UNLOCK
NET ZERO

CITIES, PLACEMAKING, LIVING AND THE NET ZERO CHALLENGE

A PROGRAMME OF WORK SUPPORTED BY

e·on EQUANS MEARS

CONTENTS

FOREWORD

Housing associations, local councils, city planners and developers everywhere play a critical role in creating and regenerating places which enable a sustainable future – places that are healthy, low carbon, full of nature and resilient to climate change, and it is our duty to act decisively. We are all uniquely placed as a collective to work together with citizens to shape our cities in this way. This important report demonstrates how UK cities are taking practical steps to drive this transformation, highlighting the collaborative delivery of low carbon development which creates substantial social value throughout communities.

Our built environment significantly affects both people and the planet. We all know the major carbon impact of material extraction to create new homes and places, and the nature impacts which can come from high levels of urban development. We also know the positive and negative impacts that urban places can have on mental and physical health of people based on how they're designed around people's needs.

We're now seeing many organisations, cities and regions look at the interconnected nature of these issues to deliver great places. Cities leading the way in this area are embedding sustainability into every part of their regeneration efforts in creating zero- carbon homes, maximising biodiversity and access to nature and enhancing community wellbeing. The findings of this report identify the key learnings from the people that are delivering at a local level, to help inspire others that are tasked with delivering sustainable placemaking and regeneration across the country.

Carbon-free cities are not just about meeting emissions targets. They offer a vision for placemaking that addresses fuel poverty, health and economic inequalities.

Through sustainable regeneration, communities benefit from better housing, enhanced public spaces, and stronger social cohesion, while contributing to the UK's carbon reduction goals. Achieving these outcomes requires practical delivery at scale, which depends on collaboration and knowledge-sharing between organisations, cities, and communities. At Clarion, we're collaborating with cities and other organisations across England to deliver these sorts of interconnected environmental and social benefits across our new homes, regeneration projects and the work done to retrofit our existing homes. As the largest housing association, a major home builder, and an investor in people and places, our commitment to net zero goes beyond being just about reducing emissions. We are focusing on delivering new homes and improving existing homes which are energy-efficient, protect residents from fuel poverty and are integrated with nature.

Without a doubt, collaboration is essential to achieving this vision. No single organisation or city can tackle these challenges alone. The insights in this report showcase the actions and initiatives already being implemented across the UK, demonstrating how shared knowledge, local engagement, and innovative thinking are key to accelerating progress. Governments, housing associations, councils, and developers must work together to build sustainable cities that deliver both environmental and social value.

This report serves as both a roadmap and a call to action. It reminds us that creating sustainable, regenerative places are a technical challenge and a collective mission. By embracing collaboration and new approaches, we know we can deliver carbon- free cities that benefit all members of society and nature more widely, ensuring a healthier, more resilient and positive future for generations to come.

Miles Lewis, Director of sustainability, Clarion Housing Group

Miles Lewis

EXECUTIVE SUMMARY

Running a city is complex. Successful placemaking is complex. Regeneration is complex. Addressing the housing crisis is complex. Decarbonising our energy system and economy is complex. We need solutions that work across multiple boundaries, and collective thinking to deliver on all these agendas. We must work together for the benefit of local communities and adopt a holistic approach to these issues.

Climate change is the biggest challenge of our generation, but it also presents opportunities to design and build healthier cities. This can be achieved if the net zero transition is placed at the centre of decision-making at both national and local levels, rather than being treated as a separate, special project. Net zero should drive and catalyse change, making places more attractive, supporting successful regeneration, creating liveable communities, and sharing the economic benefits of a carbon-free future.

Net zero must not be treated as an isolated project. When managing cities, especially those with declared climate emergencies, every decision should be made with consideration for its implications on decarbonisation. We can regenerate through decarbonisation and create an inclusive local economy through focused local investment for local benefit. Delivery naturally happens at a local level. There is no one-size-fits-all solution to achieving net zero—each region requires tailored solutions developed and delivered locally by people with vested interests in the outcomes, as they live and work there.

Connecting these agendas would allow us to make better use of limited budgets for greater mutual benefit. A unified vision should be adopted locally—a carbon-free city that provides economic and social benefits to its residents. It sounds simple on paper, but in practice, it is complex. However, our conversations with cities across the UK show that it is achievable, and we hope this report demonstrates pathways to making it a reality.

We've learned a lot from engaging with cities, local authorities, and stakeholders across the UK, and there is real opportunity for progress. Achieving it requires a mindset shift, moving away from viewing net zero activities as special projects to integrating them into business-as-usual. Meeting national and regional carbon targets requires decision-making through a net zero lens, linking climate action directly to residents' and communities' lives. More than 300 local authorities in the UK have declared a climate emergency, demonstrating a commitment to addressing climate change at the local level. With many setting ambitious targets to become net zero within the next decade, the urgency of action is clear. To meet these public commitments, delay is no longer an option.

By integrating placemaking, regeneration, housing, and net zero, proximity to the challenges makes it easier to design appropriate solutions. While a clear national framework is needed for guidance, local knowledge is crucial for developing and implementing effective solutions.

In the transition to a carbon-free future, Local Area Energy Plans are becoming increasingly important as a way to translate national net zero targets into local actions. These plans are collaborative, data-

driven, and cost- effective, allowing local authorities to prioritise projects based on evidence and stakeholder input, and helping to create realistic pathways for decarbonisation.

The need for a step change in pace is clear: we need to move from talking to action. Not only to begin addressing the significant scale of work required but also to learn from these activities – both what works and what doesn't. Sharing these learnings is crucial for improving future plans and saving costs.

Decarbonising an entire economy and energy system has never been done before; there is no blueprint. Achieving net zero is a shared goal, and we must learn from each other. This is not a competition—true success is when we all achieve zero emissions. Engaging people meaningfully and early in the process is essential, as this is a long-term endeavour that requires maintaining trust and support. Successful transitions and infrastructure projects depend on public trust, which facilitates policy support, participation, investment, adoption of new technologies, and ultimately, behaviour change.

Linking placemaking, regeneration, and community well-being points to the importance of a place-based approach to decarbonisation—a sentiment echoed in our discussions. To succeed, collaboration between the public and private sectors is necessary. The scale of impact required means success depends on active societal participation, underpinned by understanding, belief, trust, and leadership.

None of this is inexpensive, and budgets at the local level are tight. We should instead view this challenge through the lens of optimising resource use across all agendas. When addressing the cost of net zero, we must consider long-term benefits like improved health outcomes, reduced environmental damage, and enhanced economic opportunities, balanced against the upfront costs. This approach can be replicated across other areas for collective benefit.

> **NONE OF THIS IS INEXPENSIVE, AND BUDGETS AT THE LOCAL LEVEL ARE TIGHT. WE SHOULD INSTEAD VIEW THIS CHALLENGE THROUGH THE LENS OF OPTIMISING RESOURCE USE ACROSS ALL AGENDAS.**

There is an opportunity to develop a local 'inclusive economy' through targeted investment that directly benefits local communities and residents.

Demonstrating how communities benefit from these changes is key to engagement. Building more sustainable neighbourhoods can profoundly impact local services and help reduce inequalities.

Given the collective nature of the challenge and the shared benefits, our work points to the need for a place-based approach to transform cities and regions through decarbonisation. By fostering a holistic, evidence-based approach to placemaking, regeneration, community living, and net zero, and centring local knowledge over ideology, we can create healthy cities where people want to live and work.

INTRODUCTION

Andy Cameron-Smith

The approach for this report has focused on examining the net zero agenda and how it aligns with other competing priorities for UK cities. It seeks to understand how the net zero aspiration is integrated into broader local and regional efforts around placemaking and regeneration.

With most UK local authorities having now declared a climate emergency, the report explores how they are starting to address this pressing issue. A climate emergency signifies the need for urgent and large-scale actions to mitigate the growing effects of climate change. This declaration typically comes with a commitment to take immediate, bold measures such as reducing carbon emissions, transitioning to renewable energy, and preparing for climate impacts.

The declaration of a climate emergency is not only symbolic, but it is also intended to spur meaningful policy changes. These may include:

1. Reducing dependence on fossil fuels,
2. Implementing energy efficiency initiatives,
3. Promoting sustainable agriculture and land use,
4. Enhancing climate adaptation strategies, and
5. Supporting global climate efforts like the Paris Agreement.

This project has fostered a range of stimulating conversations. There isn't a single solution, but rather a variety of approaches from which we can all learn. Most solutions are tailored to local needs, including infrastructure and geography, but by observing other strategies, we can refine and adapt our approaches.

UK local authorities face a variety of significant challenges that impact their ability to provide services effectively. Some of the most pressing issues include:

1. Funding Shortages: Local authorities have seen a reduction in government grants and funding over the past decade, leading to a squeeze on public services. Many councils have been forced to make difficult budget decisions, which often affect essential services such as social care, housing, and education. Balancing budgets continues to be difficult.
2. Social Care Pressure: One of the largest challenges for local governments is the growing demand for adult social care. An aging population, combined with increasing needs for support services, is putting immense pressure on local authorities.
3. Housing and Homelessness: The UK faces a housing crisis, with a shortage of affordable homes and increasing rates of homelessness. Local authorities are juggling a number of issues – limited housing stock,

rising rents, and the cost of temporary accommodation. Planning can remain contentious, with many councils facing challenges in balancing development with community concerns.

4. Environmental Responsibilities: In adaptation to climate change, local councils have been tasked with delivering ambitious environmental goals, including reducing carbon emissions and managing waste. Meeting these objectives often requires significant investment in new “green” infrastructure.
5. Public Health: Local authorities are also responsible for delivering many public health services, including initiatives related to mental health, obesity, and substance abuse. The COVID-19 pandemic stretched local resources thin and recovery from the pandemic has presented new challenges as councils strive to manage long-term health impacts while still delivering routine services.
6. Devolution and Governance Issues: There are ongoing debates about the structure of local governance in the UK, with some advocating for more devolution of powers to local authorities to better meet the needs of their communities.
7. Workforce and Staffing Shortages: Local authorities are grappling with recruitment and retention issues. A combination of austerity measures and competition with the private sector has led in some areas to staffing shortages, impacting the delivery of vital services.

These challenges are interconnected, and the strain on local governments continues to grow, making it difficult for authorities to meet the diverse needs of their populations. We have tried within this report to take a balanced approach to understanding these competing issues. We are not pushing solely the decarbonisation angle because we understand this is one of the many challenges that are faced by local authorities. More this is about a collective approach to the issues faced to see if complementary solutions can be applied to complementary agendas.

The transition to net zero is unique because it’s a collective challenge. True success requires that everyone achieves net zero, so collaboration is crucial to deliver results for all. Our report outlines shared learnings from the cities we have engaged with, showcasing insights from across the sector and case studies of net zero initiatives in action.

We hope this report sparks further dialogue and collaboration. Let’s use these shared learnings to create cities that are healthy, productive, and sustainable, without causing harm to the environment.

