Cheshire West and Chester Climate Emergency Response Plan

Foreword:

From the Climate Emergency Taskforce & Chairman Matt Bryan

We face a climate emergency that will have an impact on all aspects of our lives, and while it is undeniably a global challenge, it can only be solved through concerted action at a local level. As one of the highest emitting areas in the UK, we feel a heightened sense of responsibility to act now, and to act at scale.

In our Council Plan, Play Your Part to Thrive, we set out that every part of our community would have a role in creating a cleaner, greener, fairer and more prosperous area. There is no stronger case for collective action than climate change, as everyone, from our largest industrial producers, to individuals, can take positive action and make a real difference.

The measures set out in this plan will contribute to radically reshaping how we live in Cheshire West and Chester over the next three decades. But we do not currently have the powers and resources we need to go as far enough, so we will work with Government to seek to devolve these competencies to a more local level.

As a Climate Emergency Taskforce, we unanimously believe that climate change is not a party political issue; it is an existential crisis that we must work together to solve. Therefore this Plan has been designed from the outset as a cross-party initiative, that is based on the best available evidence and data, to enable us to do more than our fair share to tackle this issue.

Half measures and partial efforts are no longer enough, nor were they for the past two decades. This Plan is designed with the principle of maximisation in mind. We must go as far as we can in all areas to tackle this issue. This will involve sacrifices and changes to our way of life. But we will be a better place for it, and all that contribute will be able to feel proud about their role in pulling together to beat climate change.

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1. Executive Summary:

In 2019 Cheshire West and Chester Council voted unanimously to declare a climate emergency. This declaration represented a major statement of intent by the Council and, as set out in the Council Plan and the Stronger Futures Plan for Recovery and Renewal following COVID-19, climate change is an organisational priority.

Cheshire West and Chester is, in many ways, a microcosm of the UK. Few places can claim to have such a variety of key emitters and sectors located in one area. As a result of the concentration of industry in the north of the borough, the borough is the fourth highest emitting of all local authorities in the UK. This at once a challenge, a responsibility, and an opportunity.

In declaring a climate emergency, the Council directed the Chief Executive to "produce a report to Council within six months to determine the earliest date before 2045 that CW&C and the borough as a whole can be carbon neutral, and revise its targets to meet that date (ideally 2030 to demonstrate leadership in the borough)."

This report was produced and presented to Council in 2020. It set out the scale of the challenge in achieving carbon neutrality by 2045 and the type of interventions that would be required. More importantly, it noted that the end-point of the transition to carbon neutrality is only part of the challenge. Research from the Tyndall Centre demonstrates that unless unprecedented progress is made over the next 6 years, the limits set by the Paris Agreement will already be breached within that period.

This plan sets out the actions that the Council will take to respond to the climate emergency, alongside evidence on the borough's current carbon footprint, and its potential trajectory over the period 2020-2045. It describes a range of actions to reach carbon neutrality within this period; including actions under the direct control of the Council, as well as those the Council could advocate for the borough as a whole, and at national and international level. Actions generally can be categorised as those which are primarily mitigation-based – those that reduce carbon emissions, those that are adaptation-based – that reduce the detrimental effects of climate change, and those that will we will ask of our residents to effect change in their own lives.

What is Carbon Neutrality?
Carbon Neutrality is a term that is interchangeable with the term 'net zero carbon'. It refers to carbon dioxide emissions being balanced with carbon reduction (offsetting) measures such as tree planting and carbon capture and storage. It is essential that we minimise the need for carbon reduction measures by reducing our emissions as fully as possible. Typically, it is much more expensive to off-set emissions than it is to reduce them, so our efforts are primarily focused on carbon reduction. Throughout this report, the term is also used as a proxy for the intent to achieve the area's carbon budget, while recognising that this is highly challenging given the current technological, regulatory and funding environment.

In order to determine its approach, the Council adopted three principles;

- That any plan should be democratically led;
- That the plan should be underpinned by the best available evidence and data.
- That the plan should be co-produced with communities to ensure it harnessed the skills and efforts of our residents.

This plan needs to go beyond fine words. It is resourced and subject to scrutiny, to ensure that it makes a real difference to our communities. Over the next four years, the draft budget plan includes £1.6m in revenue spending, alongside more than £12.7m in available capital, to ensure that we can deliver on this priority. The actions which make up the plan are clear, and there are appropriate performance measures to enable us to understand whether the actions taken are having an impact. The delivery of the plan will be kept under continual review by the Climate Emergency Taskforce, and an annual report will be presented setting out performance against the identified metrics.

The evidence we have available paints a stark picture. Information assessed by the Climate Emergency Task Force, concerning the high carbon-intensity of our industrial sector, and the radical nature of policy changes that would be required to meet this target, makes even the adopted 2045 target and associated carbon budget exceptionally challenging to deliver.

An inconvenient truth underlies this work. Our carbon reduction plan does not and cannot go far enough while remaining deliverable by a local authority. We need radical change in the political, social and economic context, beyond anything currently envisaged by either local or national

government to deliver carbon neutrality. While we have not created the current situation; we have a moral responsibility to do all we can to resolve it.

1.1 Introduction

This plan sets out how the Council will support the borough to achieve carbon neutrality by 2045. It is a highly ambitious and aspirational plan, and its success will be dependent on the hard work and goodwill of all our stakeholders. Collectively, we cannot afford to forget the fundamental truth that Climate Change poses the most significant threat to our way of life, and that we need to dedicate an exceptional amount of effort to tackling this crisis.

Even in light of the significant efforts proposed in this report, it must be made clear that achieving the carbon budget set out by the Tyndall centre, and the area's carbon neutrality target date of 2045 are highly challenging targets. Despite these challenges, the Council will pursue these goals and make all efforts to achieve them. The Council does not have all of the levers required to independently address this issue, but we will seek to work in partnership with those that do, including national government, local industry and communities to bring about the required change. Cheshire West and Chester is not without assets; it is a borough with vibrant and engaged communities, with one of the highest recycling rates in the country, with well-developed relationships with industry and agriculture, with the unique ability to be at the heart of the UK's hydrogen infrastructure development, and with exceptional partners in all sectors who are fully committed to de-carbonisation. As an organisation central to the civic life of the borough, the Council is well-placed to bring together the coalitions needed to tackle climate change. We know this will require previously un-thinkable changes to our way of life, significant investments, and re-thinking how we interact with our environment.

This report sets out the scale of the challenge that we face to meet achieve compliance with the area's carbon budget and achieve carbon neutrality by 2045. It reflects the work that has been done to gather evidence on the current state of emissions in the borough, and the engagement and intervention planning that has been undertaken since it the climate emergency was declared. It sets out the action required to achieve carbon neutrality, and how the delivery of these actions will be tracked. To inform this work we have captured evidence from a wide range of stakeholders to create the evidence base.

Climate Change is recognised as both the greatest global risk to health and the economy by the World Health Organisation and World Economic Forum respectively. As shown in the recent flood events of 2019, and ever-increasing average summer temperatures, the impacts of climate change are significant and disruptive, and they fall disproportionately on vulnerable communities. According to data published in a recent study in the journal Nature Communications[1], sea level rise as a result of carbon emissions associated with an increase in temperatures of two degrees Celsius presents a risk to a range of settlements within Cheshire West, including Ellesmere Port and its surrounds, Frodsham and Chester.

These considerations mean that in the wake of COVID-19, there is an even more significant need to create a greener, more sustainable Cheshire West and Chester to pass on to future generations.

2 The Principles:

2.1 Democratically Led Process

It is important that any response to the Climate Emergency Declaration is democratically led to ensure the views of residents are represented throughout. Following the declaration, the Council took two actions; convening the cross-party Climate Emergency Taskforce and expert Advisory Panel to provide leadership to the Council's response, and appointed Councillor Matt Bryan as the Leader's Champion and Cabinet Member for the Climate Emergency. Since May 2019, the Climate Emergency Taskforce has met eight times to consider a range of key sectors and the contribution that the Council, partners, businesses and residents could make to tackling climate change.

2.2 An Evidence Based Process

To provide appropriate evidence to support the development of the Climate Emergency Response Plan, the Council commissioned Anthesis, a sustainability consultancy. Anthesis have worked closely with the Department for Business, Enterprise and Industrial Strategy and the Tyndall Centre for Climate Change research in recent years to develop a methodology to manage and monitor local-authority level emissions. Locally, this work had several objectives:

[1] https://www.nature.com/articles/s41467-019-12808-z. It should be noted that this mapping solely represents the effects of sea level rise and does not account for the impact of coastal defences.

1. The establishment of a baseline in Cheshire West and Chester that is compatible with carbon reporting standards such as the Carbon Disclosure Project;
2. The provision of a scientifically informed carbon budget for the Cheshire West and Chester area via the 'grandfathering' of UK's national emissions budget under the Paris Agreement to the Cheshire West area;
3. Analysis using the Setting City Area Targets and Trajectories for Emission Reduction (SCATTER) tool to review the impact of forty interventions at four ambition levels on the area's emissions, in order to determine the scale of change necessary;
4. Given the borough's significant agricultural economy and heritage, a review was completed of the emissions attributable to the agricultural sector's activities in the borough.
5. Finally, in light of the need for the Council to demonstrate both leadership and accountability for tackling the Climate Emergency, the Council requested additional information about its organisational emissions.

The outputs of this work are set out in full detail in Anthesis' report[2]. The document sets out the Cheshire West and Chester emissions baseline via SCATTER. This refers solely to the borough's energy systems and excludes forestry, agriculture and land use, which are covered separately.

Cheshire West and Chester emits approximately 4 million tons[3] of carbon dioxide equivalent emissions per year, and that the primary contributor to emissions within the borough's boundary is Industrial and Institutional Buildings, at 53 per cent of emissions, followed by on-road transport at 19 per cent, residential buildings at 14 per cent, commercial buildings and facilities at 11 per cent, with 1 per cent or less from rail, waterborne navigation, solid waste disposal, and wastewater.

The Council's work has also been informed by a report from by the Tyndall Centre for Climate Change, produced for all UK local authorities, available in the background documents section, which supported the delivery of the second objective, the setting of a scientifically informed carbon budget for the Cheshire West and Chester area. The key recommendations of the report were that, to make its 'fair' contribution towards the Paris Climate Change Agreement, Cheshire West and Chester should:

[2] Available at: https://info.anthesisgroup.com/hubfs/CW&C per cent20Final per cent20Report.pdf?hsLang=en

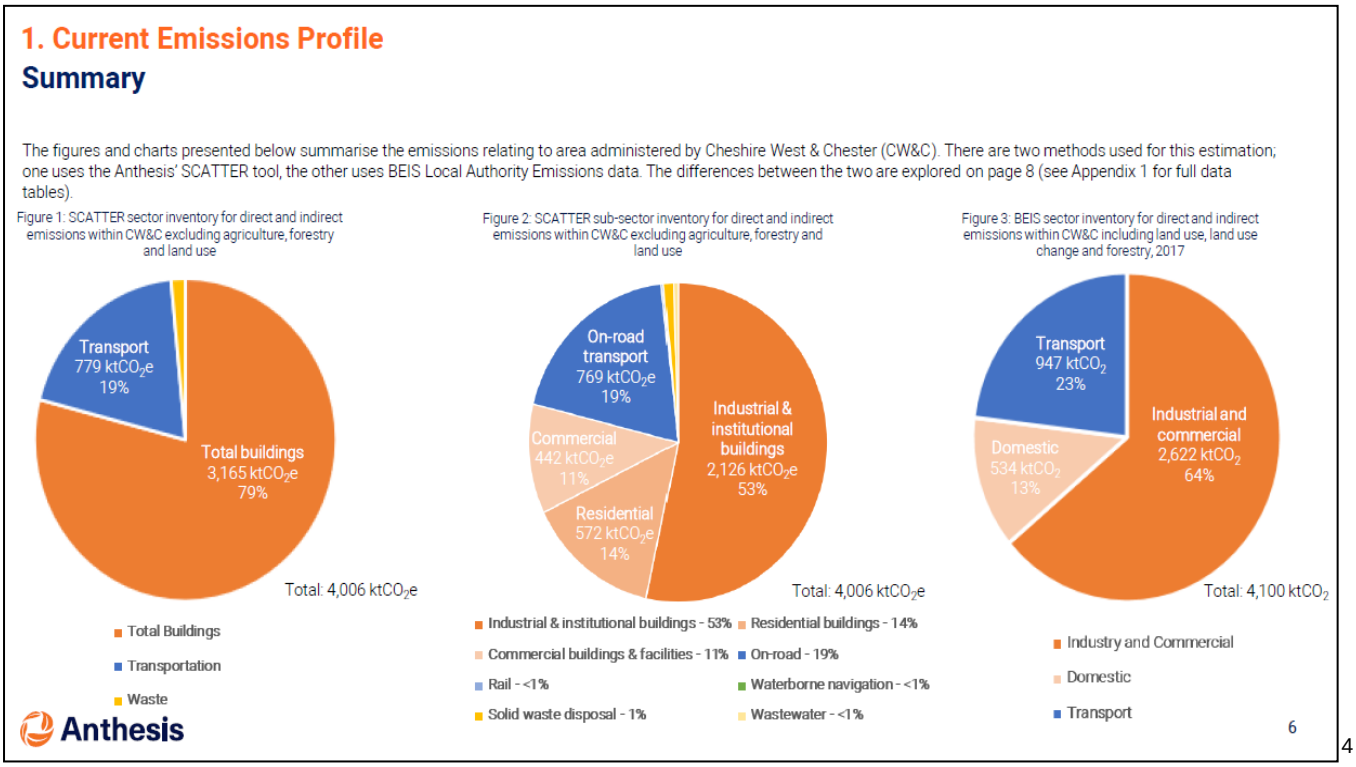
[3] As of 2017 data, SCATTER data set out that 4,006 $ktCO_2e$ was emitted in Cheshire West and Chester, while BEIS Local Authority Emissions data represented 4,100 $ktCO_2e$. Differences in methodologies are set out on Page 8 of Anthesis' report. As of 2018 BEIS Local Authority Emissions data, emissions within Cheshire West and Chester stood at 3,620 $ktCO_2e$, a decrease of 11.7 per cent. This is significantly in excess of the national decline from 2017 to 2018 of 2.1 per cent. The primary reason for the local reduction in emissions is a 461.5 $ktCO_2e$ reduction in industrial emissions observed in 2018.

1. Stay within a maximum cumulative carbon dioxide emissions budget of 24.0 million tonnes ($MtCO_2$) for the period of 2020 to 2100. At 2017 CO_2 emission levels, Cheshire West and Chester would use this entire budget within 6 years from 2020.
2. Initiate an immediate programme of CO_2 mitigation to deliver cuts in emissions averaging a minimum of -14.0 per cent per year to deliver a Paris aligned carbon budget. These annual reductions in emissions require national and local action, and could be part of a wider collaboration with other local authorities.
3. Reach zero or near zero carbon no later than 2040. This report provides an indicative CO_2 reduction pathway that stays within the recommended maximum carbon budget of 24.0 $MtCO_2$. At 2040 5 per cent of the budget remains. This represents very low levels of residual CO_2 emissions by this time, or the Authority may opt to forgo these residual emissions and cut emissions to zero at this point. Earlier years for reaching zero CO_2 emissions are also within the recommended budget, provided that interim budgets with lower cumulative CO_2 emissions are also adopted.

The third objective of the Anthesis work relates to the scale and pace of change required to achieve carbon neutrality in Cheshire West and Chester. The SCATTER model uses forty interventions which are considered across both energy supply and demand. Each intervention has a series of ‘ambition levels’ which are articulated as ranging from Level 1 to Level 4. Level 1 assumes minimal action beyond current, national policy (where sufficiently defined by sector or measure) and nationally led decarbonisation of the electricity grid. In contrast, Level 4 assumes that the region goes significantly beyond national policy and national grid decarbonisation, across both energy supply and energy demand measures.

