comments:

This report is an update paper for Members information. Given that, it raises no issues for the Monitoring Officer.

8. Report details:

Background Report

- 8.1 Exeter City Council (ECC) declared a Climate Emergency in 2019 and pledged to work towards creating a carbon neutral city by 2030. The target year is 20 years in advance of the 2050 national net zero target required under the Climate Change Act and reported on in the Sixth Carbon Budget. The Devon Carbon Management Plan aligns with the 2050 national net zero target. At the 23rd July 2019 meeting of Council members also recognised the connected biodiversity crisis, and the vital role of biodiversity in tackling climate change and its contribution to our quality of life.
- 8.2 In July 2020 Council adopted the Net Zero Exeter 2030 Plan to inform all policy documents, plans and corporate decision making in response to the Climate Emergency and in pursuance of the goal to make Exeter a carbon neutral city by 2030.
- 8.3 The Plan presents a blue print for how the city of Exeter can achieve its ambition to be net-zero carbon by 2030. The Plan sets out ways in which each of us can play our part in achieving the net zero ambition, and to enable everyone across the city to engage in a meaningful way. It is built on an understanding that the city can only achieve its net-zero carbon targets if organisations, individuals and institutions take responsibility and accept they have a role and play their part. It is an attempt to focus the city on a sequence of key actions that take us to 2030 and enable these actions to be reflected in city and organisational plans.
- 8.4 It needs to be acknowledged that in pursuing a 2030 goal some national policies will not be aligned and therefore, as with the case of new housing, there will be limits to what councils can oblige.
- 8.5 At the time members adopted the Net Zero 2030 Plan the country was battling Covid and the financial impacts of lock-downs on the council's finances was severe. There was a recognition that once the crisis was over and the financial impacts were better understood work would be done to consider how the city council would progress those actions identified in the Plan as actions that ECC could lead on. Since approving the report there have been changes internally within the council to bring a clear focus on the net zero agenda under the Director for Net Zero and that work, focused on the greenhouse gas emissions from ECC, will be brought forward separately for consideration.
- 8.6 The focus of this report is the work of Exeter City Futures CIC to support the city of Exeter's Net Zero ambition.

Exeter City Futures CIC

- 8.7 Exeter City Futures (ECF) was established in 2015 to transform Exeter into a leading sustainable city. Comprising Exeter City Council, Devon County Council, the University of Exeter, Exeter College, the Royal Devon & Exeter NHS Foundation Trust, Global City Futures and Oxygen House, it was conceived as an ambitious,

long-term vision for the city that promises to harness pioneering technology and data analytics to tackle transport, energy and health challenges, and accelerate the city's economic development. The focus on data analytics was deliberate and matched a particular skill set in the city and suggested opportunities to do things differently. Further, it was an attempt to support a greater level of innovation in the city that could stimulate new start-up businesses. Exeter's economy needs more SME and greater levels of innovation, indeed this is a significant regional challenge - Exeter does relatively better than other parts of the region but - the region lags behind relative to the country as a whole. The work launched simultaneously to a major push by Sir Steve Smith, then Vice Chancellor at the University of Exeter on Innovation Exeter, an attempt to provide leadership to an emerging strategic theme that framed the big opportunity and challenge for the region. The University of Exeter had become a Russell Group University and was securing increasing amounts of research funding, a challenge for the region was to capitalise on this research for the benefit of the wider economy and the opportunity was to shape an economic agenda focused on two world leading institutions the Met Office and the University of Exeter in their expertise in the area of environmental intelligence.