Andy Cameron-Smith, Editorial director, Unlock Net Zero

METHODOLOGY

Our approach has never been about telling our audience what to do; rather, we focus on listening and engaging with the sector to understand their needs, challenges, and insights. By fostering an open dialogue, we aim to use our platform as a space to share these learnings, facilitating broader conversations across the industry. We believe in the power of collaboration and the value of learning directly from those who are actively involved in shaping the sector.

This philosophy was central to how we developed the content for this report. Throughout the process, we engaged extensively with various stakeholders, including several UK cities and professionals operating across the sector. Our goal was to understand how they approach the key questions we raised, what challenges they face, and how they define their priorities. These insights have been instrumental in shaping the direction of the report, ensuring it reflects the real experiences and needs across the UK.

In addition to these one-on-one discussions, we also organised a series of webinars and panel sessions throughout the year. These events provided a platform for broader discussions on the subject, allowing us to gather diverse perspectives and foster meaningful conversations. The feedback and insights from these sessions further informed the report, ensuring that it resonates with and supports the wider community.

LEARNINGS

PEOPLE AREN'T MAKING THE LINK BETWEEN TAKING POSITIVE ACTION ON CLIMATE CHANGE AND THE POTENTIAL UPLIFT TO THEIR QUALITY OF LIFE, THROUGH WARMER HOMES, LOWER BILLS, CLEANER GREENER STREETS, A REDUCED RISK OF FLOODING, OVERHEATING ALONGSIDE THE CREATION OF MORE JOBS IN THIS GROWING SECTOR.

We have held many conversations as part of this programme of work, but this quote from Rhian Palmer, Strategic lead for Green Futures at Coventry City Council, encompasses the core of the issue.

Although awareness of climate change is widespread, and most local authorities have declared climate emergencies and developed action plans, there still seems to be a gap between the actions being taken or proposed and their actual impact on people's lives.

At a local level councils and authorities are faced with a multitude of challenges and with dwindling funds to deliver upon a long list of priorities.

Here we summarise the key learnings from speaking direct to people tasked with placemaking and regeneration at a local level and how they are integrating with the net zero transition. Each location is different and will need a different solution, but there are general trends we can all learn from.

This is what we want this report to be. A receptacle for progressive thinking that can help others facing similar challenges. There is no one answer. There is no right answer, but there are learnings that can help and inspire others.

TAKING A HOLISTIC APPROACH

We've previously identified placemaking, regeneration, living, and the net zero transition as separate challenges, but our discussions have reinforced that these agendas are inherently linked and complementary. Achieving net zero is not an isolated goal; it is fundamental to successful place-making and city development. The aims, the objectives are interlinked and should be treated as such. Net Zero, like the other issues, are not special projects to be viewed in isolation, instead, they are "business as usual" issues and should be treated as such.
The scale and volume needed to deliver decarbonisation means it needs to fit into broader activities such as regeneration, placemaking, and transport infrastructure. It requires cohesive strategies and innovative funding models at both a local and national level.

Contributors highlighted that the scale of the challenge is immense and that the urgency of the required pace of change is the most pressing issue. This means that delaying action is not an option. Instead embedding net zero and climate adaptation into all projects is crucial to creating a strategic framework that connects these priorities. One council Hull said, that if their activities did not account for their carbon impact or climate risk, then they were failing to deliver better local services.

This means sustainability can no longer be seen as an afterthought. It must become a core consideration in aligning budgets and solutions that support long-term investment and resilience. As many of our contributors highlighted, climate change has the ability to disproportionately affect the most vulnerable, so it is essential to connect this agenda also with social equity.

The ability to embed complementary goals helps to avoid the false choice between climate action and other priorities. As another contributor pointed out, decarbonisation is not only an environmental imperative, but it is also a social one.
This link between action and social value needs to be constantly made but it must be better articulated. This would help to address Rhian's point and help position how we link wider city-based activity with the climate change agenda. It should not be seen as either/or, instead it all needs to be embedded as a key objective.

Infrastructure is crucial to achieving net zero. This is as pertinent at a local level as it is at a national level. It is the fundamental. Without this being right we will only ever be net zero ready rather than net zero in operation. Therefore, this needs to be planned in tandem – transport, buildings, housing, place, regeneration, rewilding – it becomes one and the same at the end.

LOCAL KNOWLEDGE IS VITAL

One thing that came through loud and clear was that you must embrace local knowledge. Nothing beats it. To deliver local solutions it is vital that you clearly understand "what" is needed on the ground This is because the solutions must be designed and implemented locally.

On a subject like climate change, national policy can provide a framework to work within, but each region needs a tailored, integrated approach to gain community buy-in. It is not just acceptance of the involved actions that is important here. The ability to integrate climate change activity into other council activity is intrinsic on building that local understanding.
Writing for us just before the General Election this year, UK100,

the network for local authority leaders said the path to a cleaner, healthier, and more prosperous future is forged at the local level, not dictated from Westminster.

Net Zero is a national target, but it appears from our conversations that it is vitally important that local cities and regions work within defined frameworks to produce plans that resonate and deliver at a local level. Research from UKRI and PwC highlights that a locally-led net zero transition could reduce system costs by over two-thirds and nearly double consumer bill savings. This is evidence that "place-based" carbon reduction measures led by UK cities and towns could produce positive environmental, economic, and social results with a lower cost compared to a national "one size fits all" approach.

There is need for strong, open dialogue between national and local government. Whitehall controls levels of funding and through policy development has the power to unlock net zero potential, but it is local authorities and councils who are better equipped to combat misinformation and unite communities around climate action.

The net zero transition is perhaps the biggest change programme we will go through. An essential ingredient for it to succeed is trust. Access to impartial, trusted, and locally relevant advice is essential to succeed.

We are seeing greater examples of local power through devolution which empowers communities to make decisions that directly benefit them. For example, a housing improvement programme led by local decision-makers could generate multiple benefits from a single intervention. This becomes an example of a national policy – greater devolution – that is then executed at a local level – through housing policies, climate emergency delivery plans etc It was recognised by many that community groups bring to the table invaluable grassroots knowledge, energy, and the ability to highlight issues often overlooked by traditional decision-makers. Being closer to the problem makes it easier to design the appropriate solution.

LOCAL AREA ENERGY PLANNING

A lot of people we spoke to as part of this programme emphasised the importance of Local Area Energy Planning (LAEP) in the work they are doing. A LAEP is described as a process that has the potential to inform, shape, and enable key aspects of the transition to a net zero carbon energy system, at a local level. The plan provides a solid evidence base for action, allowing areas to prioritise projects that are not only cost-effective in delivery but also can deliver multiple benefits for residents beyond just the financial.

Decarbonisation is a complex activity. It is a systems challenge that requires a systems solution. That includes considering every aspect of life in the places that we live, work, and play within. It is why supporters of this approach such as the Energy Systems Catapult advocate for a place-based strategy and solution that integrates sources of decarbonised heat, renewable energy, and low-carbon transport into a cohesive system tailored to the unique needs of each local area. LAEPs are examples of a systems solution and one at a local level with specific objectives and outcomes in mind.

There is no one-size-fits-all path or solution to net zero for every place in the UK. LAEPs use a stakeholder-driven, evidence-based approach to map the optimal route to decarbonise. This becomes important when looking into the other responsibilities authorities and councils have. By building on a shared evidence base, it allows council planners, network operators, businesses, and community groups to align towards a common net zero goal based on evidence and not on ideology.

On this journey it is crucial to consider and capture the carbon impact of every decision, big or small. By doing this we can understand their cumulative effect and pinpoint areas for intervention and improvement. What a LEAP allows is the ability to embed carbon-conscious thinking into the plans for cities and regions.

LOCATION, LOCATION, LOCATION

Regional solutions will naturally vary. This is due to differences in local geographical infrastructure, different requirements for different locations, but there is real value in sharing and learning from others' experiences.

As we have noted devolved agendas are thriving as more and more regional and local governments are recognising that embracing sustainability can be a holistic approach to addressing a range of complex issues. It has multiple benefits not just carbon reduction in isolation. It can help across issues such as tackling inequality, the development of long-term skills, and the creation of well-paid new employment in the areas of the transition.

Devolution deals are agreements between the central government and local authorities to transfer certain powers, responsibilities, and funding to regional bodies. The intention is that this allows local areas to have greater control over policies that directly affect them, such as transportation, housing, skills training, and economic development. The intention is that this allows for more effective governance and better local outcomes.

Key Aspects of Devolution Deals:

1. Powers Transferred: these can vary but often include areas like transport, health and social care, housing, planning, and economic development.
2. Elected Mayors: some deals include the election of a directly elected mayor with executive powers over the devolved region.
3. Combined Authorities: groups of local councils collaborate to exercise devolved powers, often covering larger metropolitan areas or regions.
4. Fiscal Responsibility: devolution deals typically involve agreements on funding and fiscal powers, enabling local authorities to raise and allocate funds for specific projects.
5. Economic Growth and Public Services: the goal is to boost local economic growth, enhance public services, and improve accountability and transparency at a local level.

Some of the notable UK devolution deals include Greater Manchester, the West Midlands, Liverpool City Region, Tees Valley, West Yorkshire, South Yorkshire and North of Tyne who each have directly elected mayors with executive powers. These deals represent various approaches to devolution, with different powers and governance structures tailored to the needs and priorities of each region. More deals continue to be announced with the latest being for Hull and East Yorkshire and Greater Lincolnshire.

These deals represent various approaches to devolution, with different powers and governance structures tailored to the needs and priorities of each region. More deals continue to be announced with the latest being for Hull and East Yorkshire and Greater Lincolnshire.

BOLD LEADERSHIP IS REQUIRED

Any successful change programme requires strong leadership. Leadership that is seen to be listening and responding. Following the devolution pathway, strong local leadership becomes even more important.

A key theme that emerged from our discussions was that leaders need to prioritise outcomes over outputs. It is the measurement of impact across these agendas which is important, not just the volume of work undertaken. A number of people we spoke to highlighted the belief that local councils have a crucial role to play in both setting an example and leading by their own action. From a decarbonisation perspective this includes operating in a low carbon manner as well as setting plans for the region to be low carbon in the future.

The value of leadership local to communities is that it becomes better placed to foster and support innovation and change, with policymakers having a shared and consistent understanding for decarbonisation initiatives across the region.

The more time that can be dedicated to planning, the better the results will be. Across the agendas we focused on, the ability to view sustainability as a core standard helps to not only drive net zero ambitions forward but also other agendas. It was emphasised that plans and decisions should be grounded in robust local evidence and adopt a “positive but realistic” approach to implementation. This is if nothing else a journey that the whole community needs to go through.

Others recognised that failing to act now will only make addressing climate change more challenging and costly in the future. The argument is that by taking proactive measures today especially in designing buildings that are suited to our changing climate and enhancing wider city resilience to climate change this allows you to avoid the need for retrofits and prevent expensive repairs from future flooding and extreme weather.
Once again it reemphasises the need for holistic thinking that does not focus on single individual measures.

LEARN FROM DOING

A key aspect across all agendas, was that we need to stop talking and do. This is particularly important under the net zero agenda as time is ticking on not only the national 2050 target, but also the wide number of regional aspirations and targets put in place through climate emergency plans.