High-level analysis of the borough's greenhouse gas emissions under SCATTER is set out below:

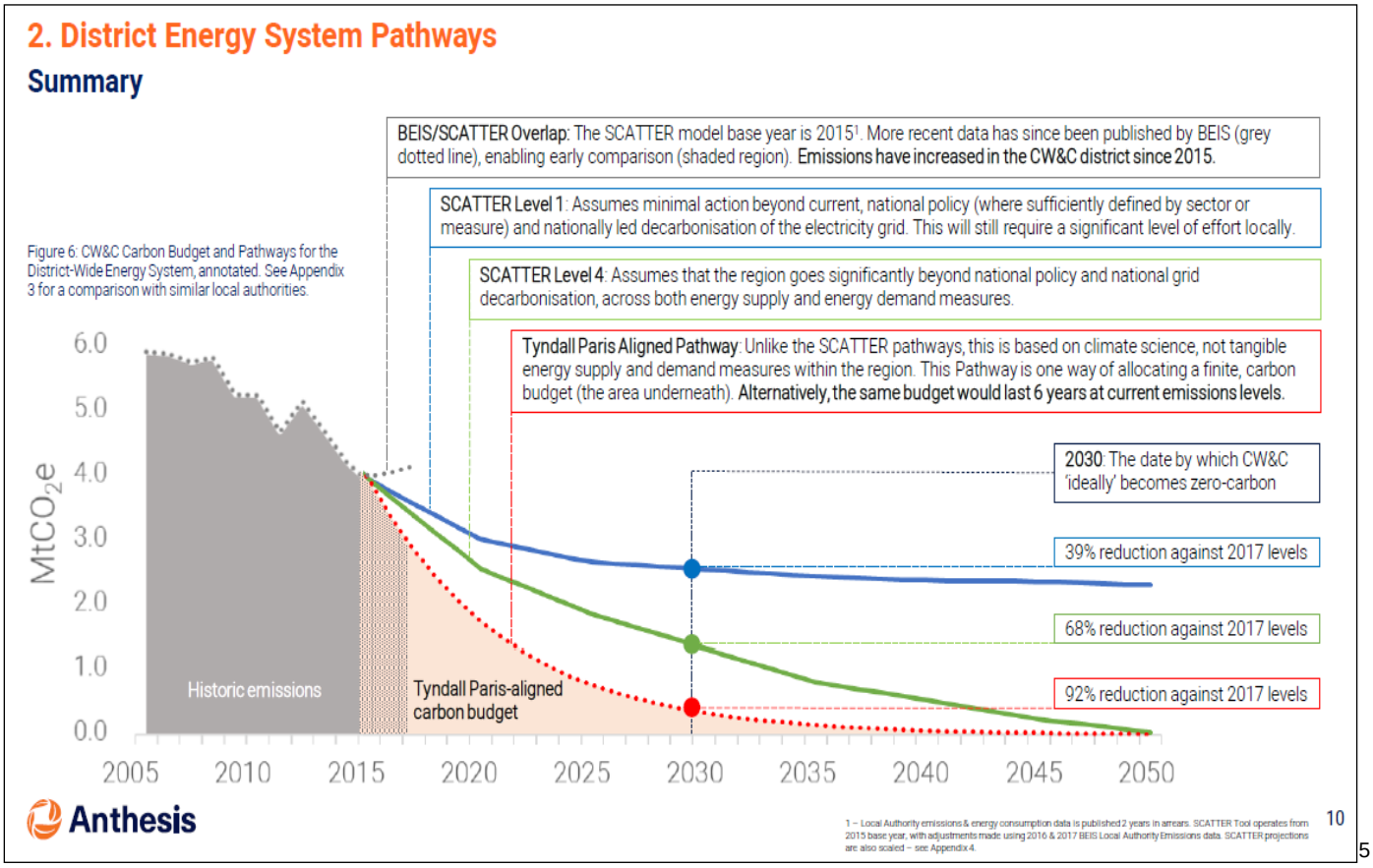
Figure One:



[4]

[4] Accessible Description, Figure 1: There are three pie charts in the image. The first is the SCATTER sector inventory for direct and indirect emissions within Cheshire West and Chester excluding agriculture, forestry and land use. This chart details that in the total buildings section of the chart, there are 3,165 $ktCO_2e$, or 79 per cent of the total emissions. Transport makes up 779 $ktCO_2e$, or 19 per cent of total emissions, while Waste makes up 2 per cent of emissions. The second pie chart is the SCATTER sub-sector inventory for direct and indirect emissions within CW&C excluding agriculture, forestry and land use. Industrial and institutional buildings are the largest section, at 2126 $ktCO_2e$, or 53 per cent. Transport makes up 769 $ktCO_2e$ at 19 per cent. Residential makes up 572 $ktCO_2e$ at 14 per cent. Commercial makes up 442 $ktCO_2e$ at 11 per cent. Solid waste disposal makes up 1 per cent. Rail, waterborne navigation and wastewater make up less than 1 per cent respectively. The third pie chart is the BEIS sector inventory for direct and indirect emissions within Cheshire West and including land use, land use change and forestry, 2017. Industrial and commercial emissions are the largest section, at 2622 $ktCO_2$. Transport makes up 947 $ktCO_2$ or 23 per cent, and domestic makes up 534 $ktCO_2$, at 13 per cent, for a total of 4,100 $ktCO_2$.

Figure Two:



[5]

Figure Two demonstrates that achieving carbon neutrality and meeting the Tyndall-aligned carbon budget in Cheshire West and Chester by 2045 would require a level of technical intervention that is not currently feasible under the most ambitious scenarios. It is therefore recognised that the 2045 target and carbon budget are exceptionally challenging based on the current policy, funding and technological environment. However, setting an exceptionally challenging target is in this case, appropriate, as it will facilitate speed of action in reducing carbon emissions, which is the most significant consideration in tackling climate change.

2.3 A Co-produced Plan

The scale of this challenge means that it cannot be addressed by a traditional, 'top-down' public sector response. The response to the climate emergency must draw on the skill, knowledge and

[5] Accessible Description, Figure 2: This graph covers the Cheshire West and Chester Carbon Budget and Pathways for the district wide energy system. It details that as of 2017 Cheshire West and Chester's emissions stood at around 4 million tons per year. It describes three pathways, the first is SCATTER level 1, which assumes the current level of intervention. This achieves a 39 per cent reduction in CO_2 against 2017 levels by 2030. The second is SCATTER level 2, which is the highest level of intervention possible, which would achieve a 68 per cent reduction by 2030. The third is the Tyndall Paris aligned carbon budget, which required a 92 per cent reduction against 2017 levels by 2030. The Tyndall and SCATTER level 4 pathways intersect by 2050.

enthusiasm of all our businesses, residents and partners if it is to be effective. Therefore, we have sought throughout this process to take a collaborative approach. This is exemplified by ensuring that all meetings of the Taskforce and Advisory Panel are open to public attendance, and that we will continue with a programme of co-production and engagement on this Plan throughout its lifetime, rather than treating this as a static document. Further information on our approach to co-production is included in section 3 – Communications.

3. Strategic Context

In February 2020 the Council ratified its four-year Council Plan, “Play your part to Thrive”. This document, accompanied by a four-year budget, sets out the strategic priorities for the Council in coming years, and how we will change the way we work to meet the needs of our communities. It is underpinned by the principle of listening and co-producing services with residents. The Council has subsequently developed a Recovery and Renewal Plan which sets out updated action plans against the Council priorities following the impact of COVID-19 and the national and local response.

Six main challenges were identified in the plan:

- Tackling the climate emergency;
- Growing our local economy and delivering good jobs with fair wages for our residents;
- Supporting children and young people to get the best start in life and achieve their full potential;
- Enabling more adults to live longer, healthier and happier lives;
- Making our neighbourhoods even better places to call home;
- Being an efficient and empowering Council.

The fact that tackling the Climate Emergency is central to the Council Plan illustrates the significance of the issue. This is a priority that we know our residents share. In the survey which informed the Council Plan, 83 per cent of respondents said that they were concerned about climate change, with 44 per cent of respondents being very concerned. 21 per cent agreed that 2050 is the right deadline by which to bring UK emissions to net zero, but 55 per cent think that it should be done more quickly, in-line with the Council’s aspiration of achieving carbon neutrality by 2045.

The plan set out that over three-quarters of participants agreed with all the Council's proposals for tackling the climate emergency, with particularly strong support around tree planting, energy efficient homes and supporting industry to reduce their carbon footprint. There were also calls for the Council to lead by example, to invest in awareness and educational behaviour change campaigns and to improve the public transport and cycling infrastructure to make sustainable transport a more viable option. Over two-thirds of residents agreed with ideas of how residents could play their part, particularly around reducing and recycling waste, buying local and green and switching to greener energy.

But we know that real change requires both money and time. In addition to the resourcing set out on page 4, we will begin to use all of the Council's purchasing power to reduce carbon emissions throughout our supply chain, by taking carbon considerations in to account when making procurement decisions. The Council cannot however bring about the required change independently, we are dependent on a range of factors such as clarity regarding the national planning framework and the provision of a long-term funding settlement from government. We will continue to work with government to create the foundations required for effective local action on climate change, and in the interim will do all we can with the powers, resources and time available to us.

There are also significant links between the Climate Emergency Response and the Council's priorities on tackling poverty, inequality and improving mental health. The detrimental effects of climate change are disproportionately felt by people who are experiencing poverty, similarly, the effect of climate change on creating anxiety, especially in young people, has been widely noted in the national and international media. As an example of work that is underway to bring tackle these issues in a joined-up way, the Council is working with the Welcome Network to explore becoming a 'Sustainable Food Place'; creating a sustainable food system will reduce food poverty, reduce waste and generate lower carbon emissions. It is essential that we bear the linkages between these priorities in-mind when designing interventions. For example, it is widely discussed that building to carbon neutral standards adds cost, but it is essential that this does not present a barrier to people with lower incomes living in high-quality, carbon neutral housing. Furthermore, people with lower incomes may be less able to pay independently for insulation to their home, leading to higher energy bills and reinforcing the cycle of fuel poverty while also generating additional carbon emissions. These are perverse outcomes and we must robustly tackle them in our climate response. Education will also play a crucial role in supporting people's mental health

as it relates to the Climate Emergency, by making clear the ways in which people can make a real, tangible difference to tackling climate change.

3.1 Scope

This plan is focused on achieving carbon neutrality within the Cheshire West and Chester area by 2045 alongside seeking to limit emissions to meet the area's carbon budget. Carbon neutrality means that we need to reduce our emissions to 'net zero', so that any carbon emissions produced in Cheshire West and Chester by 2045 would be met by an equal level of carbon sequestration (capture). Throughout this document, the term carbon neutrality and net zero are used as widely understood proxies for net-zero greenhouse gas emissions, which is the intent of the Council's Climate Emergency declaration. The actions within the plan are intended to be initiated within the Council's current Council-plan period, 2020-24.

This plan and objective is linked to, but distinct from the Council's organisational Carbon Management Plan, which concerns the actions that the Council will take to reduce its emissions to carbon neutrality by 2030.

3.2 Consultation:

Given the scale of public interest and enthusiasm within communities to tackle the Climate Emergency, the Council has started a programme of internal and external communications activity to engage with staff and residents. Initially this involved ensuring that all relevant campaigns and stories include consistent messages on the significance of considering the climate impacts of the Council's activities.

The Council has also established a webpage to summarise its Climate Emergency Response, at: https://www.cheshirewestandchester.gov.uk/your-council/councillors-and-committees/the-climate-emergency/the-climate-emergency.aspx

This page provides information regarding the times and dates of public meetings, the minutes of meetings, the Council's commissioned research, and links to wider resources on climate change. To provide regular progress updates to residents and other interested local stakeholders, we have established a monthly e-newsletter which now has a regular readership of more than 1000, and

the Council has a regular campaign of social media promotion and engagement on the issue of the climate emergency.

The Council held a public evidence session on Friday 24 January. We received more than 100 written evidence submissions and public speakers from a diverse range of backgrounds and perspectives. The key messages from this session are included in the action plans section of this report. The minutes and webcast of the meeting are available on the Council's website.

In February 2020, the Council held a Climate Summit, "West Cheshire Action on Climate Change", in order to bring together a diverse range of stakeholders from the public, private, third sectors and from our communities in order to share the outputs of our research develop a consensus regarding the scale and urgency of the challenge, and begin jointly producing solutions with our partners. While in-person engagement has been affected by the COVID-19 pandemic, we have continued to regularly engage digitally to ensure that we continued to share progress and invite contributions from the public.

The Council has engaged with a diverse array of stakeholders, including;

- Engagement with voluntary and community sectors groups such as the Chester Sustainability Forum and Friends of the Earth;
- Engagement with private sector partners in a range of sectors, including the energy, chemicals and manufacturing sectors;
- Receiving enquiries and public evidence submissions to inform the Public Evidence session of the Taskforce via ClimateChange@cheshirewestandchester.gov.uk;;
- Engagement with the Local Enterprise Partnership on the issue of the Climate Emergency to ensure this issue is central to the development of the Local Industrial Strategy.
- Engagement with local authority partners in the Cheshire and Warrington sub-region and in North Wales to align action to tackle the Climate Emergency, including supporting the delivery of shared priorities such as Growth Track 360.
- Engagement with partners in the local public sector, including the NHS, Police, Fire and Rescue service.
- Engagement with Housing Associations via the Housing Partnership;
- Engagement with stakeholders via the Climate Advisory Panel such as;
- Engagement with the Federation of Small Business;
- Engagement with the Environment Agency;

- Engagement with the Cheshire Energy Hub;
- Engagement with WRAP (Waste and Resources Action Programme);
- Engagement with Chester Zoo;
- Engagement with the Mersey Forest;
- Engagement with Grosvenor Farms.
- Engaged with the University of Chester.

Staff engagement will be central to the Council delivering on its ambition to be a carbon neutral organisation by 2030, and to support the borough to achieve carbon neutrality by 2045. Given this ambition, the Council has rolled-out a mandatory e-learning module to all staff on carbon literacy to promote awareness of the changes that can be made in both a personal and professional capacity to reduce carbon emissions. This is accompanied by a corporate objective for all staff to complete this module and to take action to reduce carbon emissions within their roles.
The Council believes that transparency of decision making is essential to maintaining and increasing public trust on this vital issue. In order to promote transparency, the Taskforce and Advisory Panel have held open meetings, with their agendas published on the Council's climate emergency webpage. There have also been provisions for members of the public to ask questions of and make statements to the Taskforce. Through these measures, we want to create the conditions for this plan to be delivered in partnership with our communities.

In addition to the extensive co-production and engagement undertaken during 2020, via the measures referenced in Section 3.6, the Council launched a further consultation on 18 November, running until 6 January to seek any further views on the Climate Emergency Response Plan and Carbon Management Plan. The consultation was promoted via a member briefing, press release, and via the Council's social media channels. The Council received 30 responses to this consultation, which were high-quality and detailed submissions, which both inform the current Plans and will inform thinking in future regarding the Plans. Of the 30 responses, seventeen were from residents, five were from Parish Councils, six were from community organisations, and two were from Cheshire West and Chester Councillors. The Parish Councils and community organisations which responded to the consultation were:

- Chester Archaeological Society;
- Ashton Hayes and Horton-cum-Peel Parish Council and Ashton Hayes Community Energy C.I.C;
- Cuddington Parish Council;

- Acton Bridge Parish Council;
- Extinction Rebellion Cheshire;
- West Cheshire Green New Deal;
- Transport for Cheshire;
- Utkinton and Cotebrook Parish Council.
- Chester Cycling Campaign and Cycle North Cheshire

The responses have been reviewed and feedback matched with corresponding sections of the Climate Emergency Response Plan. Overall, the responses welcomed the plan and encouraged the Council to go further and faster in its response to the Climate Emergency. There was also feedback linked to section 3.3 performance management, which proposed that targets within the Plans should be made more stretching. The targets set to date have been made as ambitious as possible within the financial, legislative and policy environment in which the Council operates. The Council will evaluate performance against these targets following the first year of the Plan and where appropriate, will amend target levels to be more challenging or attainable, in order to ensure that targets are stretching but achievable. The feedback for the sectoral plans is outlined below.