- 8.8 Bringing private and public sector institutions together to support an emerging ecosystem for firms wishing to work on the challenges faced by urban areas especially in the area of climate change was, and still is, an opportunity to address some of the structural challenges facing the economy as well as solving practical problems in the city.
- 8.9 The initial focus of the work of ECF was energy independence and congestion, with an emphasis on supporting the shaping of a new vision for the city of Exeter, i.e., the Exeter Vision 2040 statement. The Work of ECF suggested that at the heart of any successful city must be sustainability, wellbeing, resilience, innovation and productivity. These themes continue to weave through the work of ECF.
- 8.10 The first report commissioned by ECF was an examination of the potential options and road maps that would enable the greater Exeter area to develop a path towards a sustainable future starting with Energy Independence and Congestion Free. The energy independence study identified financial and technical barriers and contained a series of 10 recommendations, including:
1. Net Energy Positive Buildings: it is particularly important to develop a supply chain and policy environment where new build developments are net positive energy as soon as possible
 2. Develop a credible roadmap to large scale domestic retrofit
 3. Encourage and demonstrate innovate solutions to reduce appliance energy use
 4. Develop demonstrator commercial/industrial case studies of what is achievable
 5. Develop tangible roadmaps to cut transport consumption
 6. Co-ordinate solutions to grid constraints
 7. Stimulate onshore generation encouraging joined up cross authority planning
 8. Provide economic evidence of energy independence
 9. Support & encourage research into enhanced generation efficiency, and
 10. Encouraging investment into marine & geothermal technologies
- 8.11 This early work was typical of the early work of ECF, it was an exercise in thought leadership, building an ambition for place that recognised the scale of the challenge was significant but also presented opportunities, both in terms of innovation and working collaboratively with the private sector. The ambitious pronouncements on congestion free and energy independence brought interest and a wider audience for an agenda that had been quietly and in a disciplined way already been making steady progress in the transition to low carbon. An example of this approach was the rolling out of the district heat network in East Devon and Exeter. That project demonstrated three local authorities working together to achieve tangible progress

towards “net zero” homes. The councils were supported in this programme because national policy explicitly required the house builders to reach a defined standard on a progressive path towards net zero homes and, as a consequence, it was possible to cost the option against a more traditional approach, namely individual measures on a building by building basis. This type of project demonstrated both what was possible and also the limitations of operating within a nationally framed policy environment. This continues to be an issue but should not be used as a reason not to try different approaches.

8.12 The transition to a low carbon future for Exeter has been solid, it has informed the work of the local authorities and has galvanised effort in pursuit of lots of good practise. There has been a very public campaign championing the agenda both in the city and nationally. Throughout this campaigning, especially by ECF, there has been a spirit of collaboration, innovation and doing things differently. While ECC has quietly got on with carrying out a raft of measures to improve its carbon footprint, ECF stepped into the space of galvanising business, our institutions, communities and individuals to contribute to shaping a vision, supporting new enterprises, and providing a focal and vocal point for the ambition for place.

Presently work is being progressed on:

Exeter Development Fund

8.13 The Net Zero Exeter 2030 Plan identifies locally controlled finance as a goal under the theme of capability. This 3 year project is funded by central government.

The following actions are identified:

- Create and lead a city partnership and aligned investment fund that enables the city to strategically develop, co-ordinate, deliver and invest in infrastructure that supports Exeter to achieve a “just transition” to carbon-neutrality (12.1, 12.2)
- Presently a joint scrutiny committee is exploring the strategic business case for the city fund concept, this work will take place over a number of meeting and is expected to conclude by the autumn. The business case will need to be presented to Executive and Council. The team at ECF is inviting engagement with the key stakeholder partners to better understand their appetite for the fund concept.

Change Makers Programme

8.14 The Change Makers programme is funded by the National Lottery Community Fund. The programme is now in Year 3 of delivery and the end date has been extended with National Lottery approval until June 2023. ECF Net Zero Change Makers Programme aims to cultivate a vibrant community of net zero change makers across Exeter through:

Establishing a collaborative infrastructure for community and business change makers by:

- building city partnerships
- Enabling cross-city dialogue
- Creating accessible networks
- Developing ideas with and supporting net zero citizen-led projects and enterprises

8.15 The key focus is on improving collaboration between change makers – whether representing a community, business or local authority – wanting to positively impact Exeter’s ambition to be carbon neutral by 2030.

8.16 The aim to better enable localised, self-sufficient, citizen-led change projects and enterprises to improve the places and spaces that matter to them, and to address local challenges, particularly around climate change, rapidly and at the earliest possible stage. We are doing this through:

Connect events

8.17 To help showcase local projects already delivering sustainable change in Exeter. The Connect programme events provide open events where residents, communities and organisations share their change making projects, form new partnerships to drive their projects forward, and build joint solutions. ECF have run Connect events on the themes of active travel, travel to school, greening the city and reducing and reusing waste.

Toolkit & Resources

8.18 An Innovation Toolkit and training package will be published to facilitate change makers' understanding of city and local challenges, and to help them design solutions to identified challenges. Currently in development, the aim is that ECF will share its Innovation Process, enabling citizens to define shared net zero challenges and initiate, plan and develop their own net zero projects.

Social enterprise and community development support

8.19 ECF is mapping the support available for social enterprises and community organisations in the city, to understand what help is available and to draw together a programme that will support local change makers in building sustainable projects that align with Exeter's 12 goals in the Net Zero Exeter 2030 Plan.