Respondents highlighted that there is a real need to learn from experience and to improve how this knowledge is shared. This is because when it is broken down regions are confronting similar challenges. Here knowledge of understanding what works, and more importantly what does not work becomes invaluable.
What has proven somewhat difficult for many is the move from conceptual strategies to practical implementation in the real world. This some say remains a significant hurdle because of a variety of issues, including funding and availability of qualified skills.

All of this breeds a theme of learning from doing. In the net zero landscape this is particularly important, as decarbonisation has not been done before. Whilst we have a number of potential scenarios and solutions available, it will only be through testing them and analysing the results (in the real world) will we be able to improve and deliver solutions at the scale we need to.
Many people recognised the importance of innovation to ultimately deliver on their objectives. True innovation involves challenging existing norms and taking calculated risks to drive progress and achieve meaningful outcomes. Therefore, it becomes essential to not only undertake but learn from pilot projects and to share this learning far and wide.

A recurring theme when discussing housing was that innovation is needed to ensure that we can build new homes that are future proof from the start. Many acknowledged how it does not make sense to be adding to an existing large housing stock that needs retrofitting with even more properties. This is where the need for long-term visions are required and whilst there will always be short-term challenges that need to be addressed, it should be approached through a lens which has the wider objective in mind.
It was also noted that we should not underestimate the power of successful community projects. These can serve as immensely valuable demonstrators of what can be achieved. It is a valuable engagement tool which can help to inspire residents whilst also showcasing effective ways to reduce their environmental impact. In simpler terms the power of “show and tell” is influential when discussing new concepts, especially when it is built and delivered upon local trust.

EARLY ENGAGEMENT IS KEY

At the heart of all local activity, is the people. All of these agendas are about people. This means that it is essential to engage communities early on and communicate in a way that resonates with everyone. Whatever aspect you are talking to them about, it is important to clearly outline the social, economic, and personal benefits of any change. Any large-scale transformation requires

earning trust and maintaining community support.

When we look towards the net zero agenda, achieving targets will depend on sustained community consent and involvement throughout. Communities need to understand what is happening, why it is happening, how it will happen and what will be the outcome of the activity. All these points need to be addressed in a language and manner they understand and resonates with their lives.

For some, a street-by-street approach is being used to encourage participation and foster local ownership for net zero activity. This is where there is a benefit to engaging with communities through a co-design process that involves residents and businesses, who understand their areas best. Change is a concept that is not always welcomed or understood by everyone. From our conversations it appears important to have people feel they are involved in the process and that it is not something that simply happens to them. This involves listening and responding to resident and community concerns. By involving people in the design and implementation of solutions, it helps to empower them, foster a sense of shared purpose, it can bridge divides, and ultimately can help encourage long-term stewardship of their local environment.

THIS IS NOT A RACE

Our national target for net zero is 2050. Whilst we need to get on and deliver, we also need to understand and communicate that this is about a transition. It does not have to be delivered tomorrow.

We very much welcome bold ambition, but we also need to have realistic plans in place. As we have noted engagement, and acceptance is so important and that will be built on trust. Trust to deliver what cities and local authorities say they are going to deliver.

If we accept the premise that nobody is net zero until everyone is net zero, then we need to avoid viewing this as a race to be first. Instead, focus should be placed on a well-defined, place-based approach to decarbonisation.

It is important that the net zero transition acquires and retains strong cross-party support delivered across a long-term perspective. Over the last few years, the political consensus about climate change has been challenged. It is important that this dialogue is not just focused on economic terms. We need to move on from a good vs bad narrative. To drive positive change net zero needs to be seen as aspirational. To do this we will need to talk "human" and at levels all can understand. This narrative needs to be clear and consistent but most of all we must make it relatable to individuals' lives. So, it is important that we remember as part of this communication, focus is provided on the fact that this is delivered as part of a transition and not as a sprint.
A lot of the activity we discussed as part of this programme is based around the concept and effort involved in preparing projects to be ready for immediate action once funding is secured. This approach allows cities to be in the best position to action rapid, large-scale implementation, which is what will be required.

COLLABORATION IS VITAL

No one organisation, no one government, no one local authority can deliver net zero in isolation. It must be done in partnership. This is the same for any large place-making, regeneration or infrastructure project. Partnerships are needed for delivery, and public / private partnerships need to be developed and fostered. As our editor-at-large on this programme, Sarah Daly says: "Greater market collaboration focused on decarbonisation is essential to making healthier, more liveable cities the norm."

All the cities we spoke to placed a strong emphasis on the importance of local partnership working. With a priority placed on place-based strategies, there was real belief that this approach allows cities to foster local collaboration that has the potential to drive economic growth whilst at the same time reducing emissions. With an emphasis on climate change, partnerships are highlighted to be crucial to develop practical solutions that work and are embraced at a local level.

One city that has placed a real focus on developing strategic partnerships to deliver on their aspirations is Coventry. They have entered into the UK's first strategic energy partnership with E.ON. This 15-year partnership aims to transform energy use in the city and their approach to carbon reduction whilst at the same time seeking to help people save money and provide an economic boost to the local economy. What is important is that each project undertaken as part of the partnership is guided by a social value plan to ensure economic growth, improved outcomes, and reduced inequalities for communities and businesses you can read more about the partnership on page xx.

A clear message from our discussions was that achieving net zero and large city projects requires a collective effort from public and private sectors alike. Success depends on active participation across society and closer collaboration with all levels of government.

COST

This is the elephant in the room.

Cost is a significant challenge in the decarbonisation agenda. Many of the people we spoke to believe that without innovation, financial constraints could limit the speed and scale at which we address climate goals. This is innovation in the design of financial instruments. The assets being funded here have long lifespans and as such the return and value of investment changes in a credit dynamic. Solutions put in place needs to reflect this.
One of the advantages of a combined authority is its ability to develop support models that can be implemented across an entire region, together with the scope to leverage additional

resources and tools to help drive progress across several agendas.

The cost of climate action adds to the growing funding challenge that local authorities face. To be successful in our climate ambitions new financial innovation will be required to fund the scale of delivery we need to meet aspirations at both a local and national level.

The cost of achieving net zero is a critical factor for several reasons:

Economic Impact: The financial implications of transitioning to net zero can be substantial. Understanding these costs helps plan and budget effectively, minimising economic strain and ensuring that resources are allocated efficiently.

Feasibility and Affordability: Assessing the costs helps determine whether net zero targets are realistic and achievable within given financial constraints. It influences policy decisions and investment strategies, ensuring that net zero ambitions are practical and affordable.

Funding and Investment: Identifying and understanding the costs of net zero initiatives is crucial for securing funding and investment. It helps attract private sector investment, allocate public funds wisely, and leverage financial incentives and subsidies.

Cost-Benefit Analysis: Evaluating the costs versus the benefits of net zero measures helps to justify expenditures. It supports the argument that the long-term benefits—such as improved health outcomes, reduced environmental damage, and enhanced economic opportunities—outweigh the upfront costs.

Policy and Strategy Development: Accurate cost assessments inform the development of policies and strategies. They help policymakers design effective regulations and incentives, tailor solutions to different sectors and regions, and prioritise actions based on cost-effectiveness.

Public Support and Buy-In: Transparent cost information is essential for gaining public support. People are more likely to back net zero initiatives when they understand the financial implications and see a clear, justifiable path to achieving sustainability goals.

Risk Management: Understanding the costs helps in managing financial risks associated with the transition. It allows for better planning to mitigate potential economic disruptions and ensures that contingency measures are in place.

Understanding and articulating the cost of net zero is pivotal for planning, budgeting, securing investment, and ensuring the practical feasibility of sustainability goals. It impacts decision-making across locations and sectors and is key to achieving a balanced and effective transition to a low-carbon economy. But we need to be aware that net zero is not the only financial constraint on local authorities. This is where a more holistic approach at a local level can prove beneficial. It is why a number of local authorities we spoke to are employing Local Area Energy Plans, as this provides them with a robust data and evidence platform to make informed climate related decisions from.

COUNT THE BENEFITS

Our conversations threw up a long list of benefits from implementing climate action at a local level. Some economical, some technical, some from a health perspective. What this shows is how a focused approach can produce healthier cities and environments to live and work within with multiple benefits for communities and residents.

A key driver for many cities is the ability to implement strategies that ensure residents have access to job opportunities that are being created by any switch to a net zero economy. It drives a sense of developing a circular economy that helps to retain the benefits of the large investment within the community. By using locally sourced materials and by using local business to deliver there is the ability to strengthen the local economy which in turn provides benefits for local communities.

For many interviewed they saw a truly sustainable city as one that attracts inward investment, helps to retain talent, which in turn enables residents and businesses to thrive.

The power of fostering community spirit was also a popular driver for many. The thinking being that locally focused activity can help to create communities that not only reduce their carbon footprint but also maximise efficiency. This means that the goal is not just simply to cut emissions, but also to empower communities to flourish sustainably at a wider level.

One of our contributors noted that low carbon projects go beyond being infrastructure projects. Delivered correctly they have the ability to enhance aesthetics, promote biodiversity, provide community spaces, instil local pride, and contribute to the overall well-being that defines vibrant neighbourhoods, producing a multitude of benefits from focused action.

ALL ROADS LEAD TO A FOCUS ON PLACE-BASED DECARBONISATION

All of these learnings point to a clear takeaway from the programme, the need to look at decarbonisation not in a series of isolated activities but rather from a place-based perspective. Place-based decarbonisation refers to focused efforts to reduce carbon emissions in a specific geographic location or community, focusing on solutions tailored to the unique characteristics, needs, and resources of that particular area. Taking this approach recognises that different places—whether urban, rural, industrial, or coastal will have different economic structures, energy demands, local resources, and social dynamics, and therefore require localised strategies for achieving net zero emissions. Some key aspects of place-based decarbonisation are:

Local Context: the understanding of the specific energy needs,

economic activities, transportation systems, housing stock, and natural resources of a place to design effective decarbonisation solutions.

Community Engagement: involving local communities and stakeholders in the planning and implementation of decarbonisation efforts ensures that the solutions are inclusive, equitable, and beneficial to residents

Sector-Specific Approaches: different areas may focus on decarbonising particular sectors based on their economic activities

Infrastructure and Technology: local infrastructure availability, such as energy grids, transportation systems, or building stocks, plays a key role

Policy and Governance: local authorities and councils play a critical role in setting policies, allocating resources, and coordinating efforts in light of national or global climate goals and its application at a local level

Resilience and Adaptation: place-based decarbonisation can also include climate adaptation strategies that enhance resilience, such as improving flood defences or designing cities to be more climate-resilient while also reducing emissions.

Employing this approach ensures that decarbonisation strategies are practical, sustainable, and scalable by leveraging the unique strengths and addressing the particular challenges of different regions.

Cities we spoke to have recognised the need to develop new skills and perspectives at a scale and pace that will fundamentally reshape their approach to place-making. By building more sustainable neighbourhoods this can have a profound impact on local services and help to reduce inequalities.