Energy and Industry: There are six responses which involve content relating to Energy and Industry. Key themes which emerge include:

- The necessity of supporting both blue and green hydrogen development. This is recognised in the plan, noting that blue hydrogen is intended as a transitionary step towards green hydrogen, and that the Committee on Climate Change recognises a role for both technologies in the transition to net-zero. While the important role of blue hydrogen is noted as a key starting point in Cheshire West's local context, the need for a rapid transition to Green Hydrogen is expressed in the feedback.
- Continued emphasis needs to be given to the importance of carbon capture and storage, given the need to offset a proportion of emissions.
- The importance of ensuring that new housing development include renewable technology, and that it is feasible to retrofit these technologies on existing property.
- The need to take advantage of the Government's ten point plan for a green industrial revolution, noting Cheshire West and Chester's unique opportunity regarding Hydrogen.
- A continued focus on renewable energy investment, including in heat pump technology, with the Council providing assurance that these technologies are reliable and effective.

Transport: There are eighteen responses which reference the elements of the plan related to Transport. Key pieces of feedback, present in multiple submissions include:

- The need to improve the accessibility and reliability of public transport in order to support people to take lower-carbon journeys. Respondents noted that this was highly challenging during the lockdown period. There was also substantial feedback regarding the potential for the Council to exert more influence on bus transport, options for which are being explored via the Bus Services review.
- That further context should be added to the Transport section to recognise links with a wide variety of Transport initiatives that are currently underway; this point is recognised however in the interest of maintaining the document at a readable length, some wider context must be left out.
- That further detailed analysis should be undertaken to reflect the carbon costs and benefits of individual actions. This is a goal that is shared between the respondents and the Council, however requiring a full carbon analysis of all actions within the plans as a pre-requisite for the Plan's publication would delay the Plan; therefore further detailed work to understand the carbon impact of the actions will be undertaken in parallel with the delivery of the plan.
- Strong support for the roll-out of superfast broadband to rural communities, and the need to continue to emphasise the important of this action in addressing digital inequalities.
- Emphasis on the importance of the Council procuring low-carbon vehicles for its own fleet, setting an example to other organisations.
- Several Parish Councils and Councillors fed back on the importance of additional pedestrian crossing; an additional action has been added within the Transport section to reflect this.
- It was requested the Council should communicate how carbon assessments of transport schemes will be conducted in future, and ensure that these assessments are valued as a key determinant of scheme viability.
- Feedback that the Transport section should be amended to reflect that rail and waterborne navigation contribute a low proportion of emissions (less than 1 per cent), compared to on-road transport (19 per cent). The section has been re-written in-line with this feedback.
- It was noted that the Council has a range of documents that relate to Transport, and that there may be an opportunity to consolidate these documents to provide a central strategic vision.

- It was noted that there was a need to evaluate the ambition of the Council's climate targets as they relate to Transport. The Council will annually review performance against targets and determine where amendments to target levels are required.

Housing: There are five responses which reference the elements of the plan related to Housing. Key elements of feedback, present in multiple submissions include:

- A need to work with Government to support the Heat pump and renewables installation industries, ensuring that training and accreditation are in-place to ensure that customers are confident in these products.
- Support for proposals to explore strengthening local building regulations.
- Support to the principle of developing net zero carbon homes – building right the first time, rather than requiring costly retrofits in future years.
- As the measures within the Housing plan were still in development at the time of the consultation's publication, it was noted that there was a need to ensure that targets are appropriately ambitious.

Business Premises and Engagement: There are five responses which reference the elements of the plan related to Business premises and engagement. Key feedback includes:

- Recommendations to explore creating credentials/awards for businesses that demonstrate high standards of climate-awareness and carbon reduction in their practices.
- Recommendations to support villages, parish and town councils and other community organisations to retrofit buildings to install renewable technologies. This is one of the aims the Climate Emergency Fund and to date five community organisations have been successful in bids to the fund.
- An emphasis on the importance of the Council and Government ensuring that public transport provision is available to support employees to reduce their commute, thereby reducing business' carbon footprint.

Land Use, Climate Repair and Adaptation: There are eight responses which reference the elements of the plan related to land use, climate repair and adaptation. Key feedback includes:

- That the Council should consider encouraging urban garden management to promote air quality and biodiversity within urban areas.
- That the Council should ensure that the heritage and archaeological assets of the borough should not be detrimentally affected by the development of renewable energy

assets. There was also feedback linked to Anthesis' description of the expansion in renewable energy supply required, which could be met through an expansion in wind and solar power. It should be noted that Anthesis' research was establishing the electricity supply required for the transition to net zero and provides a theoretical baseline for how significant the growth in supply would need to be, however this demand in renewable energy supply could be serviced throughout the UK, including via opportunities such as offshore wind.

- That the Council should work with the agricultural community during the period in which the Environmental Land Management System is implemented to ensure that the carbon, adaptation and biodiversity benefits of this policy are maximised for Cheshire West and Chester.
- That the Council should do more to encourage dietary change, both via communications to residents and via engagement with the agricultural community.

Waste and Recycling: There are 5 responses which reference the elements of the plan related to waste and recycling. Key pieces of feedback include:

- That the Council should be ambitious in relation to action 2 in section 9.5, relating to purchasing hydrogen or electric vehicles for its waste fleet.
- Recommending further targeted communications to people who are not recycling correctly, and social media campaigns to provide information on what can and cannot be recycled.
- That the Council should introduce additional recycling bins both to promote recycling and to ensure that recycling is highly visible.

3.3 Performance Management:

The requirement to annually report on progress against the borough's attainment of carbon neutrality by 2045 was set out by Council. A clear performance framework is required to enable Members, officers, partners and the public to assess whether the Council is achieving what it set out to do in this plan. In order to align to the Council's Corporate Performance Management approach, the following key principles are adopted:

- **Proportionality**: Performance management will track and focus on the issues that make the biggest difference, being tailored to the appropriate audience, rather than being an end in itself. The focus will be on improvement supported by efficient processes and systems for reporting, analysis and data collection

- **Depth vs breadth**: There needs to be a balance between the range of information available and the depth of understanding it can give. Fewer indicators can enable more insight, analysis and focused improvement, as having an abundance of indicators can make it difficult to ‘see the wood for the trees’. Given the limited amount of time available to decision makers to scrutinise and review performance data, it is therefore preferable to have fewer, but meaningful, indicators, and arrange for ‘deep-dives’ into areas of underperformance.
- **Intelligent target setting**: Recognising that this plan is the start of a 25-year monitoring period, targets are set on a medium-term basis where possible, specifically, to the end of the current Council Plan period. Targets will be set by taking account of Anthesis data, benchmarking information, considering historical trends and considering resources.
- **Managed flexibility**: Measures, targets and actions are sensitive to changed circumstances and a refresh of the framework takes place on annual basis in an open and transparent manner.

19 performance indicators are proposed to track performance against this plan. These indicators are not directly correlated to all actions within the plan, but act as proxies for the delivery of the plan’s objectives. The Council is not able to directly influence the attainment of the target on all indicators. Measures are therefore categorised as being either “Direct Influence” or “Indirect Influence”. The performance framework will enable members and residents to hold the Council to account for under-performance, and enable us to celebrate good performance. Where a need to improve performance is identified, the Climate Change team will offer facilitated workshops with the relevant service to seek to understand and resolve barriers to delivering better outcomes. Responsibility for the production of an annual report sits with the Climate Change Strategy Manager, in consultation with the Cabinet Member for the Climate Emergency and the Climate Emergency Taskforce.

3.4 Best Practice:

Hundreds of Councils throughout the UK have declared a climate emergency, in a range of different contexts, from predominantly rural areas such as Cornwall, to cities such as Manchester, Leeds and Bristol. We have reviewed the process of responding to the declaration of a Climate Emergency and sought to take learning from areas evidencing best practice. Examples of common themes in responding to the Climate Emergency, and how we have learnt from them, include:

1. **Be inclusive**: The development of local plans should be as inclusive as possible, as local residents, businesses, public sector partners and community groups will be more likely to support a plan they have been involved in co-designing from the outset.
2. **Make a statement of intent**: Councils that have been successful in promoting and delivering on their climate emergency goals have made a clear declaration of intent, i.e. setting a target for area-wide carbon neutrality, rather than a more generic aspiration to reduce carbon emissions. They have launched the action planning process and set out a timeline, calling for input from residents, business and partners. They have used a range of communications channels from in-person, to social media, to online direct engagement to develop engagement in building the plan.
3. **Engage Key Stakeholders**: Authorities have worked as 'convenors' to bring together thought leaders such as universities, community groups, think-tanks and experts to ensure processes are informed by the best available evidence. There are a range of models to facilitate expert engagement, from options such as Leeds, where the Climate Change Commission is chaired by the University of Leeds, to Lancaster's Climate Change Cabinet Liaison Group, which is chaired by Lancaster City Council and includes representatives from Lancaster University and a range of other interested stakeholders. In Cheshire West and Chester, we have sought to learn from these examples by creating the Climate Advisory Panel. Chaired by the Chief Executive of the Council, this group is made of up expert representatives from the public, private and third sectors, and includes representatives from our communities. The group advises the Taskforce and ensures that the Taskforce receives relevant and high-quality information.
4. **Reflect local issues**: The Climate Change engagement process must be responsive to local needs and key issues to be meaningful. The issues faced in each local area are significantly different. In Cheshire West and Chester, this is reflected in the borough's engagement with industry, given the high proportion of industrial emissions in our area. In view of this, we have engaged with bodies such as the Cheshire Energy Hub throughout this process to co-design solutions to reducing industrial emissions. This involved representatives from local industry hosting a session at the West Cheshire on Climate Change event on industrial decarbonisation.
5. **Be clear on scope**: Action plans should be clear on what they have responsibility for, and what targets they are working towards. For example, Bristol has a clear target to be carbon neutral by 2030, and has a One City Climate Strategy to achieve that, underpinned by the Mayor's Climate Emergency Action Plan that sets out the actions the Council will take.

Cheshire West and Chester's Plan builds on this learning and is in two parts, the Climate Emergency Response Plan covers how the Council will support the borough to achieve carbon neutrality by 2045, while the Carbon Management Plan sets out how the Council as an organisation will achieve carbon neutrality by 2030.

6. **Emphasise co-benefits and empower residents**: When considering interventions, the most successful plans are broad rather than narrow in how they convey the benefits of taking climate action. Projects typically do not only deliver carbon benefits, and these are not always the most engaging benefits to residents, especially when projects can be disruptive. E.g. home insulation projects may deliver carbon benefits, but it is often having a warmer home and lower heating bills that are more meaningful for people. It is important to emphasise the co-benefits of climate action, such as cleaner air, healthier diets, and creating safer, stronger communities. Citizens also need to understand how we can bring about change in our own lives. In-line with the Council's aspiration to enable all our residents to play their part in helping the borough to thrive, this plan includes guidance on how residents can make an immediate impact in their communities.

3.5 Governance

The implementation of the Climate Emergency Response Plan is a Council-wide responsibility. Within this context, the senior accountable officer for the programme is the Deputy Chief Executive for Communities, Environment and Economy. The Climate Change Strategy Manager is responsible for the co-ordination and monitoring of the plan, with Heads of Service throughout the Council responsible for the implementation of actions within their service areas.

The Cabinet Member for the Climate Emergency and the Climate Emergency Taskforce provide political direction and oversight to the Plan, shape the Plan's ongoing development and bring in expert knowledge as required to influence delivery.

3.6 Strategic Alignment with other plans

Tackling the Climate Emergency is a core focus in the Council Plan, Helping the Borough to Thrive. The Climate Emergency has direct links with other core strategies including tackling the poverty emergency, supporting mental health, and is aligned with plans such as the Inclusive Growth Strategy and the Health and Wellbeing Place Plan. The Council has key

aims regarding sustainable procurement and social value policies. We are committed to using providers with strong sustainability policies and delivery of services in line with the Council's climate change policy. This also relates to a sustainable supply chain system – the resilience of which can be gathered through scenario testing and experience and then risks adequately managed. The Council has a social value policy with Climate Change as one of the main areas of focus. Specifically, it aims to follow the national targets, outcomes and measures relating to climate change. We are committed to integrating climate change response measures to the Council's capital expenditure and investment programmes. This includes making available internal funding for suitable capital projects which support Climate Change policies. Equally importantly, it means ensuring climate aspirations are built in to base budgets for projects and services. The Council is committed to making more effective use of capital maintenance and construction budgets to deliver climate outcomes. Through greater alignment with asset management strategies, this helps to ensure that to ensure resource is concentrated in the right areas, on the right projects, with the long terms vision and aims of the Council in mind**.**

3.7 Embedding Climate Change Awareness

The Council is committed to integrating training policies and systems for Climate Change policies to:

- Our staff
- Members
- Communities

<u>The strategy for climate change education within the Council is to:</u>

- Make messages clear and accessible through regular communications and training activities;
- Embed a behaviour within the Council of thinking sustainably, asking questions and challenging our current practices;
- Be clear in communicating what the Council's aims are;
- Making it clear how staff and Members can support this individually and collectively;

The Council has developed specific carbon and climate literacy training that is available to all, and which was a mandatory objective on 2020-21. Alongside training and metrics, It is also important that we bring about behavioural change for how we view, plan and act on our current and up-

coming challenges. This ethos is centred on empowering our staff to make positive and innovative contributions and decisions.

There will be further carbon literacy training which will further equip participants with skills and knowledge to understand the climate costs and impacts of everyday activities and the ability to reduce emissions on an individual and organisational basis.

3.8 Equality and diversity

The Council will ensure that it:

- Identifies specific support required to support individuals relating to the effects of climate change, recognising that these often disproportionately affect vulnerable individuals and groups, exacerbating existing inequalities.
- Recognises potential climate-linked inequalities linked to individual characteristics, including but not limited to age, race, religion, class, economic circumstances, gender, disability and sexual orientation.
- Understands the mental and physical health effects of the climate crisis on our staff and communities.
- Recognises that inclusion is the practice of providing everyone with equal access to opportunities and resource. Policies must be designed to be inclusive of different groups.
- Continues to ensure that the Climate Taskforce includes representation from a diverse range of stakeholders, including community organisations, and promote ongoing engagement with groups such as the Poverty inspirers to engage with people from a diverse range of perspectives.

The Council will be mindful of the equality and diversity impacts in its response to issues such as:

- Energy and fuel poverty
- Food insecurity
- Improving job skills, education and retraining
- Clean air and reducing pollution
- Flood risk and recovery
- Educational risks and social risks
- Quality of public space, green space and assets
- Infrastructure
- Accessibility to key services/houses

- Affordability of public transport and access to active travel

3.9 Training and Skills

The Council has made a number of commitments with regards to Climate Change that have an impact not only on the required skills within the Council, but more broadly within the borough and wider industry. The Council is developing – in conjunction with the education providers and industry – training plans and policies to address the following:

- Engagement with industry and education providers to deliver an approach to support the workforce in transitioning to green skills;
- Recognising a specific challenge around retrofit, the Council is working with our local employer base (and education providers) to address retrofit services;
- Supporting Higher Education on innovation and developing new net zero products;
- Ongoing digital skills development with residents and businesses, and addressing the skills gap with regards to digital infrastructure;
- Training for business in readiness to adopt new, low carbon approaches to operations and delivery – including areas such as whether there are sufficient drivers/mechanics available to support that supply chain;
- Potential skills opportunities with regards to forestry, horticulture and conservation. This could include such mitigation activities such as flood management, peat restoration etc;

The Council is actively pursuing opportunities and funding to develop green skills in conjunction with academic institutions.

As part of the Council's response to the cost of living crisis, we have developed our own internal training on fuel poverty and signposting for support which has been rolled out across the Council. This is being further developed to extend to partners such as the NHS.

We have also engaged with National Energy Action to deliver specific training to front line Council staff, NHS and voluntary sector on fuel poverty which will be delivered in January 2023.

Action Plans by Sector:

4. Energy and Industry – Lead Officer: Climate Change Strategy Manager

4.1 Sector Description, Key Targets:

Emissions from industrial processes make up the largest single element of Cheshire West and Chester's total emissions at approximately 2.1 million tons per year based on Anthesis' SCATTER analysis, or 53 per cent of total emissions. There are differing methodologies to capture and attribute emissions produced by industry and it is important to be aware of these. Based on Department for Business, Energy and Industrial Strategy (BEIS) Local Authority statistics, combined Industrial and Commercial emissions stand at 2.6 million tons per year. Based on EU Emissions Trading scheme data, these emissions stand at 3.5 million tons per year. This is linked to the fact that BEIS and SCATTER analysis re-distributes carbon emissions from large industrial installations throughout the country in its analysis. For more information on the EU Emissions trading scheme, refer to Appendix 1. The conclusion however remains unchanged. We need to reduce carbon emissions that are produced by the use of fossil-fuel derived energy both in industry, and also in our homes, shops and other premises by switching to renewable sources. It is important to note that while industrial processes do generate carbon emissions, that industry has achieved significant reductions in emissions in recent years, and these businesses are essential to area's economic prosperity, supporting a range of high-quality jobs. Artificially reducing emissions by out-sourcing emissions to nations with lower environmental standards is not a sustainable way to reduce global emissions.