8.20 The aim is nurturing an increased openness to new ideas, change and innovation across the city, we want communities to more greatly influence city decision makers and to be recognised for the contribution they make to Exeter.

8.21 The Officer leading the work started as Community Engagement Officer in September 2021, with the task of coordinating and running the Connect events, which is 'Work Package One' of the project. There are four work packages in total.

Ambition and the 2030 net zero goal

8.22 The national commitment to achieve Net Zero by 2050 is challenging, no one should underestimate the challenge for the country to make the necessary changes. However, assuming the whole country will be net zero by 2050, why should the City Council work to achieve Net Zero by 2030?

8.23 One can argue, it is one planet and therefore reducing the city of Exeter's carbon emissions by making Exeter Net Zero by 2030 will have no material impact on the planet as a whole, but it will be challenging for the city and because of the resources that will have to be directed at this goal, will require significant changes that will impact on everyone in the city. The city of Exeter is not an island and operates within a county that is committed to the national timetable. It is reasonable for members to ask these questions when the City Council and our communities will be asked effectively to prioritise investment and resources from other areas of the City Council to make the impact on this agenda.

8.24 Members of the city council declared a climate emergency and this declaration recognises that we are in a crisis and we need as a planet to reduce greenhouse gas emissions by at least 50% by 2030. Today's decisions on energy, transportation and land use lock in their respective emissions levels for decades and therefore action must be taken immediately.

- 8.25 This has been the tone of the debate around the net zero agenda in the city. In simple terms soon it will be too late. But the Council went further than framing the matter with reference to the city council. Members have defined the goal for the city of Exeter, recognising that the city council has only limited levers to pull in relation to the city as a whole, hence the work through ECF to shape a wider effort.
- 8.26 Some like to think of the City Council as a running a business. Many businesses run what may be called an efficiency model, namely, they continue to drive down costs and can be much focused on their core business costs. In such cases taking any resource out to address structural issues that affects the wider sector can be seen as inefficient. For example, taking time to invest in developing the supply chain and skilling up workers for the sector, for the individual company the risk is that training the staff and developing the supply chain benefits their competitors and some therefore will chose not do it. Doing the right thing is not always win win.
- 8.27 The Council has strategically chosen not to view the council in a simple efficiency model, it has long recognised we need both to focus on efficiencies but also demonstrate leadership of Place. Some businesses recognise that investing in the supply chain makes them more resilient in the long term and therefore less resilient to economic shocks. Many successful business also embrace a value model that places increasing weight on the triple bottom line of people, planet and profit. The City Council tries to encourage firms to move from an efficiency model to a value model when it sets procurement tenders, the council encourages some investment in the skills agenda or social value in order to build a stronger local economy. The Council has worked hard to support a stronger city by being aware of the shared outcomes that matter to all of us rather than a strict statutory services view of the role of a council. What may be good for the city council as a business may not be helpful to the wider community and therefore the council has always held up strategic considerations when viewing its role, budget and policy making.
- 8.28 In relation to the economy of the City, the Council pivoted its economic development approach to move away from a traditional model of supporting inward investment to a model to support inclusive growth. Therefore our resources have been directed to the skills agenda and increasingly a relentless focus on the net zero agenda. This recognises that climate sciences are the strength of the local economy and our greatest opportunity to build innovation, increase start-ups and attract investment and the most significant opportunity to transform the whole of the Devon economy. Net zero is the most significant issue that will shape the investment market over the longer term and it is an area where presently we have considerable assets but others areas of the country are moving with ambition, and some areas who have been in contact with ECF to duplicate the model and already looking press on.

The Opportunity

- 8.29 Some of the city of Exeter's institutions are unique in a national and international context. The University of Exeter and the Met Office have an acknowledged global strength in the areas of climate sciences. For example a number of the University of Exeter academics have been lead authors for chapters on the Intergovernmental Panel on Climate Change (IPCC). The Global Systems Institute is applying Earth system science to generating networked solutions. The aim is to work with others to secure a flourishing future for humanity as an integral part of a life-sustaining Earth system. They are uniting a trans-disciplinary group of researchers, educators and partners to look beyond single 'environmental' issues to a truly systemic view of coupled global changes in the human social and economic sphere and the biosphere. The Met Office Hadley Centre is one of the UK's foremost climate change research centres. Contributing to all six Assessment reports by the IPCC; contributing 2 lead authors, 2 coordinating lead authors, and 1 review editor in the latest report.