Coventry highlighted a number of areas where they see this is applicable including expanding green spaces to address urban deprivation, improving air quality, reducing flood risks, and enhancing biodiversity. They feel that retrofitting homes not only improves their energy efficiency, making them warmer, but also supports better public health, especially for those with respiratory conditions. And, by creating active transport infrastructure it helps to boost social mobility and provide better access to services, education, and employment opportunities.

Local Area Energy Planning fits into this place-based approach. The Energy Systems Catapult who has pioneered work in this area recognises that we need to accelerate place-based decarbonisation within a national framework. But they point out that it is at the local level where people and communities make decisions that drive us towards net zero, and where organisations, businesses, and democratic institutions can align their actions and investments.

The driver is that a systems approach which is tailored to the unique needs of each area, becomes essential to achieve meaningful results. Results that are delivered at a community level come with multiple benefits. A place-based approach can transform the built environment, economic landscape, and social dynamics creating solutions to meet local needs.

There is no one size fits all solution. It is very much a combination of regional individual solutions that will allow the UK to meet its net zero ambitions. This is why a local approach to practically delivering is so important. Through our conversations we have seen the level of engagement in these issues is strong and there is a move to make net zero a business-as-usual activity not a special project. We are not there yet, but as we have said it is a transition and there are plenty of learnings for us to take as we go. What is important is that these learnings are shared far and wide for others to benefit from.

At the end of the day, we return to the fact that net zero is a collective challenge that requires a collective response.

SUMMARY OF CLIMATE PLEDGES ACROSS THE UK

1. Belfast: 66% reduction by 2025, 80% by 2030 and 100% by 2050

2. Bradford: part of Leeds City Region Climate Coalition pledge to be a net zero carbon region by 2038

3. Cardiff: carbon neutral city by 2030

4. Derby: net zero by 2035

5. Exeter: net zero city by 2030

6. Hull: 2030 carbon neutral strategy

7. Leicester: become a carbon neutral and climate adapted city by 2030 or sooner

8. London: net zero carbon by 2030

9. Newcastle: net zero emissions by 2030

10. Plymouth: council is a net zero organisation by 2030

11. Sheffield: net zero carbon city by 2030

12. Birmingham: "the council and city to become net zero carbon by 2030, or as soon as possible"

13. Bristol: become carbon neutral and climate resillent by 2030

14. Coventry: no defined timeline, but committed to national target of net zero by 2050

15. Edinburgh: net zero climate ready by 2030

16. Glasgow: net zero carbon emissions by 2030

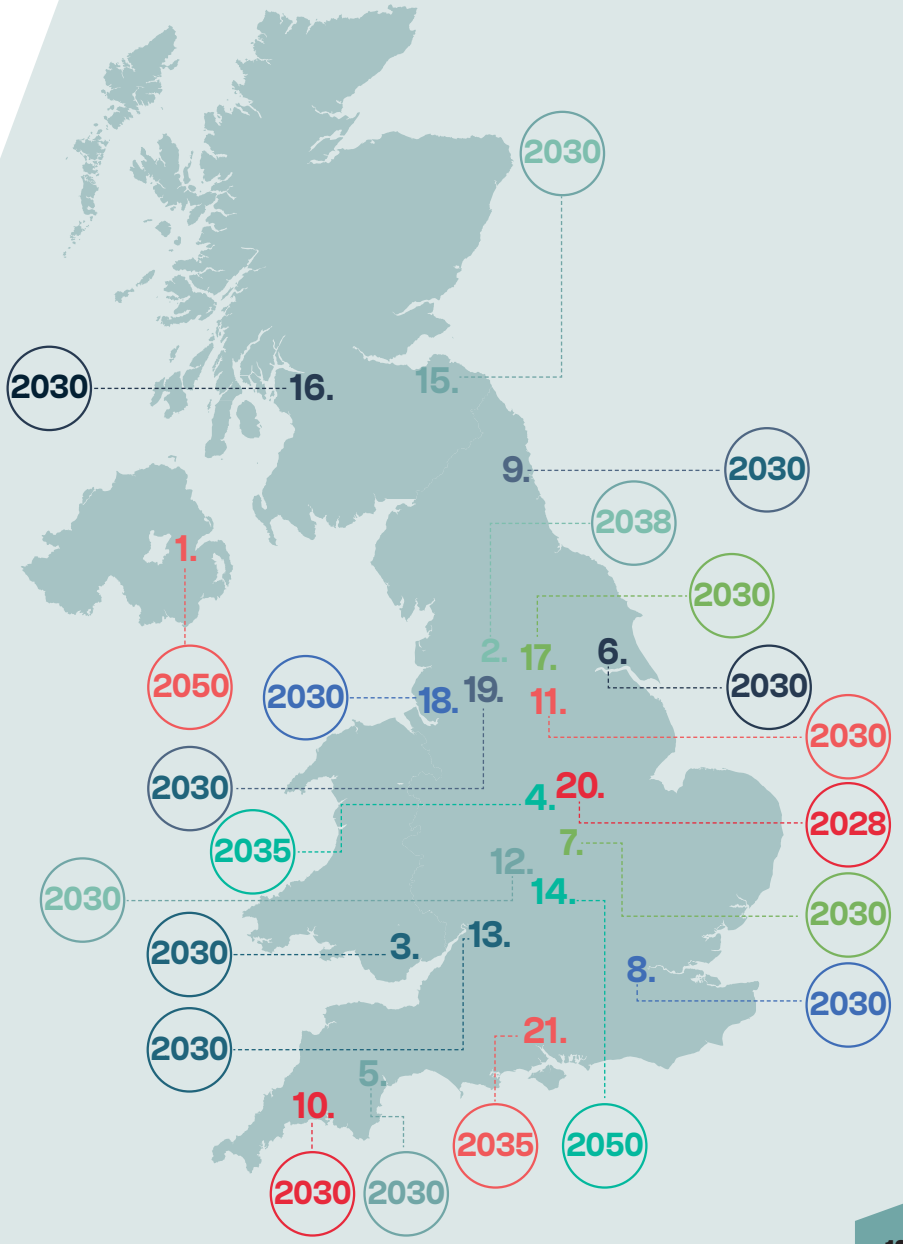
17. Leeds: carbon neutral by 2030

18. Liverpool: net zero carbon city by 2030

19. Manchester: carbon neutral city region by 2038

20. Nottingham: first carbon neutral city in the UK by 2028

21. Southampton: zero carbon city by 2035



PART ONE

CITIES INTERVIEWS

A COLLECTION OF DISCUSSIONS WE HAVE HELD WITH SEVERAL UK CITIES ON HOW THEY ARE LOOKING AT THE AREAS OF DECARBONISATION, PLACEMAKING, AND REGENERATION.

CONTENTS

PART ONE // CITIES INTERVIEWS

A collection of discussions we have held with several UK cities on how they are looking at the areas of decarbonisation, placemaking, and regeneration.

BELFAST

An aerial view of Belfast credit: Belfast City Council

Originally published on Unlock Net Zero – 02.04.24

The Belfast Agenda is a community plan that stretches out the approach of the city and its community partners between 2024-2028.

It boldly states that by 2035 Belfast will be a city re-imagined and resurgent defined by being a great place to live and work for everyone. At the core of this will be an emphasis on how the city tackles the issue of climate change. One of their stated aims by 2035 is to reduce the city's carbon emissions by 80%. In the short-term they hope to reduce them by 66% by 2025.

With five core themes within the agenda (which features partners including Belfast City Council, Belfast Health and Social Care Trust, Housing Executive, the CBI and Queen's University and Ulster University), the city is taking a holistic approach to its ambitions linking its intended actions to cover impact on people and communities, the economy, the evolution of place, respecting the planet whilst making sure Belfast remains a compassionate city.

With regards to addressing the question of climate change the work of Belfast City Council is driven through an ambition to create a sustainable, nature-positive city.

Their action plans have a clear focus on re-naturing the city and increasing resilience to climate change by creating a sustainable circular economy and innovating to meet net zero. This plan is built upon the five foundations of re-naturing the city, leaving no-one behind, building city resilience, greening the economy and sustainable urbanisation.

We sat down with Climate commissioner Debbie Caldwell and Brenda Roddy, Climate change project officer, and lead on retrofit and zero emission transport programmes at Belfast City Council to understand a little more about their work and progress to date towards these aims.

> **WE WILL ALSO USE THE PLAN TO ATTRACT PRIVATE SECTOR FINANCE TO HELP DELIVER THE PROJECTS**

At the centre of their approach is data and building a real detailed understanding of the city, its infrastructure and demographic profile from which to base plans on how to move to a more decarbonised future. This is based upon the production of a Local Area Energy Plan for Belfast. For those unfamiliar with such planning approaches, this is the production of a bottom-up, data-driven, whole-system approach to delivering net zero within a particular location. Whole systems planning means that all parts of the energy system are mapped including supply and demand characteristics, transport, buildings, local industry, and the environment. The aim of such an approach is to identify and outline the most cost-effective way for a local area to decarbonise and to set out an action plan for their implementation.

"Producing the plan has really strengthened our evidence base" explains Debbie, "and as a relatively new team it is important that we have a big focus on data". The plan builds on the city's Carbon

Around half of the city's bus fleet has already been converted to electric, hybrid of hydrogen credit: Belfast City Council

Roadmap developed in 2020 which identified that the majority of the city's scope 1 & 2 emissions are heavily concentrated in the built environment and transport. The roadmap provided science based emission reduction targets which have been formally adopted by the City: 66% reduction by 2025, 80% by 2030 and 100% by 2050.

The Local Area Energy Plan Debbie explains has used detailed modelling of the energy system and engagement of key stakeholders to identify five priority projects to enable the city to decarbonise in a cost effective and impactful manner. The plan provides a robust evidence base for action and the priority projects are selected on the basis of being cost effective as well as creating multiple benefits for residents. "We will also use the plan to attract private sector finance to help deliver the projects" adds Debbie, "and engage the market to help us to design the most appropriate and effective delivery models, based on robust data".

Brenda recognises that whilst the city is still early on its decarbonisation journey, she notes that "the appetite to engage is huge, but we recognise the challenge is how you take that simply beyond talking about change." This insight mirrors a lot of the wider net zero debate. Consistent polling shows that when asked, people recognise the importance of dealing with climate change and they are keen to see action happen, however when it comes closer to committing to personal actions, it becomes harder for people to commit fully.

With her remit on retrofit, Brenda notes the scale of the challenge to retrofit the city's housing stock and the pressure that naturally puts upon the recruitment of labour to deliver it. "We have to recognise

> **THE APPETITE TO ENGAGE IS HUGE, BUT WE RECOGNISE THE CHALLENGE IS HOW YOUR TAKE THAT SIMPLY BEYOND TALKING ABOUT CHANGE**

this is an ageing industry, and it is proving hard to get new people into the sector. There is a natural replacement cycle we are managing and like other local authorities we face similar challenges. In Northern Ireland we have a particular challenge with talent looking also to the UK and the Republic of Ireland for career prospects and opportunities."