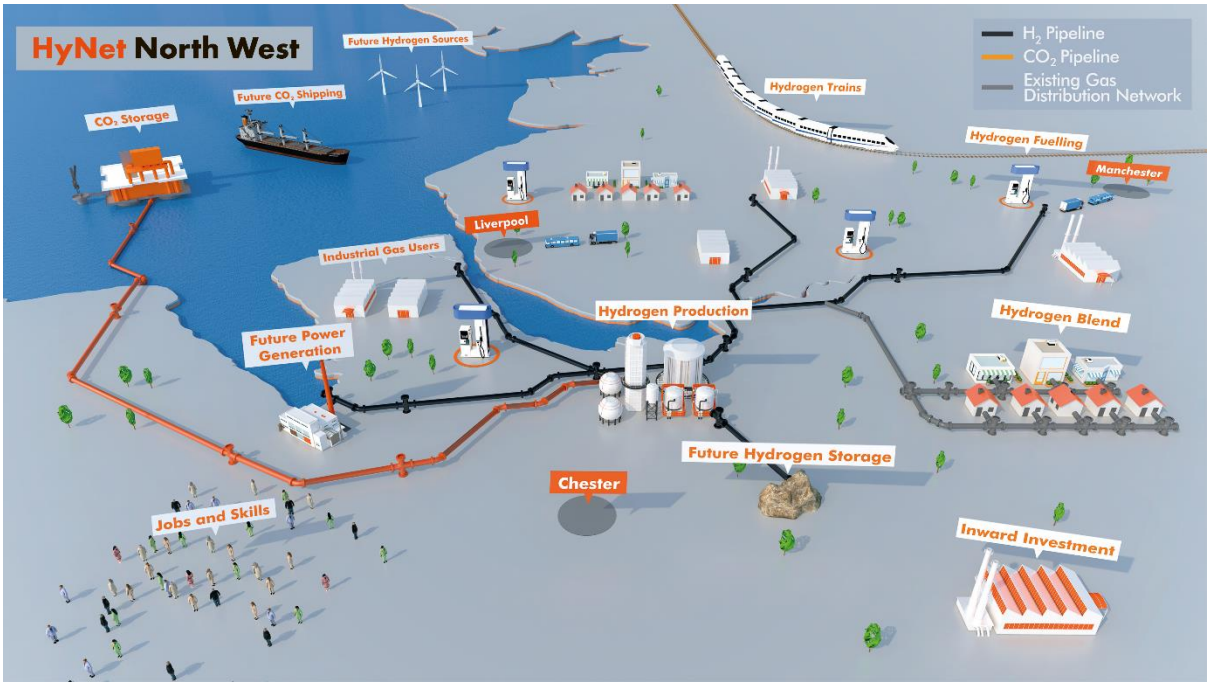
Projects such as HyNet, which plans to reduce carbon emissions across the North-West by 10 million tonnes, and which is centred in our area due to its assets enabling hydrogen production, storage and networking, offer a unique opportunity for Cheshire West and Chester to be the UK's first low-carbon hydrogen borough. Of all the interventions set out in the Climate Emergency Response Plan, HyNet is the most transformative and offers the greatest potential for carbon reduction. It is therefore imperative that the Government supports HyNet in order to lay the foundation for the green industrial recovery to COVID-19.

Case Study: HyNet North West

HyNet North West, the world's first low carbon industrial cluster, is being developed right here in Cheshire West and Chester. The project has a critical role in the global fight against climate

change and is essential for rapidly transforming the borough into a low carbon place to live and work.

The UK's leading industrial decarbonisation project will produce, store and distribute low-carbon hydrogen. Once produced, hydrogen will safely travel within a pipeline to be used initially within our industry and then increasingly for clean transport and to heat our homes and businesses. Together with carbon capture and storage (CCS), these technologies have the potential to reduce carbon dioxide (CO_2) emissions by 10 million tonnes every year by 2030 – the equivalent of taking four million cars off the road.



Many of our local energy intensive manufacturers are participating in this game-changing project, including Essar, CF Fertilisers and Encirc, to deliver net zero through sustainable products and manufacturing processes. This exciting, world leading project is being supported by our very own University of Chester who are researching opportunities for skills and the supply chain which HyNet North West will create, and Cadent, the gas distribution network operator, as a key project partner.

More information is available at www.hynet.co.uk

Achieving carbon neutrality by 2045 will require a significant increase in renewable energy production and infrastructure to meet increased demand, both for electricity and low-carbon hydrogen.

Within the Energy systems analysis provided by Anthesis, the scale of change required in the delivery of renewable energy is set out:

- To provide sufficient solar power to support the decarbonisation of the grid, 0.3 gigawatts (GW) of installed capacity is required by 2025, prior to the delivery of 0.8 GW by 2050. This would represent a 25x increase in installed capacity, based on current capacity of 0.032 GW;
- The report also references the need to significantly increase wind capacity, at a 20.4x increase by 2050;
- A 52.6x increase in Bioenergy capacity – from 5 MW to 263 MW, is required, alongside a 681x increase in installed solar thermal capacity for the provision of hot water;
- Furthermore, the potential for wave and tidal power to grow in capacity over time is noted but is largely unaccounted for in the tool.

The Council also works closely with local industry to support the development of a green economy which provides high-quality, skilled and low-carbon jobs to our residents. This is via existing partnerships such as the Cheshire Energy Hub. Anthesis described a range of interventions for reducing industrial emissions;

- An 11 per cent reduction in industrial energy demand would need to be achieved by 2025, moving towards a 38.5 per cent reduction by 2050;
- This would need to be accompanied by a 6 per cent electrification of industrial processes, with a view to a 31 per cent increase by 2050. Significant expansions in carbon capture usage and storage are required; with 2 per cent of industrial energy coming from carbon capture and storage by 2025, increasing to 42 per cent by 2050.
- Anthesis also noted that a significant reduction in Oil production would be required relative to 2015 levels.

It should also be noted that it is inevitable that there will be residual emissions of CO_2 and other greenhouse gases. Therefore, there will also be a need to remove CO_2 from the atmosphere (negative emissions) so that the UK achieves its goal of net zero emissions. Clearly natural absorption of CO_2 by tree planting will be a key component of this. There are also early stage technology developments of 'Direct Air Capture (DAC)' which would extract CO_2 from the atmosphere, and then store it in carbon capture and storage (CCS) facilities. The technical and economic feasibility of DAC is currently unknown. However, a proven route to negative emissions is Bio-energy with CCS (BECCS). Biomass used as the feedstock to make synthetic natural gas or hydrogen, with carbon capture and storage for the by-product CO_2 from the process, results in an overall removal of emissions from the atmosphere. The Committee on Climate Change (CCC) has estimated that the UK will require 51 million tonnes per year of negative emissions from

BECCS by 2050 to achieve net zero. With carbon capture and storage already planned to be delivered at scale by the HyNet project, and several biomass-based processes planned at locations including Protos, Cheshire West and Chester, and the wider north west UK region, will be very well placed to support the delivery of this UK need.

The co-benefits of action on energy include economic growth and jobs in the fast-growing low carbon and renewable energy sector. The green economy has grown by 5% per year over the last 10 years and is worth 430,000 full time equivalent jobs throughout the supply chain. In light of high energy prices, there are also associated benefits of tackling fuel poverty and associated illnesses such as colds and flus via localised energy production, and enhancing the UK's energy security. [6]

4.2 Feedback from the Climate Emergency Taskforce and Residents:

The Climate Emergency Taskforce noted that the borough's energy intensive industries, while contributing a significant proportion of local emissions, were also vital to sustaining a range of high-quality jobs. Neither the Council nor the Taskforce support reducing local emissions by encouraging these industries to move out of the borough. The Taskforce was updated on the work undertaken by the Cheshire Energy Hub and the development of a local hydrogen economy. It was agreed that Government, both national and local, would need to support the decarbonisation of existing industries via a range of mechanisms in order to retain the benefits of these industries while reducing carbon emissions. It was requested that the Council continue work to engage with Government to maximise the benefit of existing renewable energy funding for energy efficiency and renewable energy generation projects across the public sector estate.

4.3 Residents' Recommendations:

25 responses to the Climate Emergency Taskforce's call for evidence related to Energy and Industry. Residents' recommendations were wide-ranging, but the following key themes were present in multiple submissions to the Climate Emergency Taskforce:

1. Expanding renewable energy generation, such as solar, wind, geothermal on Council land and assets, promoting the roll-out of these power sources across the wider borough, and exploring the use of district heating networks.

[6] Co-benefits-of-climate-change-mitigation-in-the-UK.pdf (imperial.ac.uk)

2. Exploring the area's potential for Energy innovation relating to Hydrogen and Carbon Capture and Storage.

4.4 How the Council will play its part:

4.5 Local Action:

1. Purchase renewable electricity for the Council, beginning in 2020-21;
2. In 2021-22, review the feasibility of purchasing 'green' gas for the Council's buildings;
3. When replacing heating systems in buildings, or including systems in new Council developments, our default option will be low-carbon alternatives to gas/coal/oil based heating systems.
4. In 2020-24, review the establishment of a recycling fund to deliver renewable energy or energy efficiency projects, and prioritise in the Council's capital programme improving the energy efficiency of public sector buildings through measures such as improved insulation.
5. The Council will deliver Phase 2 of the Council's LED streetlight replacement programme, reducing energy demand and speeding the achievement of carbon neutrality in the Council's own operations.
6. The Council will make available a Climate Emergency Fund, which among other uses will provide opportunities to expand community energy provision.
7. Ensure that the energy efficiency of the Council's own industrial and commercial assets improves in order to support the delivery of the Council's own 2030 carbon neutrality target, further information is available in the Carbon Management Plan.

4.6 Working with Partners and Government

8. Support in principle the development of a low-carbon hydrogen economy. The HyNet project aspires to capture 10 million tonnes of CO_2 from the North West's industrial cluster, add £17bn Gross Value Added to the North West economy, alongside supporting 5979 jobs. The Council will also explore opportunities for hydrogen to be mixed with the gas grid using existing infrastructure for the purposes of domestic and commercial heating. It is noted that the blue hydrogen proposed in HyNet is intended to be a transitionary step towards green hydrogen, and therefore the development of green hydrogen will also be supported by the Council.
9. Work with the LEP, the Mersey Dee Alliance, Net Zero North West and Cheshire Energy Hub to review opportunities to reduce industrial energy use within Cheshire West and Chester, through projects such as the Energy Innovation District and E-Port Smart Energy

Master Plan, which aim to aims to reduce the carbon emissions from the Ellesmere Port industrial cluster by 34 per cent by 2030;

10. Working with the Liverpool City region on the Mersey Tidal project to seek to deliver clean energy to the Cheshire and Merseyside region;
11. The Council will work with central Government and local industrial stakeholders to promote the development of funding mechanisms to ensure the economic viability of blue hydrogen, as a transitionary step towards green hydrogen, to enable the delivery of initial HyNet infrastructure by 2025.
12. The Council will work with the Mersey Dee Alliance on the development and delivery of an energy prospectus.
13. The Council will work with the local Energy Network infrastructure provider, SP Energy Networks, to assure the delivery of network upgrades to facilitate readiness for 100 per cent electric vehicles by 2030.

4.7 How residents can play their part:

We all need to change our habits and here are some suggestions to help make a difference:

1. Switch to a renewable energy supplier;
2. Install renewable energy generation at home;
3. Plan to switch your home heating system to a renewable alternative, such as a heat pump.
4. Consider the energy required to produce the products you purchase.

4.8 Key Performance Indicators:[7]

Ref	Measure	Measure Type	Baseline	2021 Data	2022 Data	2024 Target
M1	Industrial Sector Annual Carbon Emissions – Cheshire West	Indirect Influence	2126.1 $ktCO_2$	1894.1 kt CO_2 (2022 figures for 2019 data)	1831.7 kt CO_2 (2022 figures for 2020 data)	11 per cent reduction

[7] Accessible Description: Energy and Industry Indicators Table. Measure 6 is Industrial Sector Annual Carbon Emissions, Cheshire West and Chester. This is an indirect measure. The baseline is 2,147.4 $ktCO_2$. The 2024 target is an 11 per cent reduction. Measure 7 is the Percentage of the LED streetlight replacement programme completed. This is a direct measure. The baseline is 73 per cent. The target is 100 per cent by 2024.

	and Chester - (BEIS)					
M2	Percentage of the LED streetlight replacement programme completed	Direct Influence	73%	79.54%.	94.90%	100 per cent

4.9 Key Supporting Documents:

- Local Enterprise Partnership Energy and Clean Growth Strategy
- Mersey Dee Alliance Energy Prospectus

4.10: Community Action Case Study

Green energy for Vivo Care Choices

Cheshire West and Chester Council company Vivo Care Choices has signed a renewable energy contract to help create a greener and cleaner environment.

As part of its Carbon Neutral Plan for 2020-25 to support the Council's Climate Emergency campaign, Vivo will be using 100 per cent renewable energy from April 2021.

Vivo's Plan sets out for the organisation to become carbon neutral by 2025, with renewable energy one of the 12 key actions being put in place. Others include measuring its carbon footprint, using light-emitting diode (LED) lighting and solar panels, and contributing a percentage of Community Fund grants to environmental projects.

https://www.yourwestcheshire.co.uk/NewsArticle/%7BB8978788-CF08-49B9-9BF5-6D0015D78524%7D?utm_medium=email&utm_source=govdelivery

Delivered Actions:

- Purchase renewable electricity for the Council, beginning in 2020-21;

- The Council will work with the Mersey Dee Alliance on the development and delivery of an energy prospectus.
- When replacing heating systems in buildings, or including systems in new Council developments, our default option will be low-carbon alternatives to gas/coal/oil based heating systems.
- The Council will make available a Climate Emergency Fund in 2020-21, which among other uses will provide opportunities to expand community energy provision.
- Work with the LEP and Cheshire Energy Hub to review opportunities to reduce industrial energy use within Cheshire West and Chester, through projects such as the Energy Innovation District and E-Port Smart Energy Master Plan, which aim to aims to reduce the carbon emissions from the Ellesmere Port industrial cluster by 34 per cent by 2030;
- Ensure that the energy efficiency of the Council's own industrial and commercial assets improves in order to support the delivery of the Council's own 2030 carbon neutrality target, further information is available in the Carbon Management Plan.

5. **Transport - Lead Officer**: Director **of Transport and Highways**

5.1 Sector Description, Key Targets:

Transport is the second-highest emitting sector locally, only surpassed by industry; the majority of emissions from Transport relate to on-road transport (19 per cent of total emissions), with a minimal proportion (less than 1 per cent) attributable to rail and waterborne transport. Anthesis' report sets out that significant changes in the way we travel will need to occur in order to achieve carbon neutrality. Currently, 74 per cent of employed residents travel to work by car, with 15 per cent of residents commuting out of the Cheshire West and Chester region. 40 per cent of households own more than one car, and within the Chester urban area, fewer than 10 per cent of journeys to work were undertaken on public transport. The most impactful intervention we can make is distance reduction, (the most significant change we can make is avoiding powered travel entirely, followed by reducing the distance that we travel), which can be facilitated by the use of digital infrastructure. This sits at odds with continued projected rises in traffic growth, of 8.3 per cent locally by 2030. Education on both the need for and options available regarding sustainable travel will play a central role in tackling the climate emergency. It is important to note that Transport is interdependent with the other issues within the plan, in particular Energy in relation to climate change, given the necessity for significant transition to renewable energy to fuel renewable transport. The extent of change required is therefore stark, and would represent a fundamental change in the way we live and move in the borough, including measures such as:

- By 2025, a 17 per cent reduction in total travel demand will be required, alongside a 25 per cent reduction in car travel. This will be required to increase to 25 per cent and 38 per cent respectively by 2050;
- Where travel is required, however, there is a substantial carbon benefit derived from using public transport. The modal share of public transport would need to increase from less than 10 per cent, to 18 per cent by 2025, increasing to 29 per cent by 2050;
- This public transport would itself be low-carbon, either via electrification or the use of low-carbon hydrogen fuel, with the achievement of 100 per cent low carbon rail and 51 per cent low carbon buses by 2025;
- Where car travel is unavoidable, these cars would need to be low or zero carbon, with a transition to 100 per cent electric or hydrogen vehicles by 2050;
- The most challenging aspect of transport to decarbonise is road freight, and a conservative 6 per cent transition to zero carbon freight is assumed in SCATTER Level 4.