8.30 The City has one of the highest concentrations of recognised climate change scientists of any place in the world. The area of climate sciences is the USP of the city of Exeter. Therefore, it provides a compelling picture that has fed into the regional narrative in terms of the Heart of the South West Local Enterprise Partnership Productivity Strategy 2018 and Local Industrial Strategy.

8.31 For example in the Productivity Strategy under Key Strengths and Challenges Transformational Growth, it states:

“The HotSW region has world class potential across several, high value sectors, with the potential to provide a springboard for accelerated productivity growth – within those sectors – throughout their supply chains and across the area. These transformational sectors are our ‘golden opportunities’:

Exeter has an exceptionally high concentration of climate and environmental science experts, and Europe’s most powerful supercomputer located in the Met Office. It is emerging as a cutting-edge place for enviro-technology, agri-tech and data analytics.

8.32 Translating world leading research into local impact in Exeter and the region is a strategic objective and opportunity. Both institutions: The Met Office and the University of Exeter have a place on the Liveable Exeter Place Board and have signed up to the Exeter 2040 Vision. The Vice Chancellor of the University, Lisa Roberts, has done a number of things since her arrival that has demonstrated leadership of this agenda. Firstly she has signed a Civic University Agreement with the city and has identified Net Zero 2030 as one of the key themes. This recognises that ECF will be the vehicle to support this city wide work. Lisa has also now taken up a role as a director on the Board of ECF. This has been further backed by the publication of the ten year strategy Exeter 2030 strategy in which it states:

“We will create the Exeter Futures initiative to support bold, new research ideas, working across disciplines and with our partners to address societal challenges. Each year, we will support a number of new research ideas from the community and provide the resources and time for teams to pursue ambitious new avenues of research.”

“We will launch a Net Zero Plus Innovation Hub for the South West, supporting regional businesses and organisations with their climate and environment action plans. We will attract start-ups and entrepreneurs to the region, providing skills development for green and digital transformation and building the South West into an international leader in climate action, biodiversity and natural capital.”

8.33 The University of Exeter has brought forward its carbon net zero target to 2030. After declaring an environment and climate emergency in 2019, the University set out a plan to reach net zero before 2050. But – based on support and input from students and staff – this has been accelerated to 2030.

8.34 The city of Exeter’s institutions collaborating for local impact is an explicit aim of the Exeter 2040 Vision. The City Council has a vital role in shaping the leadership of place and the direction over the long term and the type of long term investment that is required to meet the needs of the city.

8.35 It is therefore worth reflecting on the fact that there is a strong culture of collaboration in the city, there is good alignment among the city’s institutions, there is a new focal point with the civic university agreement, and innovation is centre stage as a key objective with the goal of converting research into solutions for our challenges an aim. Many of the leading officers of the city’s institutions regularly meet and explore the challenges through the Liveable Exeter Place Board. Therefore, the city is in a better position than most places in galvanising organisations behind a big ambitious goal.

The immediate challenge

8.36 There is not sufficient resources for a traditional project management programme in support of such an ambitious programme, let alone the scale of face to face interactions required to support behavioural shift and the need to make specific interventions that require one to address technical, financial and political considerations. From procurement to legal specialists a multi-disciplinary team is required to support whole city change. Between the leading institutions it should be possible to pull together resources for a core team but rolling out the scale of initiatives required to deliver against the greenhouse gas inventory, sector by sector to meet the 2030 timeline will require upfront funding to support a range of technical studies, feasibility and business cases, bid writing, communications, behaviour change expertise and data analysts.

Policy Considerations:

8.37 The two local authorities have a vital role to play in putting in place a policy framework to deliver the Net Zero goal for Exeter. There are a number of clear messages that flow from the Greenhouse Gas Inventory that will require policy development in coming months.

- Optimising the contribution of existing roofs domestic and commercial to accommodate PV
- Planning policies on new build, mechanisms for enhancing biodiversity and possibly financially rewarding communities in rural areas that support carbon offsetting, biodiversity enhancement and multi-authority agreements on renewable energy.
- Rolling out more district heating networks - two feasibility studies previously prepared for a city centre network and a heat network from the Veridor plant to serve Marsh Barton and South West Exeter offer a basis for thinking about future expansion including the relationship to the Liveable Exeter Strategic sites, and how planning policy may need to be written to support provision.
- Immediate provision of EV charging infrastructure both for buses, fleet and private vehicles.
- Policies that will have to address non EV use within the city, this is particularly an issue given the considerable retail and employment catchment area.
- Planning policies in support of cycling and pedestrians with reprioritisation of spaces and infrastructure to support cycling.
- Stepping up of recycling and roll out of food waste.