It is important that residents and communities remain involved credit: Belfast City Council

The city and its infrastructure, though, are an asset and is a driver for the Council's work. "We are looking to attract more people to live in the city centre. This means increasing connectivity" says Debbie. She recognises this will require investment in further services, but it will be built upon the foundation of Belfast's public transport system which is decarbonising fast. Around half of the city's bus fleet has already been converted to electric, hybrid or hydrogen and the fleet will be net zero by 2050. More than 200 vehicles, including bin lorries and street sweepers, are now being powered by vegetable oil, Belfast City Council has said. This represents almost 50% of the council's heavy goods vehicle fleet. The biggest challenge is to convince people to switch to public transport as Belfast has a long history of high car dependence. This points towards a behaviour change challenge as the council seeks to increase the number of pedestrianisation areas in the city centre and collaborate with other stakeholders to encourage more and more people out of their cars.

What is the impact of these plans, and how will Belfast measure the impact of their interventions?

Brenda notes that the city is "at the start of its social value journey" but they are guided by some clear principles. Firstly, their work will target people across all income levels, and this is where the investment in the Local Area Energy Plan pays dividends. The plan has provided specific socio-economic profiles, which has really assisted in identifying where the council should place its efforts and locate pilot projects. Debbie says that a lot of the work the council has been doing is to get them ready; ready to go when the funding is in place so they can begin to deliver at a scale which has impact on the targets.

Collaboration is a key theme of Brenda's programme of work. Belfast has pulled together a Retrofit Hub which involves a broad range of partners. In designing the hub, it has been a cornerstone of the thinking that local people and especially local contractors do not lose out on retrofit programmes, encouraging the involvement of local firms. This really begins to identify how you can build an effective circular economy at a local level, helping to keep the benefits of the investment in the local economy.

Brenda recognises the importance of "involving people early" in any discussions and programme design, placing a real importance on "face to face engagement" to help deliver on these aspirations. They are also working with the third sector as well in their engagement plans as well as drawing upon the experiences of other cities as well to inform their thinking. Belfast also routinely makes an annual disclosure to the Carbon Disclosure Project (currently rated as a top tier city on the global index) and the UK Climate Emergency Scorecards (ranked currently as the strongest performing council area in Northern Ireland). Belfast is also a member of the Resilient Cities Network, ICLEI and the Core Cities partnership.

> **"BUILD SUPPORT FROM LOCAL COMMUNITIES FOR THE SHIFT TO A MORE SUSTAINABLE AND CIRCULAR ECONOMY**

Belfast has also signed a Statement of Intent to work in partnership with Liverpool, Manchester and Dublin and this openness to learning from others shows a positivity to tackling the issues that the city needs to address if it is to meet the ambition of The Belfast Agenda.

But Debbie does note that it remains important to ensure that residents and communities remain involved and that you work hard to "retain consent" from the community itself to reach the cities broader net zero ambitions. She remains mindful that not just Belfast, but any city should not fall into a "democratic deficit", recognising that you must, to be successful in any transition, "build support from local communities for the shift to a more sustainable and circular economy" and ensure that people from all backgrounds are able to benefit from the transition.

Brenda Roddy, Climate change project officer at Belfast City Council

Originally published on Unlock Net Zero – 02.04.24

BIRMINGHAM

With a stated aim of making Birmingham net zero carbon by 2030 (or as soon as possible), how is it going, and what have been the key learnings to date?

The Council declared a climate emergency in June 2019, and Full Council unanimously made the commitment to take action to reduce the city's carbon emissions, and to do so in a way which reduces inequalities across the city and brings communities with us. The stated ambition is to accelerate the pace of net zero to 2030, however recognising that to achieve this level of acceleration city-wide requires significant system and organisational change beyond areas in the direct control or influence of local government and which will need to balance economic, environmental and social outcomes.

Accelerated ambition sharpens focus and since the 2019 declaration and the Councils formation of a 'Route to Zero Carbon' team in 2022, the Council has made positive progress in its greenhouse gas accounting, leveraging of key policy powers and on the ground delivery but the building of the scale and pace of delivery, and the investment needed to facilitate this, takes time, resource and capabilities that are beyond the scope of local government alone. As a civic leader, a major local employer and service provider to the city and its citizens, we recognise the need to ensure that we are doing all we can to address the dual challenges of greenhouse gas emissions reductions and climate adaptation and resilience, but we can't meet net zero without partnerships, innovation in approach and the buy in of city stakeholders.

Birmingham's territorial emissions include all those emitted within the city's boundary. The Department for Energy Security and Net Zero (DESNZ) publish annual local authority and regional greenhouse gas emissions data on industry, commercial, public sector, domestic, transport, land use, land-use change, and forestry, agriculture and waste activities. These are the most reliable and consistent breakdown of greenhouse gas emissions across the country and show annual emissions from 2005, with the 2024 publication providing data for 2022. We use this to track progress in reducing the city's territorial emissions. Using these nationally derived statistics, the City of Birmingham is realising a level of greenhouse gas emissions reduction in line with UK Core Cities and this will continue to be highly influenced by UK carbon budget policies, most particularly in private vehicle transport, building heat decarbonisation and investment in renewable and low carbon electricity.

The domestic (32%), transport (26%) and industrial (22%) sectors make the greatest contribution to the City of Birmingham's territorial emissions. Whilst the council is not directly responsible for these city emissions (other than those within the scope of its own day to day activities), the council does have the ability to influence change through its place shaping powers and activities. Our most recent activities include:

- A new set of planning policies aimed at accelerating the reduction of embodied and operation greenhouse gas emissions from the built

> **WE CAN'T MEET NET ZERO WITHOUT PARTNERSHIPS, INNOVATION IN APPROACH AND THE BUY IN OF CITY STAKEHOLDERS**

environment. These new policies are expected to commence in 2026.

- Preparation of a heat network strategy to direct the significant opportunity that heat network zoning powers present to the city of Birmingham. 20% or more of existing heat demand could be supported by heat networks, tackling one of the most complex decarbonisation challenges.
- Influencing changes to the way people and goods move around our city using transport as a key enabler. We know that we need to achieve a rapid shift away from single occupancy private car use. The adopted Birmingham Transport Plan sets out the dramatic decrease in vehicle kilometres travelled required to deliver transport decarbonisation in Birmingham and outlines how the city's transport system needs to be transformed to meet the challenges of the next decade.
- A Waste Strategy Review to align the city's future municipal waste responsibilities with net zero ambitions.

Birmingham City Council's direct organisational greenhouse gas impact contributes less than 1% to the city's total greenhouse gas emissions, however in seeking to demonstrate leadership, our Greenhouse Gas Protocol-aligned annual account enables us to identify the council's greatest emissions sources and focus our own decarbonisation efforts. Around 50% of the Council's greenhouse emissions fall under scope 1, arising from the combustion of fossil fuels, primarily gas, in our buildings and diesel in our fleet vehicles, and 50% fall under scope 2, arising from the consumption of electricity by our buildings and the city's streetlights. Our scope 3 emissions are much more difficult to determine because they occur up and down our supply chains, fall outside of our immediate control and are often shared with other parties (e.g. contractors and suppliers). This makes gathering consistent data on these activities much more challenging, and we are currently unable to provide accurate figures for all our scope 3 emissions. We are taking steps to improve our data and have used the GHG Protocol Corporate Value Chain (Scope 3) Standard to screen and estimate the potential scale of these emissions. The scope of activities that fall within the Council's scope 3 emissions is significant and we estimate our scope 3 impact to be significantly greater than our scope 1&2. This is partly due to the size of Birmingham's administrative boundary and asset base, but also reflects the scope of role of a Metropolitan District Council. For Birmingham City Council, our scope 3 emissions are dominated by three activities: procurement of goods and services (the products and services we purchase to deliver our services); council housing (which we use to provide homes for our citizens); and the energy from waste plant (which we use to manage our citizens' / city's waste).

Key learnings to date:
Net Zero is a term encompassing a vast range of activities and sectors. It can appear an overwhelming challenge without clear focus, so it is essential to structure the challenge by baselining where you are and identifying priorities. This will be influenced by your level of direct control, scope of role or powers as a local authority (or business) and timeframe for influence.

In local government, structing the net zero challenge is an immensely complex undertaking and different tiers of local government have different scopes and roles. Undertaking an annual GHG Protocol-aligned account of Birmingham City Council's emissions has been a key early step in our Route to Zero Carbon journey, but the effort required to collate information held in multiple parts of the organisation, and captured in different ways, was no small undertaking. Year 2 has been easier and as we improve data gathering and automation, expect to be able to build into business as usual reporting.

Whilst local government has a wide-ranging scope of powers and influence, these powers are driven by different objectives and UK policy directives so areas of clear alignment with Net Zero need to be established and embedded early into options assessments. We are working collaboratively across various teams but the timing of opportunities to influence do not always align or take multiple years to realise change – these timeframes need to be mapped.

How fundamental is the decarbonisation of the heat supply to delivering your net zero aspirations and wider regeneration activity across the city?

Heat decarbonisation is one of the most critical but difficult challenges we face in achieving Net Zero. We need to fundamentally change how we

> IT IS ESSENTIAL TO STRUCTURE THE CHALLENGE BY BASELINING WHERE YOU ARE AND IDENTIFYING PRIORITIES

heat our buildings – the heat source, the input fuel, the type of system but also these changes require a major investment in infrastructure, a whole building approach that considers the optimum package of measures to ensure affordability, and will also require supply chain investment in new skills and capabilities. It is a system change challenge of awesome complexity. With limited policy direction to date on the level of energy performance expected of our existing built environment, there remains a key focus on core energy infrastructure and grants to support the switch from gas fired heating to heat pumps e.g. Public Sector Decarbonisation Scheme. Whilst essential, demand reduction and demand management play key roles in ensuring the switch to an electrified heating future is suitable and affordable for each building in its local context. The energy hierarchy remains a key tenet.

In the domestic sphere we also recognise that improving our energy inefficient homes not only contributes to emissions reduction but can reduce cost of living, lead to improved health outcomes, provide employment opportunities and even facilitate place-making and community cohesion. To tackle the complexities of decarbonisation and maximise the benefits to households, in the domestic sphere the Council is taking a very targeted approach.

Homes across Birmingham are responsible for over 35% of the city's greenhouse gas emissions largely due to the use of natural gas for space and hot water heating. Over two thirds have an Energy Performance Certificate (EPC) of D or below. This means that over 300,000 homes will require investment just to meet the minimum recognised standard of energy performance targeted by government-supported schemes like Warm Homes: Social Housing Fund, Warm Homes Local Grant and Energy Company Obligation (ECO) 4.