There are significant links between air quality and transport inequalities. Air pollution levels in the UK are associated with deprivation, and those most affected by air pollution in the UK are those least responsible for producing it. There are links between air pollution, ill health and children's cognition, therefore investment in reducing air pollution is likely to address both health and educational inequalities.

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5.2 Feedback from the Climate Emergency Taskforce and Residents:

The Taskforce noted that the Council's Cycling and Walking strategy had been recently consulted on, and that alongside this, Local Cycling and Walking Infrastructure Plan (LCWIP) are being developed focusing on our economic hubs. The LCWIP was adopted in July 2020. These consultations set out that there was strong support for improving cycling and walking infrastructure. Members highlighted the importance of integrating active travel and public transport. Members discussed that when considering potential routes for cycling infrastructure, there is a need to ensure that all areas can benefit rather than just those where active travel is already common. The opportunity for a significant expansion in green infrastructure when considering new development and the re-design of existing transport networks was raised by at the Advisory Panel, and it was discussed that wildflower planting should play a role in this to promote biodiversity and improve air quality.

The need for appropriate metrics was also discussed – moving past using the number of vehicles as a measure of success, and towards broader public satisfaction with our places and spaces. It was discussed that Government, both local and national, needed to improve on how it valued non-motorised traffic in business cases in order to shift investment towards lower-carbon options. The importance of transport options that work around people's lives was also discussed, and that given the complexity of the journeys that might occur during the course of a day, sustainable transport options must be flexible and have the same degree of accessibility as personal transport.

5.3 Residents' Recommendations:

58 responses to the Climate Emergency Taskforce involved references to Transport and Infrastructure. The following key themes are present in multiple submissions:

1. Expanding cycling and walking infrastructure, and distance reduction opportunities.

2. A significant expansion of communication, engagement and education on public transport options, with multiple references to bus and rail subsidies.
3. Support for electric vehicles, with recommendations that the Council take the lead in respect of its fleet.
4. Consideration of the carbon impacts of the Council's current and planned infrastructure and regeneration schemes.

5.4 How the Council will play its part:

5.5 Local Action:

1. Develop a Residential Design Guide that drives modal shift and supports the achievement of carbon neutrality. In-line with the government's 'Gear Change' vision, develop separate cycling and active travel infrastructure that is designed around usability, that is joined up, and which feels direct, logical and intuitive. This will be achieved by creating segregated cycling infrastructure, re-balancing the street towards prioritisation of pedestrians, cyclists and public transport and supporting electric vehicle/low carbon vehicle infrastructure.
2. All future major transport projects will have a carbon assessment as part of their business case.
3. Develop the enhanced partnership model for Bus Transport, working closely with local operators to review options for zero emissions buses on all routes, to create the conditions to achieve 51 per cent electrification by 2025 and full electrification by 2030. This will be enabled by provision of zero emission fuelling infrastructure, including hydrogen buses and future electric buses.
4. Within the current Council Plan period, review the Local Transport Plan to strengthen provisions regarding climate change in-line with the Council's Climate Emergency priority.
5. Review the outcomes of e-scooter trials within Cheshire West and Chester.
6. Procure zero emission vehicles where technology is available and cost effective when we replace our existing fleet.
7. Ensuring that residents and businesses can access fast and reliable digital connections is a social and economic goal for the council. Whilst we have made some significant progress through the Connecting Cheshire programme to date there is more to do. Almost 39,500 premises having benefited from public sector funding for superfast broadband access, but we need to go further to address disparities in coverage and to ensure that all communities benefit from future technological change and growthWe are a strategic partner in this work

and will be working with them once completed to help ensure it results in action and tangible outcomes for residents and businesses. Having the skills to know how to access and use digital devices and connections is also an important part of our focus and we are supporting this through the delivery of digital skills in our own adult education programmes and working with the Digital Skills Partnership for Cheshire and Warrington.

8. Work with Building Digital UK (BDUK) through next phases of gigabit capable infrastructure programmes.
9. Develop and support the work of the Integrated and Sustainable Travel Taskforce in its goal to achieve consensus on ways to improve the delivery of inclusive walking, cycling and public transport projects.

5.6 Working with Partners and Government:

10. Support the development of Hydrogen infrastructure for trains, buses and road freight, and review opportunities for hydrogen refuelling stations on arterial routes, in-line with Hydrogen production commencing locally in 2025.
11. Work with partners and draw down funding from Government to increase the number of publicly available EV charging points developed by the Council.
12. Support the development of Growth Track 360, which includes the electrification of the line from Crewe to North Wales.
13. Continue to work with Transport for the North and Department for Transport on their respective key transport decarbonisation plans.
14. Working with local partners, including Town and Parish Councils, schools and communities to improve walking infrastructure through improved pavement hedgerow control, dropped kerbs and suitable pedestrian crossings.

5.7 How residents can play their part:

We all need to change our habits and here are some suggestions to help make a difference:

1. Consider if you can avoid the need for a journey by using technology;
2. Prioritise making journeys by no-carbon options, such as cycling or walking;
3. Where powered travel is needed, use public transport;
4. Consider purchasing an electric or low-carbon vehicle;
5. Share a car with a colleague or friend if you can;

6. Aviation is a significant contributor to carbon emissions, and reducing our use of flights makes a significant difference to reducing our personal carbon footprints;
7. Buy local products to reduce the emissions incurred to transport your goods to their destination;
8. Consider offsetting your travel emissions by contributing to offsetting schemes.

5.8 Key Performance Indicators:[8]

Ref	Measure	Measure Type	Baseline	2021 Data	2022 Data	2024 Target
M3	Transport Sector Annual Carbon Emissions – Cheshire West and Chester - (BEIS)	Indirect Influence	943.1 ktCO2	923.8 ktCO2 (2019)	757.8 ktCO2 (2020)	17 per cent Reduction
M4	Electric vehicle infrastructure: Number of publicly available electric vehicle charging devices developed by the Council	Direct Influence	0	15	15 (30 - end November - Northgate) (57 - end December)	48
M5	Department for Transport: Modal Share by Local Authority, Weekly Cycling	Indirect Influence	8.70%	10.3% (2019-20)	9.7% (2020-21)	25 per cent increase

[8] Accessible Description, Transport Indicators Table: Measure One is Transport Sector Annual Carbon Emissions for Cheshire West and Chester. This is an indirect measure. The baseline is 950 $ktCO_2$. The 2024 target is 17 per cent reduction. Measure 2 is Electric Vehicle Infrastructure: Number of publicly available electric vehicle charging devices developed by the Council. This is a direct measure. The baseline is 0 reflecting that this is the start of the measuring period. The 2024 target is 48. Measure 3 is Department for Transport Modal Share by Local Authority, Weekly Cycling. This is an indirect measure. The baseline is 8.7 per cent. The target is a 25 per cent increase. Measure 4 is Department for Transport Modal Share by Local Authority, Weekly Walking. This is an indirect measure. The baseline is 69.1 per cent. The target is a 25 per cent increase. Measure 5 is Public Satisfaction in Public Transport Options. This is an indirect measure. The baseline is 58 per cent. The target is 61 per cent.

M6	Department for Transport: Modal Share by Local Authority, Weekly Walking	Indirect Influence	69.10%	67.1% (2019-20)	74% (2020-21)	25 per cent increase
M7	Resident Satisfaction (Public Transport options - NHT)	Indirect Influence	57%	50%	54%	61 per cent

5.9 Key Supporting Documents:

- Local Transport Plan – Update 2017
- LEP Transport Strategy
- Chester Transport Strategy
- Northwich Transport Strategy
- Winsford Transport Strategy
- Cycling Strategy
- Local Cycling and Walking Infrastructure Plan
- Local Plan

5.10 Community Action Case Study

Council and Sustrans working together to get people more active

A project funded by Cheshire West and Chester Council and delivered by Sustrans aims to get residents in Chester and Winsford travelling more actively, such as by walking or cycling.

The Active Travel Transformation project is a two-year behaviour change project which started in May 2019. Active travel is a simple low cost and effective way for people to travel whilst increasing levels of physical activity in their day to day life.

As well as health benefits, the project will also benefit the environment. An increase in walking and cycling can help to reduce car travel leading to reductions in air pollution, carbon dioxide emissions and levels of congestion.

https://www.cheshirewestandchester.gov.uk/your-council/councillors-and-committees/the-climate-emergency/updates/Council-and-Sustrans-working-together-to-get-people-more-active.aspx?utm_medium=email&utm_source=govdelivery

6. Housing – Lead Officer – Head of Housing

6.1 Sector Description, Key Targets:

Residential property makes up a substantial proportion of Cheshire West and Chester's greenhouse gas emissions, at 572,000 tons carbon dioxide equivalent per year, or 14 per cent as of 2016 based on SCATTER data[9]. This is the third largest element of the borough's emissions, following Industrial and commercial emissions and Transport.

Steady progress has been made on improving the energy efficiency of domestic properties in recent years. Residents within the borough have benefited from the installation of energy efficiency measures provided through a variety of funding sources, including the national Energy Company Obligation (ECO). Since the inception of ECO in 2013, 9,122 Cheshire West households have benefitted from the installation of energy efficiency measures such as loft or wall insulation and efficient boilers. In addition, the Council has been successful in applying to funding bodies for delivery of energy efficiency schemes and works closely with affordable warmth practitioners within the borough signposting eligible residents into local schemes which install measures and provide energy efficiency advice and guidance.

The energy efficiency of properties is measured using Energy Performance Certificate (EPC) ratings. The information below shows the EPC ratings for domestic properties from 2008-2019 [10]:

- EPC Rating A: 43 Lodgements
- EPC Rating B: 2,426 Lodgements
- EPC Rating C: 27,076 Lodgements
- EPC Rating D: 42,346 Lodgements
- EPC Rating E: 17,536 Lodgements
- EPC Rating F: 4,947 Lodgements
- EPC Rating G: 1,580 Lodgements
- Not Recorded: 1
- Total Number of Lodgements: 95,955

[9] The latest available data from BEIS relates to 2018. This sets out that emissions from domestic sources stand at 530,000 tons CO_2.

[10] Only 66 per cent of properties carry a publicly available EPC rating.

Source: https://www.gov.uk/government/statistical-data-sets/live-tables-on-energy-performance-of-buildings-certificates#epcs-for-all-properties-non-domestic-and-domestic

In order to achieve carbon reductions to enable carbon neutrality by 2050, Anthesis proposed that the following scale of intervention would be necessary;

- Solid wall insulation at a rate of 1,087 households per year;
- Loft insulation at a rate of 2,500 households a year;
- Super-glazing installations of 2,345 per year;
- new builds to Passivhaus standard and a 21 per cent reduction in thermal leakiness, by 2025.
- By 2050, the vast majority of homes would have been subject to retrofit, and a 75 per cent reduction in thermal leakiness would have been achieved on all properties;
- Furthermore, average home temperatures would have reduced from 17.3 degrees Celsius to 16 degrees; this could be achieved through zonal heating controls, rather than reducing comfort.
- Significant changes are required to home heating. Currently, 139,200 – or 96 per cent of homes, have gas systems installed.
- While gas boilers will be banned in 2025, there is a need to rapidly accelerate a transition from gas, through the installation of 43,400 new heating systems, including technologies such as air or ground-source heat pumps.
- By 2050, 144,000 or 93 per cent of homes will have had new heating systems installed.
- Finally, the electrification of cooking (currently 47 per cent) will need to continue, achieving 69 per cent by 2025, and 100 per cent by 2050.

Energy efficient homes are an essential factor in preventing fuel poverty and tackling inequality. Excess winter deaths occur with three times the frequency in the coldest quarter of homes compared to the warmest quarter. Exposure to mould and damp causes a range of conditions including asthma and bronchitis. The impacts of cold homes are not solely physical; the mental health of residents in cold homes is adversely affected. People that sleep in bedrooms colder than 15 °C are 50% more likely to suffer mental health problems compared[11] to those whose bedrooms are heated to 21 °C. Therefore the co-benefits of investment in heating are likely to include improvements in mental and physical health, tackling inequalities and levelling up regions.

[11] Co-benefits-of-climate-change-mitigation-in-the-UK.pdf (imperial.ac.uk)

6.2 Feedback from the Climate Emergency Taskforce and Residents:

The Climate Emergency Taskforce reviewed work planned by ForHousing, the Council's Housing Management Provides for Council homes in Ellesmere Port, Neston and Winsford. The Taskforce welcomed ForHousing's plans to improve the energy efficiency of its housing stock with up to £17m of planned investments. Members also supported the work of the Council's Housing Partnership (including Sanctuary, Weaver Vale, ForHousing and other registered providers) which is encouraging and working with all providers to understand how they are contributing to achieving carbon neutrality by 2045. It was discussed that this could involve enabling Housing providers to also declare a Climate Emergency.

The delivery of new build homes was also discussed. Officers highlighted the opportunity for the Council to deliver high standards in its own housing delivery, and the need to reflect on the balance between cost and the number of affordable homes delivered.

The Taskforce also reviewed the impact of building regulations on local property development. It was discussed that while the Council could set higher local standards, without effective tools for ensuring compliance they may not be adhered to, as nationally operating building control inspectors do not necessarily check for local variations from the national regulations. The Taskforce recommended that the Council should lobby for a change in regulations regarding building control services to ensure that locally set requirements are prioritised.

In addition to the Climate Emergency Taskforce, there has also been a Scrutiny review of the Local Plan which is due to be finalised in the autumn and subsequently report to Cabinet. One of the draft recommendations from this review is: that all new builds (Council and private developments) are built at least to a higher standard such as the Passivhaus Standard, renewable energy and EV charging points and access to a high standard of broadband infrastructure. This will be incorporated into the action plan.

6.3 Residents' Recommendations:

17 responses to the Climate Emergency Taskforce's call for evidence included reference to Housing interventions. Residents recommended:

1. Consideration of increasing building regulations to Passivhaus standards;

2. Supporting the retrofitting of insulation and other energy efficiency measures in domestic properties, including a transition to low-carbon methods of home heating such as electrification.

6.4 Actions

6.5 Local Action:

1. The Council will review options and costs for low-carbon housing in Council-led housing schemes, in order to deliver the commitment set by Cabinet to seek to ensure that all new builds (Council and private developments) are built to a higher standard such as the Passive House Standard, renewable energy and EV charging points and access to a high standard of broadband infrastructure.
2. Develop an action plan specifically aimed at reducing the number of fuel poor households across the borough, working closely with established affordable warmth partners.
3. Work with the Housing Partnership to agree shared Climate Emergency goals, including the aspiration to work towards a carbon neutral borough by 2045, and work with social housing partners to deliver low-carbon housing and retrofit existing stock.
4. Ensure the Council and housing providers support all forms of homeowners, tenants and occupiers to maximise access to all available funding opportunities for retrofit measures to improve homes, including the Green Homes Grant LAD scheme, energy redress programmes and others.
5. Review the available domestic energy advice and support offer to ensure that government funding schemes are appropriately promoted and leveraged to achieve the highest possible carbon return on investment. This includes the Green Homes Grant.
6. Review opportunities to support private sector landlords for whole house retrofit and other energy improvements for private rented properties that do not meet the Minimum Energy Efficiency Standard.
7. The Council will explore options for ensuring that new development should comply with the UN Sustainability Targets and the Anthesis targets**.**

6.6 Working with Partners and Government:

8. Work with Government and partners to review opportunities for significantly expanding whole-house retrofit programmes in social housing to support the achievement of Anthesis' targets relating to low carbon energy, solid wall insulation, loft insulation and superglazing.