8.38 This not to make light of the issues involved with the development of the policy framework. It is challenging but necessary to deliver on the goal. ECF will be exploring the issues and the policy considerations that may be required.

Conclusions

8.39 Greenhouse Gas Emissions in the city of Exeter have declined by a third since 2008. This reduction has occurred because of decarbonisation of the national grid. Emissions from buildings and transport have hardly changed since 2008.

8.40 The Greenhouse Gas Inventory has set out the reductions required by sector to meet the Net Zero 2030 goal.

8.41 The strategy for delivering a net zero Exeter is broadly understood: optimise the amount of renewable energy from PV on residential and commercial properties, connect over 11,000 additional homes to district heating networks, minimise energy use within buildings by retrofitting commercial buildings, and retrofitting the homes in the city with a fabric first solution, such as cavity wall insulation, and then replacing

all gas boilers with air heat pumps - 42,000 of them. Back this up with replacing all fossil fuel cars (50,430 licensed vehicles) with EV battery cars, making most of the short journeys in the city by walking or cycling, massively increasing the amount of cycling. Plan all new homes so they don't need to be retrofitted, make sure all new homes are within 15mins of facilities and designed in a fashion to avoid the need to use the car, and improve recycling rates.

8.42 There are plenty of political, financial, legal, technical and supply chain reasons why this may be extremely challenging to deliver by 2030. It also identifies the opportunities for the local economy, investment, labour demand, and innovation in technology.

8.43 The City Council's Medium Term Financial Plan requires a significant reduction of over £6m over the next 4 years. Identifying additional resources from the city council's budget to support the task of achieving Net Zero 2030 will not be easy, and therefore alternative ways of bringing resources to the task would need to be identified.

9. How does the decision contribute to the Council's Corporate Plan?

9.1 Net Zero Exeter 2030 Plan has been adopted by Council, and Net Zero is one of the Council's core corporate priorities. Net Zero Exeter 2030 is explicit in the Exeter 2040 Vision. This report is focused on progress, and to highlight the size of the task ahead of the city of Exeter in getting to this goal.

10. What risks are there and how can they be reduced?

10.1 This agenda is challenging as it touches on all aspects of the way people live their lives. From challenging the way people move around the city, to the heating of their homes and the choice of motor vehicle they purchase. People live complex lives and we know from the work supporting our communities that the type of changes envisaged will require a great deal of care and resources to support our residents and business through the changes required.

10.2 There are clear tensions for the city council in supporting the roll out of ambitious programmes that challenge the way the council is funded. Car parking income generates a lot of income, over £8m, and there will be pressure on both the transport authority and the city council re income verses policy instruments designed to deter car use for short journeys. The City Council has signalled a desire to redevelop some of the existing surface car parks to provide homes close to the centre and to improve the street scene and public realm. The phasing of removing spaces does need to take into account the needs of city centre businesses and the availability of alternative transport solutions for a wide rural catchment. The Council is producing a new parking strategy and this will provide direction on the total amount of parking that will be required. However, the shaping of the strategy will need to reflect the challenge of supporting a step change in cycling and significant reduction in car usage.

10.3 Transport is probably the most challenging part of this net zero agenda for the city of Exeter, a significant area of risk. Everyone living, working or visiting the city of Exeter will be impacted by transport interventions. It is a polarising issue that becomes immensely emotional as it has a direct bearing on our lifestyles. People living complex lives view changes from their point of view, and therefore the intensity of community engagement and consultation is demanding. The transport authority has to balance many considerations and needs the institutions and businesses to work

constructively with the agenda. During the Covid crisis and the roll out of emergency measures to support active travel the city had a flavour of what could be achieved but listening to the cycling interest groups the measures don't go far enough, and the reality is they don't go far enough to make the scale of changes required to ensure 50% of all journeys in the city are walking or by bicycle. The County and City will have to make a choice regarding priorities, business as usual will not get us to a net zero city. A significant risk is that the stick comes before the carrot and alternative transport solutions are not progressed ahead of policy sticks.

10.4 In the early years of setting up Exeter City Futures an accelerator programme was established to help fund business start-ups exploring environmental challenges such as transport challenges, moving goods around the city, car clubs etc, and this type of initiative could have a role in meeting specific needs and working through risks. Having the city's anchor institutions invested in place and driving local impact, is an important quality to reduce the risk of failure.