Across Birmingham, government data suggests that 23% of the population live in fuel poverty *1 . In some wards, independent analysis suggests this could be up to 50% **2 . This can be significantly reduced through appropriate home retrofit. The council is committed to scaling up retrofit. This can already be seen in our ambitious Social Housing Decarbonisation Fund Wave 2 which is well progressed. The programme is ensuring over 2,000 council owned homes receive a package of retrofit measures before September 2026. This includes 300 homes which are receiving multiple measures under a Whole House Retrofit approach. Building on this we are appointing a cohort of retrofit delivery partners who will secure funding through the Energy Company Obligations (ECO) programme and invest across all tenures of housing in targeted areas of Birmingham. This privately-funded investment, expected to be in the region of £60m per year, is provided via the large energy companies and aims to support the most vulnerable families living in the most inefficient homes. Working with our new ECO partners, the Council will take a strategic and evidence-based approach to retrofitting at least 3,000 homes per year over the next 5 years. This is expected to reduce fuel bills in the region of £1.2m per year and save 3000 3 tonnes of carbon dioxide equivalent emissions annually.

In scaling up our retrofit programme we are developing a place-based approach to retrofit which builds on our learning from delivering a successful Local Authority Delivery Scheme (LADs) programme. This place-based approach prioritises areas of greatest social need as well as the areas containing the greater numbers of energy inefficient homes. It will enable collaborative working with other social housing providers and an offer for all tenures, avoiding the fragmentation of delivery that can lead to poor value for money. It also allows the Council to consider the impact and opportunities retrofit presents to energy system decarbonisation, using the Local Area Energy Planning+ (LAEP+) tool to test the impact of renewable energy generation and heat pump installation on local systems. This LAEP+ tool has recently been provided as part of an Ofgem-funded project led by the West Midlands Combined Authority, and alongside the assessment undertaken on Heat Network Zones as part of the DESNZ Advanced Zoning Pilot, allows us to assess the deliverability of community retrofit schemes and identify areas of opportunity for community-based energy infrastructure.

HOMES ACROSS BIRMINGHAM ARE RESPONSIBLE FOR OVER 35% OF THE CITY'S GREENHOUSE GAS EMISSIONS LARGELY DUE TO THE USE OF NATURAL GAS FOR SPACE AND HOT WATER HEATING.

***1** [Withdrawn] Fuel poverty detailed tables 2023 (2022 data) - GOV.UK (www.gov.uk)
****2** Constituency fuel poverty statistics - End Fuel Poverty Coalition
3 Assumes conservative 0.8tonnes of carbon per property retrofitted

What infrastructure challenges do you need to address for decarbonising heat across the city?

We ultimately need a blueprint that demonstrates the most viable decarbonisation pathway for each community or area of the city. This will provide clarity for those living, building and investing within each community but also provide a basis on which to plan and time energy system investment and identify opportunities for community-based energy investment. We have been working with DESNZ over the past 18 months to assess the opportunity for heat network zoning; regulation that will enable locations where heat networks present the most cost-effective route to decarbonise heat for buildings to be designated as 'heat network zones'. Within these zones, certain types of building or those with a specified heat usage threshold will be mandated to connect to a heat network developed by an appointed delivery partner. The scale of opportunity for heat network zones in Birmingham is significant: an estimated 20% of the city's current heat demand could be supported by heat networks utilising existing renewable and waste heat available within the City's boundary. Whilst this presents an exciting opportunity for heat decarbonisation, realising this scale of infrastructure investment will take decades and require significant coordination. As we work to develop a Heat Network Strategy for Birmingham, the locations, timing and route to market of potential zones will need careful planning as will the resources and capabilities required to fulfil the proposed local government Zone Coordinator function. Whilst we anticipate that heat network zones will reduce the scale of demand for electrical capacity in a local area and thereby reduce grid investment, the pace at which a heat network zone can grow may itself be constrained by local grid capacity.

Work undertaken as part of the Advanced Zoning Programme identifies the total heat supply and demand within proposed heat network zones in Birmingham. This work has created a high-level masterplan for delivery and one of the most notable findings is the significant difference between the heat demand within a zone and heat supply available, with some zones having a heat surplus and some having a deficit. This presents a challenge to delivering zonal scale heat networks in the city as heat network zoning policy consulted on to date does not anticipate interaction between zones. To ensure valuable heat resources are maximised and the full scope of heat decarbonisation via heat network zones can be realised, this critical interplay between areas of the city must be accounted for and managed at the local level. In most non-heat network zone areas of the city, heat decarbonisation for most buildings is likely to involve the electrification of heat via individual building-level heat pumps, but as previously discussed, heat system change requires a whole building approach that considers the role of energy demand reduction, demand management, efficiency and generation and storage to ensure suitable and affordable options are selected. This is rarely a one size fits all approach as space, building orientation, neighbourhood characteristics and local grid capacity need to be considered and can limit options available.

This is where we see the role of place-based decarbonisation that consider the needs and opportunities within a local geography and seek to align investments and funded initiatives together being key. Spatial energy planning is therefore a crucial component of a city-wide heat decarbonisation blueprint as buildings, transport and industry will all place increased demands upon the electricity network. Local government coordination with the proposed new Regional Energy Strategic Plan (RESP) function of Ofgem will be critical to ensuring the right infrastructure is available to support the right demands in the right locations and at the right time. The DESNZ funded Local Net Zero Accelerator is one such example of a place-based approach. It aims to gather evidence which can be used to develop investment ready business cases for patient capital and impact investors. The focus is greenhouse gas emissions reduction through housing retrofit, but the project also seeks to identify non-housing interventions that support delivery of a neighbourhood net zero plan and decarbonise 'place'. Castle Vale, a housing estate in the eastern area of the city has been selected as a focus area for Birmingham due to its representative building types and therefore potential to transfer learning to other areas of the city, but also due to its potential to support a community energy cooperative and align with transport, natural environment and wider social and economic activities.

> **TO ENSURE VALUABLE HEAT RESOURCES ARE MAXIMISED AND THE FULL SCOPE OF HEAT DECARBONISATION VIA HEAT NETWORK ZONES CAN BE REALISED, THIS CRITICAL INTERPLAY BETWEEN AREAS OF THE CITY MUST BE ACCOUNTED FOR AND MANAGED AT THE LOCAL LEVEL.**

How do you measure the social value impact of your work across the city?

We have learnt that by working in targeted communities we are able to develop relationships with community groups, community leaders and local champions to better engage citizens and energy consumers. The council has a critical role to play in the promotion and delivery of Net Zero programmes but local, respected community organisations are far better equipped to raise awareness and build trust with people in their community. This collaborative approach leads to far higher levels of take-up of grant-funded initiatives and reduced drop-out rates. In the case of housing retrofit, it is important that we recognise that these projects involve working within people's homes. Time is needed to engage, inform and generate real buy-in which only comes when we focus on the benefits to the household rather than the required outcomes of the funding programme. We must start from a position of understanding people's challenges, drivers and concerns and we have found that the best way to do this is to engage early through trusted organisations.

There are organisations across Birmingham delivering change at a neighbourhood level. Organisations such as Civic Square in Ladywood, MECC Trust in Balsall Heath, Retrofit Balsall Heath and Acocks Greener are working with local households to take a more community-led and neighbourhood based approach to decarbonising energy and homes. These organisations and several others across the City have developed invaluable knowledge in the retrofit space and worked with the Council to help drive interest for funded programmes. Through our retrofit scale up programme we hope to further support these organisations in community-led engagement and upskilling other organisations thus growing capacity and capability across the city. The scaling up of retrofit delivery across the city is a great example of how far-reaching social value impacts can be realised if programmes of work are properly planned and coordinated. The Council is currently developing a Housing Decarbonisation Route Map which will establish timescales and the number of homes we need to retrofit to meet Net Zero: as a conservative estimate we believe this to be around 10,000 homes per year for the next 25 years. This scale of retrofit need has the potential to create a retrofit market in Birmingham of at least £180m per year (based on 10,000 homes being retrofitted annually at a conservative cost of £18k per property). The council is keen to see the majority of this investment remaining in the city and benefitting the businesses and people of Birmingham and therefore opportunities for community-led investment, and new local skills and jobs in the retrofit market is a key priority. To this end, we are working closely with our schools, colleges, universities and local businesses to develop careers pathways into retrofit, energy and heat. Stage 1 of this work, supported by DESNZ, has seen materials developed for school curriculums as well as retrofit training equipment being installed in our colleges. Birmingham is the youngest city in Europe with 40% of the population being under 25. Unfortunately, right now, 1 in 5 of our young people are unemployed. By developing these careers pathways, providing training and apprenticeship opportunities and demonstrating the potential of being involved in a retrofit career we aim to tackle this challenge.

The Council has also commenced a programme of capacity building within our local SME community. If we are to achieve the levels of home retrofits required per year needed to meet Net Zero, building capacity within our construction SMEs is critical. At present, retrofit is often seen as risky due to the years of funding peaks and troughs, and scheme failures. The accreditation process can also be seen as a burden and overly challenging for small businesses who must focus on installations to maintain business viability. By developing a committed Route Map and incrementally building delivery demand over the coming years, we aim to establish a long-term pipeline of opportunity and a network of support allowing local SMEs to get involved.

CARDIFF

Originally published on Unlock Net Zero – 09.02.24

Navigating the path to net zero: Cardiff's journey and lessons learned. Cardiff has a difficult past and present relationship with climate change.

The city's docks once exported more coal than anywhere in the world, fuelling the industrial revolution with high carbon coal. And now, as a coastal city at the foot of several valleys we face very real flood risks.

So, whether it is from heart or head, Cardiff needs to act with urgency.

In 2019 we put forward an ambitious vision to make Cardiff a carbon neutral council by 2030, with a pathway to becoming a net-zero city. Pursuing this ambitious target has brought focus, united people and organisations across the public, private and third sectors, and helped emphasise the urgency of addressing climate change. While challenges and uncertainties remain, the progress made so far is testament to the power of setting bold goals.

With more than 50,000 new trees planted, council tenants living in new low-carbon and Passivhaus standard council homes, new segregated cycle lanes and sustainable drainage systems spreading across the city, a new 9MW solar farm delivered and construction of a low carbon district heat network well underway, it is easy to point to visible successes.

But probably the most important work has been behind the scenes, developing a full understanding of all our emissions – a remarkable 78% of which come from our procurement chain – as well as a better understanding of what levers we have to influence the whole city's emissions.

> **PURSUING THIS AMBITIOUS TARGET HAS BROUGHT FOCUS, UNITED PEOPLE AND ORGANISATIONS ACROSS THE PUBLIC, PRIVATE AND THIRD SECTORS**

We've also done some cost calculations, and here's where we hit a problem. Like most other large local authorities, we own and manage a large and diverse range of buildings – the most obvious being our 130 schools. The sheer scale of the work required to minimise their carbon emissions, and the challenge of financing it, is monumental. However, our improved understanding of what is required organisationally, technologically and from our wider supply chain to achieve our ambitions will be vital in helping us to communicate the challenges to our partners, communities, and potential financiers.

In a period marked by the need to take tough budgetary decisions, increasing demand for council services, and the need to provide residents with the new jobs and homes they require, finding the right balance between competing priorities is a formidable task but the development of our replacement Local Development Plan, which will published later this year, has enabled us to review the strategic policy context and provide a clear vision for a healthier, more liveable, sustainable and low-carbon city. The work already in progress

Cllr Caro Wild is the Cabinet member for climate change at Cardiff Council

to improve public transport and active travel networks, develop our low-carbon heat network, improve flood defences and green our city, mean the physical building blocks are in place and now we can look to further accelerate this activity – including further developing our understanding of energy needs in the local area so we can get a shared picture of demand, challenges and opportunities – and begin integrating this key infrastructure seamlessly into the city as it grows and develops, and ensuring that future generations can continue to thrive in Cardiff as its climate changes.