9. Work with Homes England to deliver our shared priorities around climate change and ensure sufficient resource is available to deliver new build low carbon affordable homes and request that Homes England considers establishing and providing expert support to housing providers regarding delivery options for low carbon homes.
10. The Council will respond to Government consultations to ensure that the legislative framework for Planning and Building Control promotes the ability for local areas to set higher standards for energy efficiency than the national minimum standards and puts a framework in place to ensure these standards are implemented.

6.7 How residents can play their part:

We all need to change our habits and here are some suggestions to help make a difference:

1. Consider switching to electricity for cooking.
2. Switch provider to one that provides sustainable energy
3. Ensure your home has LED lighting and draught-proofing.
4. Upgrade your home insulation – loft, cavity wall and draught.
5. Turn down your heating where you can, while remaining comfortable.
6. Think about whole-house retrofit, particularly if carrying out renovations.
7. Review government grant opportunities to improve homes.
8. Consider opportunities for community-led housebuilding.

6.8 Key Performance Indicators: [12]

Ref	Measure	Measure Type	Baseline	2021 Data	2022 Data	2024 Target
M8	Annual Housing Emissions	Indirect Influence	531.2 ktCO$_2$	529 kt CO$_2$ (2022	516 kt CO$_2$ (2022	450kt CO$_2$ per annum

[12] Accessible Description: Housing Indicators Table: Measure 8 is Annual Housing Emissions based on BEIS data. This is an indirect measure. The baseline is 530 ktCO$_2$. The target is 450ktCO$_2$ per annum. Measure 9 is Carbon neutral new build homes planned, pipeline delivered including council housing programme and housing provider programmes. This is a direct measure. The baseline and target for this measure are in development. Measure 10 is private sector landlords supported to retrofit properties that do not meet the minimum energy efficiency standard. This is a direct measure. The baseline and target for this measure are in development. Measure 11 is retrofit measures to council housing and housing provider stock. This is a direct measure. The baseline and target for this measure are in development. Measure 12 is the per cent of properties achieving Band C EPC rating or above. This is an indirect measure. The baseline and target are in development.

	(BEIS LA CO_2 emissions)			figures for 2019 data)	figures for 2020 data)	
M9	Carbon neutral new build homes delivered include council housing programme and housing provider programmes	Direct Influence	First year to be baseline.	Data source to be established during 2021-22	The Council is developing its pipeline of new homes with the intention that they are built to carbon neutral standards.	To be determined following the establishment of the baseline.
M10	Private sector landlords supported to retrofit properties that do not meet the Minimum Energy Efficiency Standard.	Direct Influence	First year to be baseline.	Data source to be established during 2021-22	6 private landlords supported to retrofit properties in a pilot.	To be determined following the establishment of the baseline.
M11	Retrofit measures to council housing and housing provider stock	Direct Influence	First year to be baseline.	c.127 council housing retrofits planned for 2021-22	123 properties due to complete end March 23.	To be determined following the establishment of the baseline.
M12	Per cent of domestic properties achieving to	Indirect Influence	First year to be baseline.	41.50%	42.20%	To be determined.

	Band C or above					

6.9 Key Supporting Documents:

- Housing Strategy 2014-2020
- Local Plan
- Home Energy Conservation Act Reporting

7. Business Premises and Engagement - Lead Officer – Head of Economic Growth

7.1 Sector Description, Key Targets:

Commercial and non-domestic buildings fall within the 64 per cent of emissions derived from Commercial (11 per cent) and Industrial and Institutional buildings (53 per cent). Emissions from commercial buildings total 442,000 tons per year, the fourth highest emitting sector after industry, transport and residential. In order to achieve the SCATTER Level 4 pathway, four interventions are proposed;

- A significant reduction in commercial heating and cooling (16 per cent by 2025);
- The electrification of heat (a 32 per cent reduction in gas and oil-fired boilers by 2025);
- A significant increase in the energy efficiency of appliances and lighting in non-domestic buildings (from 1.63 TWh to 0.59 TWh) by 2025;
- A 22 per cent increase in the electrification of cooking.

Investment in energy efficiency technology and energy generation is likely to offer substantial benefits to business including energy security against high energy prices. Achieving greater levels of energy efficiency can enable businesses to invest in staff, technology or create a circular fund for further energy efficiency measures.

7.2 Feedback from the Climate Emergency Taskforce and Residents:

The Climate Emergency Taskforce received information on the work of the North Wales Mersey Dee Business Council to support the decarbonisation of small and medium enterprise (SME) locally, and the work of the Federation of Small Businesses. This included information on the FSB report for the Welsh Government “The New Normal – an Environmental Approach for SMEs” published in December 2019. The primary drivers covered were power, transport, air pollution and recycling/ waste. The report contained the FSBs environmental principles, the five actions SMEs can take and the five actions the government can take to facilitate decarbonisation, listed below.

Five actions SMEs can take:

1. Understand their own environmental impact, including their supply chain;
2. Consider energy efficiency improvements;
3. Aim for best practice;

4. Redesign the commute;
5. Prepare for changes to waste and recycling policy.

Five actions that government can take:

1. Provide an advice line for SMEs on environmental issues;
2. Consider including business premises in decarbonisation or insulation schemes;
3. Develop a long term EV strategy;
4. Deliver a clean air framework that works for smaller businesses;
5. Ensure new recycling and waste regulations understand the needs of SMEs.

The Taskforce raised the following key issues:

- The need to have a clear starting point in terms of businesses readiness to adapt to climate change, this could include measures such as the business needs survey;
- It was noted that Cheshire West and Chester is well-placed geographically in terms of connectivity, and it was discussed that a holistic approach to transport which enabled SMEs to thrive was necessary;
- In relation to electric cars, range anxiety was discussed as an issue for SMEs, but it was felt this would reduce as vehicles improved and EV infrastructure is bolstered;
- In relation to power supply, businesses did not feel they always had significant influence on power supply in leased properties, and this was felt to be a significant issue. Therefore, engagement with landlords would also be necessary to promote the adoption of renewable energy in the commercial sector;
- The cost implications of clean air zones for SMEs were highlighted, thought it was recognised that businesses understood the need to improve air quality;
- Similar concerns were expressed around the cost implication of a workplace parking levy and it was discussed that it would be important to provide transitionary support if these measures were implemented;
- It was discussed that zero percent loans to businesses to support them to transition to renewable forms of energy would be helpful;
- Providing support for businesses to gain environmental accreditation such as PAS 2060 was also suggested as a potential measure;
- It was discussed that the Council was a large client for businesses throughout the borough and that standardising its procurement approach.
- The need to promote working from home was discussed, as a measure to both tackle COVID-19 and to potentially reduce transport emissions.

7.3 Residents' Recommendations

30 responses provide views on interventions regarding how the Council could work with business to reduce carbon emissions. The following key themes are present in multiple submissions:

1. Communicating with and supporting local businesses to reduce their carbon emissions, through 'quick wins' such as closing doors during the day to reduce heat loss.
2. Encouraging businesses to transition to low-carbon heating;
3. Encouraging businesses to ensure their staff do not keep engines on while stationary;
4. Work with business to support the transition to low-carbon transport e.g. asking businesses to commit to having 30 per cent of their fleet as EV by 2030;

7.4 How the Council will play its part:

7.5 Local Action:

1. Review intelligence on business needs regarding climate change mitigation and adaptation;
2. Align the implementation and outcomes of the Inclusive Economy Strategy with the Climate Emergency Response Plan.
3. Develop a communications plan that includes an information pack on the LetsTalkBusinessCW website that: provides helpful information to support SME's to make changes; informs and engages business in this agenda; that supports business to access new initiatives and funding streams.
4. Working with partner agencies, ensure that any regeneration or enterprise zone projects are designed with net-zero in mind and contribute to the achievement of net-zero by 2045.

7.6 Working with Partners and Government:

5. Work with external partners to develop a long-term business grant programme (phase 2 programme) to support low-carbon and energy efficiency investments;
6. Work with Government to develop new financial models to make commercial retrofit at scale a feasible option.
7. Work with the Mersey-Dee Alliance to initiate activity as part of the MDA workplan.
8. Embed low carbon discussions into the Inward Investment and Key Account Management strategy (in development).

9. Support businesses and partners to sign up to the Net Zero Carbon Buildings Commitment. This commitment challenges organisations to reach net zero carbon in operation for all assets under their direct control by 2030.

7.7 How businesses can play their part:

We all need to change our habits and here are some suggestions to help make a difference:

1. Understand your own emissions and environmental impact, including your supply chain;
2. Switch to a renewable energy supplier;
3. Engage with your landlords/tenants to switch to green energy;
4. Access support available via existing schemes such as the LEP Blue Orchid programme, the LEP Low Carbon Energy Fund, and the Industrial Energy Transformation Fund;
5. Install renewable energy generation at your premises;
6. Plan to switch your heating system to a renewable alternative;
7. Support your employees to work from home and use public transport;
8. Switch your fleet to electric or low-carbon vehicles;
9. Include carbon management and sustainability in your procurement policy;
10. Ensure any land you own or manage promotes biodiversity.

7.8 Key Performance Indicators:[13]

Ref	Measure	Measure Type	Baseline	2021 Data	2022 Data	2024 Target
M13	Commercial property median EPC rating;	Indirect Influence	D	D (60.4% band D or lower)	D (58.2% band D or lower)	C

7.9 Key Supporting Documents:

- LEP Strategic Economic Plan
- LEP Energy and Clean Growth Strategy
- Local Plan

[13] Accessible Description: Business Premises and Engagement Measures Table: Measure 13 is Commercial Property Median EPC rating. This is an indirect measure. The baseline is D. The 2024 target level is EPC rating C.

- Ten Point Plan for a Green Industrial Revolution

7.10 **Delivered Actions**

- Review intelligence on business needs regarding climate change mitigation and adaptation;

8: Land Use, Adaptation, Climate Repair – Lead Officer, Director, Mersey Forest

8.1 Sector Description, Key Targets:

Land management can have a range of impacts on the mitigation of climate change through complex systems of emissions and sequestration (capture) of CO_2. Cheshire West has a high density of dairy farming, that provide a challenge and also an opportunity for actions that can help to reduce green house gas emissions.

Land management also plays a key role in the adaptation of communities and landscapes to the projected climate change due to historic emissions of carbon dioxide. Reducing flood risk and providing connected habitats for wildlife are two examples of potential adaptation actions.

Some of the mitigation and adaptation opportunities are listed below:

Mitigation:

- Carbon storage and sequestration
- Providing low carbon fuels
- Material substitution
- Food production
- Reducing the need to travel by car

Adaptation:

- Managing high temperatures
- Managing water resources
- Managing riverine flooding
- Managing coastal flooding
- Managing surface water
- Reducing soil erosion
- Helping other special adapt
- Managing visitor pressure

Avoiding the worst impacts of climate change is complementary to many other objectives. In the context of land use in Cheshire West and Chester, there are many co-benefits of taking steps to

cut emissions. When deciding where and how to make emissions reductions there are many other considerations, including but not limited to:

- Future land stewardship promotions by government for mitigation and adaptation. This will be delivered via the emerging Environmental Land Management Scheme, due to launch in 2022.
- Balancing food production with land-use management and land-use change;
- Flood management;
- Maintaining landscape character, particularly in the context protected land, nature reserves;
- Maintaining and enhancing biodiversity, including connected habitats;
- Improving animal welfare;
- Improving wellbeing, our natural capital as a health asset
- Opportunities to work together as a wider region to make the necessary carbon reductions in a way that maximises the co-benefits while minimising potential adverse impacts

8.2 Land Use:

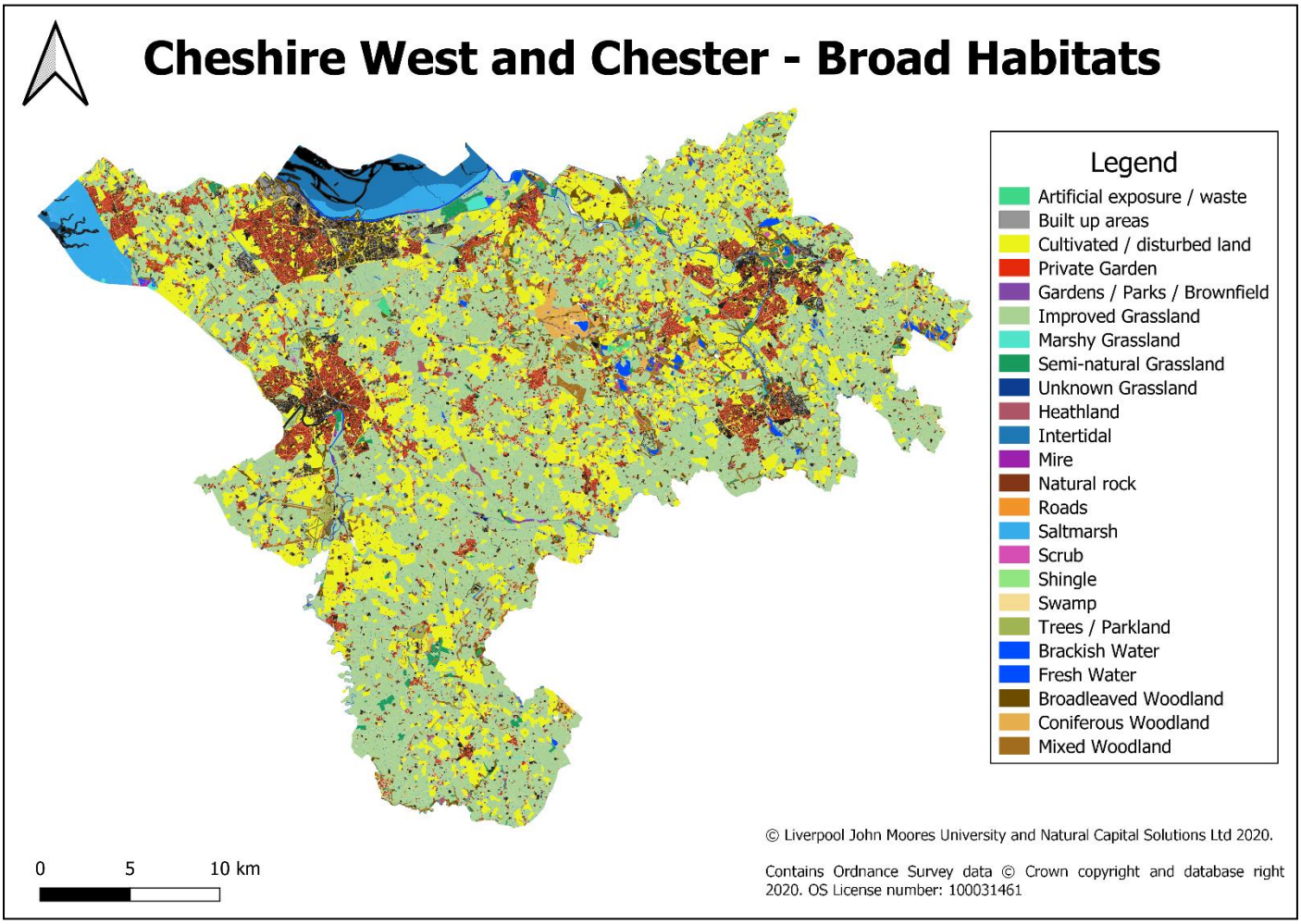
Natural capital is the concept that we can use to value the assets that nature provides to us. We need a flourishing natural environment to support economic growth and development. The stock of natural capital, our biodiversity, wildflowers, forests, and rivers has been significantly depleted during the twentieth century. This depletion needs to be reversed to achieve climate change mitigation and adaptation benefits and support long-term natural and economic prosperity. To support this, the Council is jointly funding a Local Enterprise Partnership project to produce a Natural Capital Audit, Investment and Implementation Plan. This work will lead to:

- Improved knowledge about the stocks and flows of natural capital across the Cheshire and Warrington area, forming the basis for increasing awareness of the opportunities to use the areas natural capital more effectively to support sustainable growth in the sub region and provide Improved air, land and water quality as well as health, resilience, carbon capture and inward investment.
- Highlight the current provision of climate services provided by land across Cheshire West and Chester and places where there may be a need for additional mitigation or adaptation services to meet local needs.
- Improved level of understanding of the scale and value of natural capital in Cheshire and Warrington on a regional and national scale and how this relates/contributes to socio-economic factors including social and economic deprivation.