10.5 The Exeter Vision 2040 states: "An innovative and analytical culture will support communities, businesses, civil society and public bodies to work together to solve the city's challenges and achieve its ambitions. The city institutions work collaboratively with a coherence in pursuit of the city's vision. Getting the city institutions to work in this fashion is a major plus in reducing the risk of failure.

10.6 It is not recommended that individual programmes are instigated without a risk assessment

11. Equality Act 2010 (The Act)

11.1 Under the Act's Public Sector Equalities Duty, decision makers are required to consider the need to:

- eliminate discrimination, harassment, victimisation and any other prohibited conduct;
- advance equality by encouraging participation, removing disadvantage, taking account of disabilities and meeting people's needs; and
- foster good relations between people by tackling prejudice and promoting understanding.

11.2 In order to comply with the general duty authorities must assess the impact on equality of decisions, policies and practices. These duties do not prevent the authority from reducing services where necessary, but they offer a way of developing proposals that consider the impacts on all members of the community.

11.3 In making decisions the authority must take into account the potential impact of that decision in relation to age, disability, race/ethnicity (includes Gypsies and Travellers), sex and gender, gender identity, religion and belief, sexual orientation, pregnant women and new and breastfeeding mothers, marriage and civil partnership status in coming to a decision.

11.4 In recommending this proposal no potential impact has been identified on people with protected characteristics as determined by the Act because the report is a discussion document requesting Members to consider the strategic resource implications of the Council's Net Zero 2030 ambition and is requesting a mandate for Exeter City Futures CIC to lead on the securing of investment partners for the City.

11.5 It is well understood, that the impacts of climate change globally will be felt most keenly by the most disadvantaged groups in society. Therefore a full Equalities Impact Assessment of the Council's Net Zero Action Plan will be undertaken as this plan is developed.

12. Carbon Footprint (Environmental) Implications:

12.1 This report seeks to identify those actions that will be required to achieve a net zero Exeter, it identifies clear targets to measure progress. It raises questions of the policy, financial and technical challenges to delivery.

13. Are there any other options?

13.1 To note the findings of the Greenhouse Gas Inventory and to push out the 2030 target date for Net Zero to reflect the scale of the challenge.

13.2 For the Council itself to explore opportunities with private investors, energy companies and local enterprise partnerships their appetite to work collaboratively with the city on achieving a net zero city 2030.

13.3 The city of Exeter could chose to work with investors on an opportunistic basis, this would be to accept the limitations of funding and project management capacity and therefore simply work with those companies that can take the agenda forward when those opportunities present themselves and assuming the basis for the engagement can pass the appropriate procurement obligations. Presently there are companies that can install some forms of battery electric vehicle charging infrastructure, it would not cost the local authorities; likewise companies are interested in installing heat networks; the transport authority will be approached by numerous companies interested in mobility solutions and novel schemes.

13.4 Therefore, instead of one large strategic investment partner, the city of Exeter could work with lots of companies as and when they identify a funding route to delivery, this has an obvious appeal, it moves the dial forward and progresses the agenda. The downside with pace is that it brings its own challenges, and as we have seen with the digital agenda and the roll out of fibre, there can be downsides in locking into a specific initiative in the absence of a strategic plan. Strategic planning, procurement and implementation require a project management capacity and up front funding when it is not always apparent how the project will return on the investment. The attraction of responding opportunistically is things can happen without apparent upfront investment.

13.5 A challenge for the city of Exeter is that without a vehicle such as Exeter City Futures CIC a similar approach of bringing together a number of partners will require some form of co-ordination role that gives confidence to investors, this could be transactional on a one to one basis, such as Devon County Council in relation to charging infrastructure, or multi party in relation to district heating involving a similar number of organisations that sit around the Board of ECF, namely local authorities, hospital trust and university. It is worth recalling that in delivering the existing district heat networks in the city and sub-region Government funding has been essential for building business cases and unlocking the problems. Much of that early work funding is at risk and the costs are significant. Many hundreds of thousands of pounds in building the feasibility studies and business case and undertaking the legal and financial due diligence, and in the case of south west Exeter and Central Exeter failed to achieve implementation. The city council in isolation cannot afford to invest upfront in this manner.

Chief Executive & Growth Director Exeter City Council

Local Government (Access to Information) Act 1972 (as amended)

Background papers used in compiling this report:-
Energy Independence 2025 Report, Exeter City Futures, 2017
[Energy-Independence-2025.pdf \(cityscience.com\)](https://www.cityscience.com/energy-independence-2025.pdf)

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