Clearly though, not all of the myriad decisions we take can be the lowest carbon option. What we can do is ensure that the carbon implications of every decision, big or small, are considered and captured, so we can understand their cumulative impact and identify areas for improvement. To support this, we're investing in Carbon Literacy training for elected councillors and officers at all levels of the organisation. At the same time, we are also working with the Innovate UK Net Zero living programme to develop a strategic governance and performance framework which incorporate carbon in decision making. Ultimately our ambition is to embed thinking about carbon implications in the organisations' DNA. We've been clear from the start that we can't achieve our carbon neutral ambitions alone. We need to bring people with us and support them to make changes to how they live, work and move around the city. Taking a principled approach to engagement and communications and harnessing behavioural science

ULTIMATELY OUR AMBITION IS TO EMBED THINKING ABOUT CARBON IMPLICATIONS IN THE ORGANISATIONS' DNA

is key to this, which is why we're adhering to principles and guidelines developed by Welsh Government and Cardiff University's Centre for Climate Change and Social Transformations to ensure that our engagement is inclusive, transparent, and community driven.

Cardiff's young people are proof that there is much reason for optimism that behaviour change can and will happen. We're at the start of our journey to build climate change into the curriculum through our One Planet Cardiff schools pledge, but it's already clear that pupils are being inspired by their schools, hoovering up information and taking action. Ensuring that the learners of today embrace the responsibility of caring for the planet, and view sustainability as the norm can be the driving force behind our net-zero ambitions.

Responding to climate change is a generational challenge and the issues we have faced on our journey so far underscore the complexity of what we are trying to achieve. Yet there is an emerging pathway to net-zero. Cardiff remains committed to navigating that path and fuelled by the collective efforts of its people and partners, and optimistic that we will emerge in sustainable and more resilient future.

Cllr Caro Wild is Cabinet member for climate change at Cardiff Council.

One of the segregated cycleways in the city

COVENTRY

Originally published on Unlock Net Zero – 27.03.24

Coventry is doing things slightly differently when it comes to decarbonising the city. Like other cities they have bold ambitions, but they are thinking in a different way on how to achieve them.

One that sees the creation of a number of strategic partnerships with academia and the private sector to make a real positive impact in the communities across the city, to build a local narrative and deliver the city's first net zero neighbourhood to "green" the city.

It starts with not having a defined timeline target for Coventry to reach net zero, although the wider West Midlands has a stated objective of reaching this by 2041. "We have deliberately not set a climate target, as actions speak louder than words" explains Coventry City Council's Director of innovation Colin Knight. "You are always judged by what you do, so we like to focus on the practical."

The city has launched a draft Climate Change Strategy which sets out their aims. "We have three corporate priorities as a Council and tackling the consequences of climate change is one of them" explains Mr Knight. "Alongside these the other core areas are jobs and growth and equalities which have a clear and obvious link to the climate change agenda. There are consequences for all, and we know that climate change has the potential to hit the poorest most. So, it is about how we link this all together to interlink with the climate change agenda."

The strategy has been consulted upon and work continues to update the strategy and develop a robust action plan to sit alongside it.

Rhian Palmer, Strategic lead for the Council on Green Futures observes that the key areas for the city in terms of emissions are domestic heating and transport. "We are doing a huge amount around the decarbonisation of our transport system, but domestic heating is far harder to tackle. We have 105,000 households with an energy performance certificate poorer than a 'C'. 75% of our households fall into the able to pay bracket, but our data shows that less than 5% of them can actually afford to invest in retrofit measures."

> **THE KEY AREAS FOR THE CITY IN TERMS OF EMISSIONS ARE DOMESTIC HEATING AND TRANSPORT**

The Coundon Cycleway in Coventry

She highlights a sometimes-overlooked challenge which is part of the net zero transition – the question of behaviour change and recognises that this is an area where they have to look to do things a little bit differently. "Even for households that might be eligible for a grant to assist with retrofit, not everyone wants the disruption of work done to their home and can be suspicious of free money and contractors. This is a big barrier to delivery that needs to be understood at a neighbourhood level as everywhere is different. We are trying different methods to tackle this, through engagement, events, communications, marketing, social media, and the development of net zero neighbourhoods. We are looking at this on a street-by-street approach to encourage participation."

Originally published on Unlock Net Zero – 02.04.24

Another way of doing things differently is to enter into strategic partnerships. This includes their Strategic Energy Partnership with E.ON. A first for the UK, the joint venture will see the two parties collaborating on changing energy use in the city for the benefit of local people . Based upon long-term and sustainable infrastructure planning the partnership will look into innovative energy generation and security, sustainable transport and the decarbonisation of buildings and homes. At the heart of the partnership sits social value, to address the needs of the city and provide real place-based benefits that are meaningful, appropriate, and proportionate. Each project the partnership undertakes will have a social value plan to ensure that local residents, communities, and businesses benefit through increased economic prosperity, improved outcomes and the breaking down of inequalities.

To oversee activity the council has established an Independent Climate Change Board for the city which contains senior level representation from key public, private and voluntary organisations.

Rhian highlights some of the challenges still to be overcome on the question of engagement in the transition. “There are still people in our city that don’t perceive climate change to be an issue. This highlights that people aren’t making the link between taking positive action on climate change and the potential uplift to their quality of life, through warmer homes, lower bills, cleaner greener streets, a reduced risk of flooding, overheating alongside the creation of more jobs in this growing sector.”

> **WE WILL ALSO USE THE PLAN TO ATTRACT PRIVATE SECTOR FINANCE TO HELP DELIVER THE PROJECTS**

However, as Colin notes, recent weather patterns are making people sit up and take notice. “The floods in January were the most severe we have seen on a city-wide basis. It has started to focus minds, as people now see such activity becoming more commonplace.”

This means more thought is being put into adaptive and mitigation policies. The city has just commissioned an adaptation and resilience study and is aware that over 10,000 homes are at risk of flooding. As Rhian explains:

Coventry is the UK’s first all electric bus city

“This exercise will develop a detailed climate risk vulnerability assessment and action plans. We already have a SUDs policy and are working on the Climate Change Local Plan review evidence base to support the case for homes being designed for heating and cooling, to allow us to try and go beyond the proposed Future Homes Standard. We also know that 90% of or current buildings and infrastructure will still be in use in 2050 so we need a sharp focus on adapting existing environments too.”

The council obviously must balance its many obligations alongside the move to a low carbon future. “It needs to be embedded as a key objective within everything we do” explains Rhian. “It doesn’t need to be either/or. It is always a challenge when it comes to viability, however we are striving to strengthen our planning policies as more sustainable development doesn’t need to come at a higher

Originally published on Unlock Net Zero – 27.03.24

Rhian Palmer, Strategic lead, Green Futures at Coventry City Council

Colin Knight, Director of innovation, Coventry City Council

cost. Ultimately, we want homes to be built for purpose now, not having to be retrofitted in five years' time. Innovation is key to this."

"Creating more sustainable neighbourhoods contributes significantly towards improving local services and tackling inequalities. This ranges from the creation of more green space to address green deprivation in the city, creating cleaner air, reducing flood risk and increasing biodiversity. Retrofit will improve the fabric of homes, creating warmer homes which supports improved public health, particularly for people with respiratory problems. The creation of active transport infrastructure supports social mobility and provides better access to services, education, and jobs."

So how are they going to bring the residents of Coventry with them on this journey?

"We are really lucky in Coventry to have such strong political support and backing. Members have real ambition and vision and this means we are leading on a wide range of really exciting projects. But, we have to take communities with us too, not have them feel we are doing things to them" explains Rhian. This means employing a wide and varied engagement plan as there are a number of different groups to reach all who will have their preferred methods of engagement.

> **"THE POWER OF PARTNERSHIPS IS A CORE THEME THROUGHOUT THEIR WORK.**

"We want to do engagement with communities that involves co-design with the residents and businesses that know their communities best."

Both Colin and Rhian also accept that with the current economic environment there is a need to be "creative and innovative" in their approach. This is why the power of partnerships is a core theme throughout their work. "Partnerships are very important" explains Colin. "To drive decarbonisation, we need to harness the power of public, private partnerships."

"We are taking a proactive approach but there is also an element of working with what you have. We need an holistic 'One Coventry' approach. We are passionate about transforming our new developments, helping to create an attractive green city where all neighbourhoods are places people want to live. A truly sustainable city, we believe, will help attract inward investment, retain our graduates and enable citizens and businesses to thrive.

Certainly bold in their ambitions there is a real enthusiasm to create impactful positive change in Coventry, building on the strengths of the city and its local economic heritage to place them at the forefront of the net zero transition and a blueprint for others to follow.

Originally published on Unlock Net Zero – 27.03.24

DERBY

Originally published on Unlock Net Zero – 03.05.24

Given the pressures faced by many councils, the pursuit of net zero targets has become more critical than ever. This urgency requires council leaders and officers to work in partnership to address key challenges and discover viable solutions.

Here in Derby, we are rethinking how we plan the city and meet the diverse needs of our residents. Since becoming the Cabinet member responsible for climate change, transport and sustainability last May, I've focussed on keeping the aims of our manifesto at the heart of my aspirations and actions.

Our vision is multi-faceted, underpinned by environmental, economic, and societal sustainability. At its core is our ambitious mission to curb greenhouse gas emissions and achieve net-zero carbon status by 2035.

Well before Derby City Council declared a Climate Emergency in 2019, we were focussed on climate change action, in part because of Derby's position by the River Derwent.

Derby has always experienced flooding. While the river was once its strength, using its power to drive silk production in England's first factory, the Derwent has also been Derby's threat.

Flood alleviation is a key element of protecting people, properties and infrastructure and Derby's approach is recognised as being unique in that we are unlocking opportunities for regeneration alongside flood alleviation.

Following public consultation, we adopted the Environment Agency-led Our City, Our River Masterplan in July 2012 and planning for the first phase of the project was received in October 2015.

> **HERE IN DERBY, WE ARE RETHINKING HOW WE PLAN THE CITY AND MEET THE DIVERSE NEEDS OF OUR RESIDENTS.**

The award-winning scheme has already transformed miles of land along the river, bringing new business opportunities, improved resilience, and enhanced biodiversity. In all, around 2,000 properties have benefitted from increased flood protection.

The scheme proved its worth in 2019 and again during Storm Babet in 2023, when the river reached its highest level. Topping out at 3.58m, the previous record from 8 November 2019 was broken. In all, the three highest river levels in the centre of Derby since recording began 89 years ago have happened in the past five years. With major flood events becoming more frequent, Derby is actively future-proofing to cope with the effects of climate change.

Flood defences in operation in Derby City Centre

The next stage of our OCOR scheme will improve resilience along the east bank of the Derwent as it goes through the city centre.