- Identification and quantification of opportunities to improve the quality and quantity of natural capital within Cheshire and Warrington.
- Development of mechanisms (including potential modelling) to support the identification and prioritisation of significant projects that will enhance ecosystem service benefits from our natural capital assets and lead to more resilient communities and our economy.
- Identification of investment opportunities which will maximise the value of prioritised natural capital assets in Cheshire and Warrington and help meet local and national socio-economic priorities.

As part of a Natural Capital Audit and Investment Plan for Cheshire and Warrington, current land management types have been identified.

Figure 3:

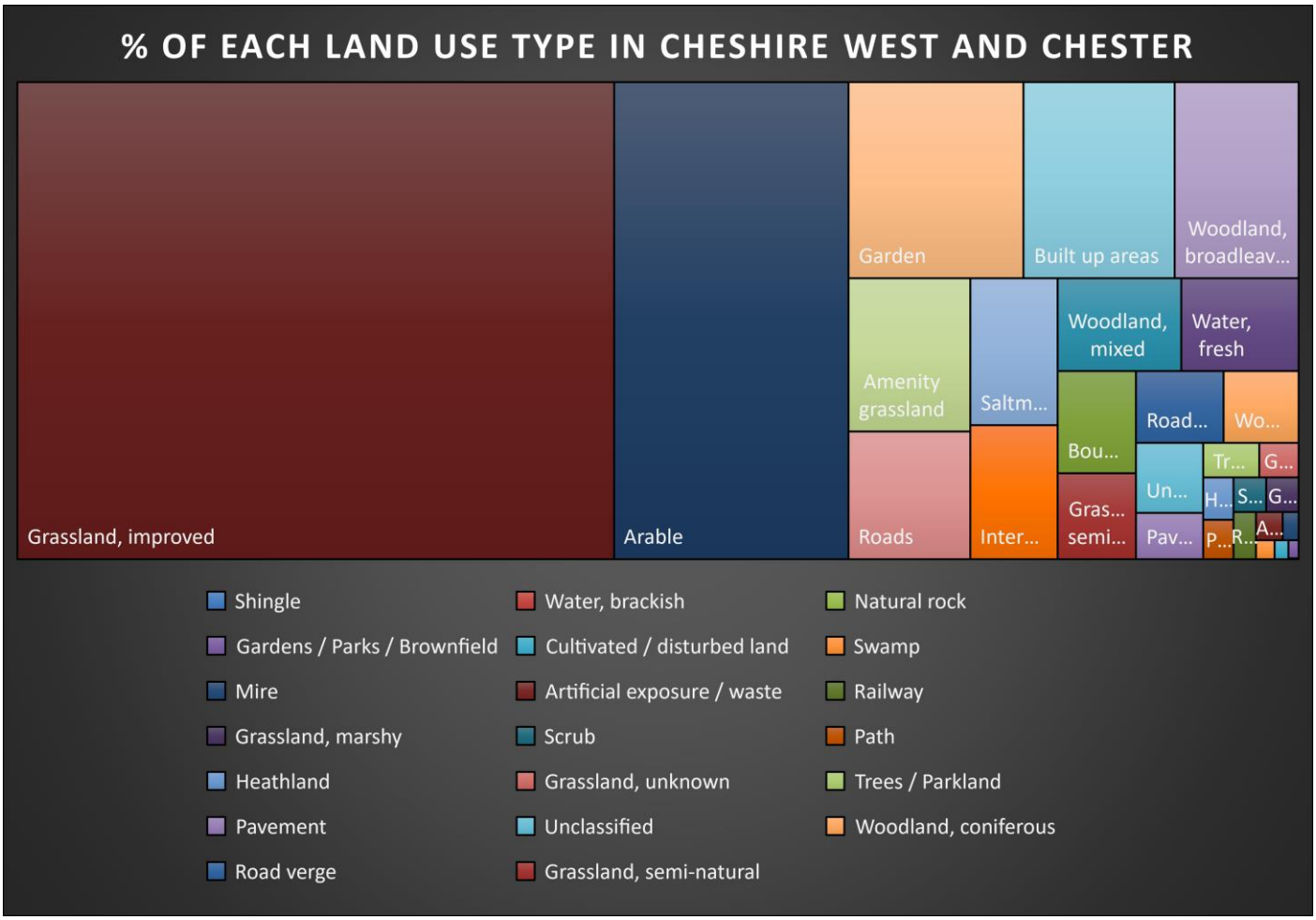


14

[14] Accessible Description: Figure 3: This is a map which describes land use in west Cheshire. It is a map of the borough in which land is categorised by its use, such as improved grassland, arable land, garden, amenity grassland, roads, etc.

We can look in detail at the breakdown of land use types in Cheshire West and Chester below.

Figure 4: [15]



In terms of land types, agriculture and in particular improved grassland is the most abundant land type and from Anthesis' research we know that it is an area for GHG emission reductions to be targeted. Gardens are also one of the top 10 land use types and here individuals can act. Whilst individually these areas are small, cumulative action could provide significant benefits.

The more detailed maps showing where climate mitigation and adaptation services are provided already and where there is a need for these services that are not being provided at the moment will be published in spring 2021.

Green house gas emissions from agriculture and land use (gross) in Cheshire West and Chester are in excess of 340 $ktCO^2e$/annum, approximately 8 per cent of emissions from CW&C area.

[15] Accessible Description, Figure 4: This table describes land use in west Cheshire in a different format to figure 3. It demonstrates that improved grassland is the most common land type. Arable is the second most common land type. Garden is the third most common, followed by built up areas and woodland.

Emissions from livestock are the dominant source of emissions from land use and agriculture, responsible for approximately 92 per cent of gross emissions. Dairy cows are responsible for 55 per cent of gross emissions and non-dairy cows are responsible for 33 per cent. The other 8 per cent is the result of crop and grassland emissions, typically the result of nitrous oxide emissions from fertilisers. The land also acts as a carbon sink, removing approximately 1 per cent of gross emissions from the atmosphere. In Cheshire West and Chester, trees and woodlands across the borough currently absorb c 45% of the emissions from agriculture.

Using Committee on Climate Change forecasts, reducing consumption of beef, dairy and lamb could reduce gross emissions by as much as 37 per cent per year as compared to current gross emissions. Doubling the area of planted forest within the CW&C region could reduce emissions from livestock and land by approximately 25 per cent as compared to current gross emissions.

Emissions from agriculture come from two main sources:

- Livestock production produces 92 per cent of gross emissions. The majority comes from enteric fermentation in dairy cattle.
- Fertiliser applications produce the remaining 8 per cent. The main sources are nitrous oxide from grassland (which has low fertiliser applications but a large total area) and wheat production (which has a high average fertiliser application rate and large area). These will vary each year if crops are rotated.

The table below shows emissions from livestock. These come predominantly from methane emissions by breeding dairy cattle, due to the large feed intake required for producing milk, and the large herd size.

Figure 5: [16]

[16] Accessible Description, Figure 5: This table details emissions from livestock. The largest contributor is dairy cattle, of which there are 40,828 in the borough, they produce 188,377 tons of carbon dioxide in total, at 4.61 tons per head. The second largest category is non dairy cattle, of which there are 58,156 in the borough. They produce 111,637 tons of carbon dioxide, or 1.92 per head. The third largest category is sheep, of which there are 42,444, producing 5,575 tons, or 0.13 per head. The fourth largest category is pigs, of which there are 21,750, producing 8712 tons, or 0.40 per head. The final category is poultry, of which there are 508,024, producing 966 tons, or 0.00 per head.

Livestock type	Number	Total CO_2e, t	Per head CO_2e, t
Dairy Cattle	40,828	188,377	4.61
Non-dairy cattle	58,156	111,637	1.92
Sheep	42,444	5,575	0.13
Pigs	21,750	8,712	0.40
Poultry	508,024	966	0.00
Total	671,202	315,269	0.47

The Sixth Carbon Budget[17], published in December 2020, sets out the UK's path to net zero. It highlights many of the activities contained in this Plan. The report highlights the importance of agricultural and the drivers for land use and land management change that support a drive toward net zero. These actions are supported by the National Farmers' Union policy for net zero farming by 2040[18]. Low carbon farming may include reduction of emissions from the soil through changes to practice (or through management to increase soil carbon), the management of livestock and manure management (including anaerobic digestion – see energy section). Intensification of production and the use of nitrogen fixing grass mixes are identified as further management options to achieve the path to net zero.

Changes in diet, as set out in the Anthesis report, are also the basis for the Sixth Carbon Budget analysis of the path to net zero. (see 8.3 below)

Whilst not a major land type in Cheshire West and Chester, peatland is a major store of carbon. Restoration of peatlands is a priority for government and part of its Nature for Climate programme that is delivering over 600m over the next 4 years. The Natural Capital report will provide up to date information on the extent and location of peatland across the borough.

With anticipated to land use, driven by consumer diet change and wider changes to agricultural practice, there is an opportunity to consider how biomass, short rotation coppice or forestry or growing Miscanthus could be promoted. The Natural Capital Audit will provide a basis for targeting these crops. The opportunity is to link to large scale energy projects such as HyNet, proving a local fuel source as part of the plans for Biomass Energy and Carbon Capture.

[17] https://www.theccc.org.uk/publication/sixth-carbon-budget/
[18] https://www.nfuonline.com/nfu-online/business/regulation/achieving-net-zero-farmings-2040-goal/

Again, Cheshire West has some unique factors, based on geography and current land use that may enable joined up activity across sectors (agricultural, forestry, energy) at scale to provide significant environmental and economic opportunities.

8.3 Dietary Change

The modelled scenarios in the Anthesis report include a reduction in the national consumption of dairy, beef and lamb of 20 per cent (medium) and 50 per cent (high) by 2050. Some of this is replaced by increased consumption of pork and chicken. This is modelled as a 20 per cent or 50 per cent reduction in cattle numbers, and the same reductions in grassland and associated fertiliser applications. Pig and chicken numbers increase by 20 per cent under both ambition levels. Grassland is reduced by about 5,000 and 13,000 hectares respectively in the medium and high scenarios. While more crops will be needed to replace some of the animal products, gains in productivity[19] should mean little additional cropland is needed.

8.4 New woodland planting

In Anthesis' report the equivalent area of grassland freed by dietary change is converted to forestland over the period to 2100. The forest management plan used by the Committee on Climate Change is followed – a mix of native broadleaved and conifer woodlands which are managed to provide some fuel and harvested wood products. The grassland area is planted at a constant rate per year to the year 2100, equivalent to 60 hectares per year (medium) and 150 hectares per year (high). Grassland is assumed to be replaced by woodland to provide a simple scenario for the purposes of these calculations. Planting 12,600 ha of woodland would double the existing area of woodland within the borough.

8.5 Greenhouse gas emissions reductions

The table below shows average annual emissions reductions associated with these scenarios between now and 2100

[19] https://www.theccc.org.uk/wp-content/uploads/2018/11/Land-use-Reducing-emissions-and-preparing-for-climate-change-CCC-2018.pdf

Figure 6: [20]

	CO2e, t net emissions reductions per year		% of current gross emissions[3]	
Scenario	Medium	High	Medium	High
Dietary change (grassland) - change to 2100	-388	-969	-0.1%	-0.3%
Dietary change (livestock) - change by 2050	-49,313	-125,710	-14%	-37%
Dietary change (subtotal)	**-49,701**	**-126,679**	**-14%**	**-37%**
Planting forests on saved land	-37,046	-84,356	-11%	-25%
Total	-86,747	-211,036	-25%	-62%

8.6 Adaptation and Climate Repair:

The Council recognises in its Local Plan that "positive adaptation to climate change will continue to be promoted and communities will be supported in taking positive action towards sustainable living". Adaptation is essential in mitigating the detrimental impacts of Climate Change, such as increased flood risk, sea level rise, increased risk of summer deaths due to higher average temperatures, and many more adverse effects. We will therefore prioritise action that offers adaptation co-benefits alongside mitigation effects, such as nature-based solutions to climate change that also deliver sustainable water management, or the delivery of projects that install green infrastructure in urban locations, to tackle the urban heat island effect and address issues of air quality, while delivering carbon reduction.

8.7 Planning and the Climate Emergency:

Planning is a key element of the Council's ability to influence land use in the borough. The Cheshire West and Chester Scrutiny Committee is currently engaged in a review of the Local Plan to determine whether there are opportunities to strengthen its provisions relating to Climate Change. The Committee will report on the findings of the review in Winter 2020.

8.8 Feedback from the Climate Emergency Taskforce and Climate Advisory Panel:

Taskforce Members were supportive of the Natural Capital Audit approach, and wanted to understand if the audit would help identify other potential schemes (relating to peat lands and

[20] Accessible Description, Figure 6: This table describes Anthesis' modelling of emissions reductions scenarios for land use, land use change and forestry. The interventions are classified as medium or high. The first intervention is changing grassland to woodland. In the medium scenario this is linked to a reduction of 388 tons of carbon dioxide per year. In the high scenario this is linked to a reduction of 969 tons per year. The second intervention is reducing the consumption of beef, dairy and lamb. In the medium scenario this results in a reduction of 49,313 tons per year. In the high scenario this results in a reduction of 125,710 tons per year.

wetlands) in our locality to contribute to this agenda, to what extent can we find more urban solutions to provide tree planting space, and highlighted existing concerns on protecting mature trees during development. It was discussed that the audit would look at a range of different habitats, giving data on the existing carbon balance to inform future decisions on carbon storage and management. Given it is the first time we will have this data it may also provide opportunities to explore a range of new ideas. The Taskforce were supportive of increasing the scale and pace of tree planting in the borough.

8.9 Residents' Recommendations

22 responses provide views on interventions regarding how the borough's environment and green infrastructure should be supported in order to mitigate the effects of, and adapt to, the climate emergency.

The following key themes are present in multiple submissions:

1. Using afforestation to improve air quality, sequester carbon and improve environmental amenity.
2. Tackling engine idling;
3. Support for wildflower planting; but considerations were also raised regarding the biodiversity of the wildflowers that are used.

8.10 Local Action:

1. Support, on average over the 5-year (2020-2025) programme, an aspiration for 150 hectares of new planting a year across the borough, a total of 750ha over the lifetime of the programme.
2. Bid for funding to deploy exemplar nature-based solutions to Climate Change to provide models for wider deployment and incorporation into borough wide plans and strategies.
3. Implement new policies on wildflower verges, enhancing local biodiversity and reducing our cost for green space management.
4. Review the Council's land holdings, including its farm estate, to explore the case for this land to contribute to the Council's goal of becoming carbon neutral by 2030. This may include reviewing opportunities to support low-carbon agricultural practices which reduce emissions and increase carbon sequestration, alongside promoting solutions such as tree planting, wetland management and creation.

5. Develop a strategic approach to maximise the benefits of ‘net gain’ in biodiversity and climate change in new development.
6. We will identify where natural flood management approaches can be used to increase carbon sequestration and deliver improved catchment management. This will be initiated by an opportunity mapping exercise.
7. We will publish a Nature Recovery strategy which sets out how we will promote biodiversity and carbon sequestration through new approaches to Streetscene management and wider work across the borough.
8. Explore opportunities to deliver income generation through Woodland and other land management.
9. We will develop a detailed Land Action Plan that will support delivery of Local Action.

8.11 Working with Partners and Government:

10. Work with the LEP to develop, make available and promote the Natural Capital Audit, Investment and Implementation Plan for Cheshire and Warrington.
11. Assess the opportunity to work with the Local Nature Partnership to develop a co-created, borough wide, Nature Recovery Strategy to complement the Natural Capital Audit and providing a framework for investment, including through Net Gain.
12. Carry out the function of the accountable body, programme managers, funding recipient and distributor for the Trees for Climate national programme, ensuring the effective management of this nationwide programme.
13. Support the ongoing delivery of the Mersey Forest Plan.
14. Assess how we work together to increase carbon capture and store across the whole landscape including wetlands, peatlands, woodland and farmland.

8.12 How residents can play their part:

1. Choose plants that provide pollen and nectar for as long a season as possible, from spring (Crocus and Mahonia for example) through to autumn (Michaelmas daisy, Sedum spectabile and ivy);
2. Grow a mix of trees and shrubs in your garden;
3. Join a local Friends Group or nature conservation charity;
4. Get out and enjoy local greenspaces;
5. If you can, add water to your garden, even a small pond adds significant wildlife value;
6. Compost;

7. Provide food and water to birds all year;
8. Scatter wildflower seeds in your garden, and don't be too tidy, areas of longer grass and decaying wood can be havens for wildlife.
9. Consider reducing your intake of carbon intensive foods such as beef, lamb and dairy.

8.13 Key Performance Indicators: [21]

Ref	Measure	Measure Type	Baseline	2021 Data	2022 Data	2024 Target
M14	Land Use Sector Annual Carbon Emissions – Cheshire West and Chester - (BEIS)	Indirect Influence	First year to be baseline.	38.5 kt CO2 (2019) - Baseline data later adjusted by BEIS and methodology changed.	27.6 kt CO2 (2020)	10 per cent reduction by 2025[22]
M15	Annual tree planting (ha)	Direct Influence	First year to be baseline.	43ha in scope, 400ha being investigated	85ha in scope - 400ha being investigated	60ha/yr on average by 2024, with a stretch target of 150ha/yr on average by 2024
M16	Natural Flood Management	Indirect Influence	First year to be baseline.	50000l	459,814	2,500,000 litres of additional storage

[21] Accessible Description: Land Use, Adaptation and Climate Repair Indicator Table: Measure 14 is Land Use Sector Annual Carbon Emissions, Cheshire West and Chester. This is an indirect measure. The baseline is 340 ktCO_2e. The target by is a 10 per cent reduction by 2025 – prorated, this is 8 per cent by 2024. Measure 15 is Annual tree planting (hectares). This is a direct measure. The baseline is in measurement. The 2024 target is 60 ha/ya by 2024, with a stretch target of 150 hectares on average by 2024. Measure 16 is Natural Flood Management. This is an indirect measure. The baseline is in measurement. The 2024 target is 2,500,000 litres of additional storage capacity in the landscape. Measure 17 is carbon in the landscape. This is an indirect measure. The baseline is in measurement. The 2024 target is a 1 per cent increase.

[22] Additional work with industry experts including Agents, colleges, National Farmers Union, Country Land and Business Association and by Cheshire West and Chester Council to develop specific activity to meet this target. This will be detailed in the Action Plan.

						capacity in the landscape
M17	Carbon in the landscape - updated natural capital assessment of carbon stored in the landscape	Indirect Influence	First year to be baseline.	Assessment methods in development.	Assessment methods in development.	1 per cent increase[23]

8.14 Key Supporting Documents:

- LEP Natural Capital Audit, Investment and Implementation Plan (Due Winter 2020)
- Local Plan
- Biodiversity Strategy
- Cheshire West and Chester Strategic Flood Risk Assessment
- Cheshire West Tree and Woodland Strategy
- Cheshire West and Chester Green Infrastructure Framework
- Mersey Forest Plan

8.15 Community Action Case Study

Mersey forest– tree planting in the borough

The Mersey Forest is a growing network of woodlands and green spaces across North Cheshire and Merseyside. Since it was established, over 25 years ago, the partnership has planted more than 9 million trees. At the time there was a real sense of urgency about the need to tackle the scars on the area's post-industrial landscape. Now looking ahead, there's that same sense of urgency about how more trees can be planted to help tackle the climate crisis.

In the west Cheshire area, more than 2 million trees have been planted over 793 hectares of

[23] This target needs additional assessment to develop the final target in the Action Plan.

woodland - that's the same as 1,111 full-sized football pitches. Trees and learning have been brought to nearly half of the primary schools within the borough, connecting children to nature through tree planting and forest schools.

Sustainable Palm Oil City Chester Campaign

As part of the wider Sustainable Palm Oil Challenge campaign spearheaded by Chester Zoo, the City of Chester was announced as the World's first Sustainable Palm Oil City in March 2019. Palm oil, when produced unsustainably, is linked to many negative environmental impacts including deforestation which is a key contributor to climate change. As a result, Chester Zoo's campaign advocates for certified sustainable palm oil (CSPO) which is grown in a way that protects against deforestation.

Sustainable Palm Oil Cities is an innovative behaviour change programme that aims to increase demand for sustainable palm oil one city at a time. A collaboration of more than 50 organisations in Chester from restaurants, cafes and businesses to schools and manufacturers united to help tackle the crisis. These organisations made changes to the products they use in their food procurement, committing to CSPO. Key success stories include Edsential becoming the world's first CSPO schools catering provider, and Chester University working with its national supplier to commit to CSPO. The success of the project is testament to the community spirit of Chester and shows the need for collaboration and people power in creating a sustainable city model.

8.16 Delivered Actions

- Bid for funding to deploy exemplar nature-based solutions to Climate Change to provide models for wider deployment and incorporation into borough wide plans and strategies.

- Implement new policies on wildflower verges, enhancing local biodiversity and reducing our cost for green space management.

- We will identify where natural flood management approaches can be used to increase carbon sequestration and deliver improved catchment management. This will be initiated by an opportunity mapping exercise.

- Carry out the function of the accountable body, programme managers, funding recipient and distributor for the Trees for Climate national programme, ensuring the effective management of this nationwide programme.

9. Waste and Recycling - Lead Officer – Head of Environmental Services

9.1 Sector Description, Key Targets:

Cheshire West and Chester Council is one of England's leading waste and recycling authorities. The area's high performance does not, however, mean that the challenge to decarbonise waste is any less difficult, as many of the 'easy wins' to achieve higher waste and recycling performance have already been delivered locally, such as the implementation of food waste collections. A 1.2 per cent reduction in household waste has been achieved between 2015 to 2018, alongside a 18.4 per cent reduction in non-household waste during the same period.

- The rate of reduction of household waste collection would need to increase from 0.3 per cent per year to around to around 1.3 per cent per year, in order to achieve the required 8 per cent reduction in household waste by 2025;
- This reduction would need to increase to 25 per cent by 2050. Furthermore, in relation to recycling, currently 58 per cent of waste is recycled, and a 9 per cent increase to achieve 67 per cent by 2025 would be required to be on-track to achieve carbon neutrality by 2050.

The Council is currently undertaking a strategic review of its waste strategy to provide a 10-year plan for the management of household waste and recycling. The outcomes of the Council's waste strategy review will inform the future shape of our waste collection and recycling services and will be available in spring 2021. The strategy will also align with the Government's National Waste Strategy, which sets out how they will preserve material resources by minimising waste, promoting resource efficiency and moving towards a circular economy in England. This, combined with bringing the waste collection service back into local authority control from April 2020 rather than being run through a private company, will create exciting opportunities for change. Cheshire West Recycling is run on cooperative principles where residents, businesses and staff have a greater say in the operation of the service, helping to reduce, reuse and recycle waste.

Sustainable waste management offers significant co benefits – diversion from disposal reduces pressure on the environment linked to landfill, therefore improving soil, water and air quality. It reduces resource extraction, further supporting the natural environment. Businesses can make fuller use of resources, with WRAP describing benefits of up to £1000 per employee via sustainable waste management. Circular economy interventions boost productivity and reduce costs, making businesses more competitive.

9.2 Feedback from the Climate Emergency Taskforce and Residents:

The Climate Emergency Taskforce discussed Cheshire West and Chester Council's Waste Strategy. The Taskforce discussed the issue of food waste and how recycling rates could be improved. It was discussed that this would be considered and included in the Council's renewed Waste Strategy in Spring 2021. Another issue raised was around school recycling and how this could be improved. Members also recommended that communications regarding the importance of home composting was shared with residents. The Taskforce also considered the impact of the Environment Bill on the Waste landscape, benefiting from a presentation from the Waste and Resource Action Programme (WRAP).

Councillors discussed issues around construction waste and what rules or guidance could be put in place for construction firms to factor in recycling and re-purposing before undertaking demolition works. Members also considered packaging standards on plastic. It was discussed that at present, the government approach was to incentivise producers to reduce packaging rather than regulate. The problem is well-recognised in Industry and the UK Plastic Pact is an example of a collaborative approach between businesses, WRAP, non-governmental organisations and Government to work together to tackle this issue.

The COVID-19 pandemic has seen waste collection services affected, including the temporary closing of Household Waste Recycling Centres and the suspension of garden waste collection service. The volumes of household waste collected for disposal has increased significantly during this period due to these changes, and as a result of more people being at home. The overall volumes of household waste and recycling will continue to be monitored to understand the long term impact of COVID-19.

9.3 Residents' Recommendations:

16 responses provide views regarding reducing waste and promoting reuse, repair and recycling. The following key themes are present in multiple submissions:

1. Consideration of the promotion of cloth nappies;
2. The expansion of awareness raising on the impacts of plastic waste, and the adoption of innovative methods of using recycled plastics.

3. Concern regarding the use of incinerators in Waste disposal.
4. Recommendations concerning waste communications, including educating young people on the impacts of waste, promoting a reduction in unnecessary consumption, and conveying the results of recycling, such as the production of energy from waste, and other outputs.

9.4 How the Council will play its part:

9.5 Local Action:

1. End avoidable single-use plastics in the Council's operations, via a range of methods including more sustainable procurement;
2. Work with Cheshire West Recycling to procure the most efficient and environmentally friendly fleet possible, including exploring purchasing electric or hydrogen vehicles;
3. Review opportunities to use de-commissioned landfill sites to provide renewable energy.
4. Explore the creation of a community-led award scheme for sustainable businesses.

9.6 How residents can play their part:

We all need to change our habits and here are some suggestions to help make a difference:

1. Reduce, reuse and recycle: By reducing the amount of waste sent for disposal you can make a massive difference.
2. Reduce your use of single-use plastics,
3. Buy products that use less packaging
4. Reduce your food waste
5. Recycle as much as you can to play your part;
6. Buy local to support local agriculture and reduce transport emissions.

9.7 Key Performance Indicators:[24]

Ref	Measure	Measure Type	Baseline	2021 Data	2022 Data	2024 Target

[24] Accessible description, Waste and Recycling Indicator Table: Measure 18 is Reduction in Household waste. This is a direct measure. The baseline is 182900 tonnes. The 2024 target is a 6.7 per cent decrease. Measure 19 is Household waste sent for reuse, recycling or composting. This is a direct measure. The baseline is 56 per cent. The 2024 target is 65.6 per cent.

M18	Reduction in household waste	Direct Influence	182900 tonnes (2020-21)	182900 tonnes (2020-21)	178,702 tonnes (2021-22)	6.7 per cent decrease
M19	Household waste sent for reuse, recycling or composting	Direct Influence	56%	54.5% (2020-21)	57.6% (2021-22)	65.6 per cent

9.8 Key Supporting Documents:

- Cheshire West and Chester Waste Strategy (Spring 2021)

9.9 Community Action Case Study

School meals produced with sustainable palm oil products

Edsential, a social enterprise that provides west Cheshire and Wirral schools with catering services, became the world's first certified sustainable palm oil catering company in 2019 after being inspired by local school children who were passionate about protecting the natural environment.

The organisation reviewed its whole supply chain in the catering service and started using sustainable palm oil in the five million school meals that they serve each year and were certified by the Roundtable on Sustainable Palm Oil (RSPO).

Edsential has also reduced the use of single-use plastics in its food service and has meat-free Fridays each week in the schools it supplies and offers meat free options on their menus every day.

https://www.cheshirewestandchester.gov.uk/your-council/councillors-and-committees/the-climate-emergency/updates/school-meals-produced-with-sustainable-palm-oil-products.aspx?utm_medium=email&utm_source=govdelivery

10. Next Steps

This report sets out the scale of the challenge faced in Cheshire West and Chester, the actions we plan to take and the performance indicators that will be used to track our progress. This plan is the product of a considerable amount of engagement, and is intended to be the start, rather than the end, of a process of ongoing co-production with Members, staff, residents and other stakeholders to ensure we can deliver on our goals.

The next steps for the ongoing development of the Climate Emergency Response Plan are:

- Further develop the actions within the sectoral plans, prioritising the delivery of those that do not require additional resourcing and seeking to agree funding sources for those that require resource.
- Alignment of the proposals to the Budget process and review in year resourcing reflecting Cabinet's priorities for action.
- Engage with and partners, stakeholders, businesses and residents.

11. Glossary

Carbon neutrality: Carbon Neutrality is a term that is interchangeable with the term ‘net zero carbon’. It refers to carbon dioxide emissions being balanced with carbon reduction (offsetting) measures such as tree planting and carbon capture and storage. It is essential that we minimise the need for carbon reduction measures by reducing our emissions as fully as possible. Typically, it is much more expensive to off-set emissions than it is to reduce them, so our efforts are primarily focused on carbon reduction.

Grandfathering: A grandfathering approach allocates carbon budgets on the basis of recent emissions data. The most recent annual CO_2 emissions for Cheshire West and Chester up to the Paris Agreement as of the time of the Tyndall report’s production (2011-2016) is averaged and compared to averaged data for the whole UK over the same period. The carbon budget (2020-2100) for Cheshire West and Chester is then apportioned based on Cheshire West and Chester’s average proportion of UK CO_2 emissions for the 2011-2016 period. CO_2 emissions in the carbon budget include emissions from fossil combustion within the region and a share of the emissions from national electricity generation (relative to the Cheshire West and Chester area's end-use electricity demand).

Blue Hydrogen: Blue hydrogen is produced from natural gas, with carbon capture and storage technology to capture the resulting CO_2.

Green Hydrogen: Green hydrogen is produced by using renewable electricity to split hydrogen from water molecules.

Enteric Fermentation: A part of the digestive process in ruminant animals such as cattle, sheep and goats. Microbes in the digestive tract decompose and ferment food, producing methane as a by-product.

Passivhaus: Passivhaus (or Passive House) is a voluntary standard for the energy efficiency of a building, which results in low-energy buildings that require little heating and cooling.

Urban Heat Island: An urban or metropolitan area that is significantly warmer than its rural surroundings due to human activities. This can be exacerbated by climate change.

12. Appendix 1: Industrial Emissions:

Industrial Emissions Data

Cheshire West and Chester is home to several economically vital mature manufacturing industries of national significance. These industries are mostly energy intensive, and their direct CO_2 emissions are the reason why the borough has such a large emissions footprint. Large energy intensive industries fall within the EU Emissions Trading Scheme (EU ETS), and so therefore their actual emissions are reported on an annual basis, and allowances for emitting the CO_2 are a traded commodity, with the number of allowances being progressively reduced and hence the cost increasing. The data on actual CO_2 emissions for businesses within the EU ETS is published annually. The average for the last 5 years, up to and including 2019, was 3.5 million tonnes of CO_2 per year from all industrial sites in Cheshire West and Chester registered in EU ETS. These emissions come from 9 large industrial sites in the borough, operated by 7 companies. Whilst the scale of these manufacturing sites mean that these emissions account for by far the majority of industrial emissions in the borough, there are some relatively small additional emissions from smaller businesses which are not included in these figures.

This figure of 3.5 million tonnes per year is substantially higher than the estimate of 2.6 million tonnes of CO_2 per year from industry and commerce together reported in the Anthesis report, or the figure of 2.1 million tonnes of CO_2 per year from industrial processes mentioned in section 5.1 of this report. This is due to the way in which BEIS and SCATTER methodologies re-distribute emissions from large industrial installations throughout the country in their analysis. The EU ETS data is a more accurate figure because it is based on real audited emissions from large industrial sites. This means that the total borough emissions of 4 million tonnes per year of CO_{2e} mentioned in section 2.2 is a likely to be an under-estimate, but remains an important data-point for the purposes of comparison with other local authorities as this is the only regularly published national data-set that tracks local authority carbon emissions.

Whilst this discrepancy makes it challenging to evaluate the borough's emissions, and draw comparisons based on existing nationally published datasets such as the BEIS local authority carbon dioxide emissions statistics, the conclusions are unchanged. Cheshire West and Chester has very high emissions from within the borough, dominated by those from economically vital energy intensive industries. Existing large-scale decarbonisation plans, subject to Government support and including projects such as HyNet, can mitigate those emissions ahead of the borough Net Zero target date of 2045.