Equally, when the time came to refurbish our Council House in 2012, we took advantage of the building's location on the riverbank to achieve the highest possible environmental sustainability rating. Features such as adiabatic cooling, rainwater

harvesting, solar panels and hydroelectric power harnessed from the river itself earned the Council House an “A+” Energy Performance Certificate and a BREEAM classification of “Excellent”.

Our first Climate Change Action Plan, approved by Cabinet in June 2022, comprised a staggering 106 actions and projects, largely focussed on what the Council can do regarding its own emissions. The Action Plan is overseen by a Programme Board spanning the whole Council, with progress monitored and reported quarterly.

We have started on our goal of weaving climate impact into Council business by introducing a Climate Change Impact Assessment (CCIA). This is an Excel-based tool that generates an infographic showing a simple visual key to the main climate costs and benefits of any given proposal.

By using this tool, we can include climate change as a mandatory consideration whenever we make decisions. It means that net zero is beginning to be embedded across the whole of the Council and is not the responsibility of one department or budget line.
Derby is a compact city with a growing population. Our Derby City Local Plan (DCLP) plans for more new homes and jobs up to 2028. New developments will contribute towards our carbon emissions, so we’re taking action to make our developments carbon neutral as soon as we possibly can.

At the end of 2023, Derby Homes (our Arm’s Length Management Organisation that manages housing) finished building the first carbon-negative council properties in Derby.

> **AS A LOCAL AUTHORITY WE NEED TO LEAD FROM THE FRONT, SETTING A GOOD EXAMPLE FOR OTHERS TO FOLLOW**

The four, two-bedroom homes generate more energy than they consume across a year making them even better than net zero.

The aspiration is, where possible, for all future Derby Homes and Derby City Council development projects to be built to this specification.

We’re investing in existing stock too by improving insulation in some of our coldest properties, and installing solar panels on roofs, which is ever more important in the current cost of living crisis.

Carbon negative council properties in Derby

We have learnt a lot over the last two years and we’re keenly aware that tackling the climate change challenge requires collective effort.

As a local authority we need to lead from the front, setting a good example for others to follow, while recognising that we haven’t the remit, expertise or resources to resolve the problem on our own. The revised Climate Change Action Plan we’re now working on will include actions to help organisations and residents across the city to play their part in tackling climate change.

I have also invited diverse stakeholders across the city to collaborate as a strategic Derby Sustainability Partnership Board, fulfilling a second manifesto promise. So much more can be achieved when ideas are exchanged, innovations discussed, and information shared.

Major city employers, such as Rolls-Royce, Toyota, Severn Trent, along with the University of Derby,

Originally published on Unlock Net Zero – 03.05.24

Cllr Carmel Swan

the Environment Agency, and the Derby Climate Coalition are working with us, so we can gain a deeper understanding and a coordinated plan of how to achieve our targets.

In addition, we host a Community Climate Forum, in partnership with Derby Climate Coalition enabling an open dialogue of ideas and proposals, shining a light on good practice projects from other parts of the UK. I often come away with an idea or a concept and task officers to explore the possibilities for Derby.

For colleagues at the Council, we have created a Climate Change Employee Network. It aims to harness the passion of our staff in working towards our net zero and, through them, reach more of our business community and residents.

Our partnership with the University of Derby has yielded several noteworthy projects. These include national research aimed at bolstering the resilience of care facilities to extreme weather events, work-based opportunities for students pursuing a BSc in Environmental Sustainability (with a focus on housing retrofit and adaptation planning) and identifying training needs for local businesses in the emerging green economy. Research tells us that Derby emissions are marginally above the Centre for Cities 60-city UK average, and below the national (urban and non-urban areas) UK average, with road travel being the largest contributor to transport emissions. Petrol and diesel cars emit the most (about 60% of all transport emissions) – a share that has remained stable since the early 1990s.

> **AS EVER, PARTNERSHIP WORKING IS KEY TO FACING THE CHALLENGES OF CLIMATE CHANGE AND FINDING WORKABLE SOLUTIONS AT A LOCAL LEVEL**

Derby needs to move away from its high car-dependency to lower-carbon travel mode alternatives and this is an area we are working on with partners.

We have developed a well-defined electric car charging infrastructure plan and over the following years, we will see these investments shape our communities and their ability to access car share clubs.

Demand responsive transport (DRT) is an exciting addition to our growing transport network, offering citizens in areas less connected by public transport greater and more flexible transport choices.

We have chosen to pilot DRT in the south of the city to offer citizens a way of making continuous journeys to locations which are otherwise harder to get to, such as the Royal Derby Hospital.

We want to do more to improve our transport network while developing our cycle and walking infrastructure, but short-term funding from Central Government often prevents us from achieving our longer-term plans.

As ever, partnership working is key to facing the challenges of climate change and finding workable solutions at a local level.

Cllr Carmel Swan is Cabinet member for climate change, transport and sustainability at Derby City Council.

Originally published on Unlock Net Zero – 03.05.24

EDINBURGH

The climate crisis isn't going away. Temperatures are rising and the clock is ticking. A lack of action now will only make it harder and more costly to deal with its consequences in years to come.

In Edinburgh, we remain determined to play our part in the global fight to tackle the twin climate and nature emergencies. And with a series of national and international awards as well as other accolades recognising our action on climate – most recently being named the world's most sustainable travel destination and featured on the Carbon Disclosure Project's Global A list – we're at the forefront of driving the change we need to make real and lasting difference.

Last year we were recognised as the top local authority in Scotland based on scoring by Climate Emergency UK for our action to tackle climate change and our most recent updates on the Climate Strategy and City-Wide Emissions report demonstrates the progress we are making towards our ambitious targets.

Delivering a net zero city is one of three core pillars in the Council business plan alongside ending poverty and creating good places to live and work. We aim to embed climate considerations through all council activities. Climate action should not come at the expense of other priorities or vice versa. Instead, we are learning how to ensure co-benefits to address our key priorities simultaneously.

While we pursue urgent mitigation action to drive down emissions and curb climate change, we are also actively working on adaptation to ensure our city is resilient and ready for the climate change impacts coming our way. This includes action on flood prevention and minimising impact from overheating. We have a new Climate Ready Edinburgh draft plan out for consultation, are developing a Blue Green Network across the city, surpassed our annual tree planting target last year in our aim to be

THE FUTURE GROWTH OF OUR CITY MUST MEET OUR AMBITIONS TO BE A CLIMATE READY CITY

a one million tree city and have a sustainable urban drainage system (Suds) partnership to reduce future flood risks whilst protecting our natural environment and supporting nature.

Our Council Emission Reduction Plan focusing on how the Council itself can reduce emissions. The Council is responsible for 3% of the city's emissions and we are continuing to prioritise decarbonising our estate and fleet as our highest emissions sectors, whilst continuing to embed climate change in all we do throughout the Council, including awareness raising through employee climate training to ensure climate change is a key focus across all services.

Cammy Day, Leader of Edinburgh Council.

The draft City Plan 2030 seeks to drive changes in all areas for climate positive, nature adaptive action. It will ensure new development is both net zero and resilient to the changing climate and help nature recover. The future growth of our city must meet our ambitions to be a climate ready city where new homes are built to the highest emissions quality standards in resilient, connected neighbourhoods, in the right locations, with the right infrastructure.

As part of our regeneration of places we are aiming to deliver new green spaces, cleaner air, increase biodiversity and reduce flood risk. We are building adaptation into our infrastructure planning by managing rainfall and improving drainage through better designed street and park landscapes. Edinburgh's Green

Blue Network will help to reduce flooding risks, high temperatures and wildlife loss while protecting places for nature to live. The built environment remains our biggest challenge and decarbonising both the domestic and non-domestic buildings across the city is a key focus in Edinburgh, whilst also balancing out the investment need to tackle our current housing emergency, where demand continues to significantly outstrip supply. We have also recently developed a new Local Heat and Energy Efficient Strategy (LHEES) for the city to inform our transition away from fossil fuels and we are continuing to ensure that homes being delivered through the Council's own housebuilding programme are net zero ready, including the £1.3 billion net zero housing development in Granton as part of the Granton Waterfront regeneration. This will include 3,500 net zero carbon homes and boast Europe's largest naturalised flood defence coastal park. We are retrofitting our social housing stock with the aim of reducing emissions and energy bills, and between 2022 and 2023 1,299 homes were retrofitted to improve energy efficiency and support our key ambition of tackling fuel poverty. We are committed to continuously improving our housing and will continue to deliver on an ambitious retrofit programme over the coming years.

Currently 1,112 homes across 12 high rise blocks are in design to enable a deep holistic whole block retrofit and wider upgrades across these blocks. This significant investment will help to reduce energy demand across these blocks by over 50%, reducing tenants energy costs and ensuring these blocks are net zero ready. These upgrades will also implement climate adaptation and resilience interventions to limit the impacts of climate change, improve biodiversity and the overall quality of the wider estate these blocks are situated in. We also have a number of programmes of work underway on low rise tenements across the city to deliver improvements to council homes. These improvements include a range of options from carrying out essential repairs and maintenance up to the full refurbishment of a home with modern insulation, heating and ventilation. All of which will deliver healthier and more energy efficient homes.

> **CURRENTLY 1,112 HOMES ACROSS 12 HIGH RISE BLOCKS ARE IN DESIGN TO ENABLE A DEEP HOLISTIC WHOLE BLOCK RETROFIT**

The council's net zero work programmes

Transport is a key priority for the city to ensure we create a thriving well connected place to work, live and visit so in 2023, we opened our new tram line to Newhaven, expanded and introduced more cycle routes, and purchased electric buses. Our City Mobility Plan and Circulation Plan include citywide action centred on public transport, active travel, air quality and road safety. For our part, we're continuing to improve our own council fleet and 30% of our vehicles will be upgraded to electric by the end of 2024. We are committed to delivering truly sustainable, safe and integrated mobility for Edinburgh over the next 10 years.

Our 20-minute neighbourhoods will deliver on all three of the Council priorities by creating places where everyone can meet most of their daily needs within a short walk or wheel from their home.

We aim to make inclusive places with better access to essential local

services and open spaces. Tackling the climate emergency cannot be done by the council alone, so working with partners we established The Net Zero Edinburgh Leadership Board. The board brings together partners including the Council, the NHS, Edinburgh universities, Edinburgh Chamber of Commerce and utility companies and provides citywide leadership in creating a green, clean and sustainable future for the city.

TAKING ACTION ON CLIMATE CHANGE NOW WILL AVOID THE NEED FOR MORE ACTION

Tackling climate change is an incredibly challenging task which will only get harder as public funding decreases and costs to deliver key programmes particularly around our buildings continues to rise.

However, we remain committed to doing everything in our power to accelerate climate action. Inflation has caused a substantial rise in the cost of materials which impacts the scale and rate at which projects can be completed within existing budgets. This is affecting planned and future developments, including retrofit programmes and transport infrastructure. Nevertheless, our commitment to net zero remains strong especially as the cost of inaction is significantly higher.

Taking action on climate change now will avoid the need for more action down the line – building buildings that are fit for our changing climate means we won't have to retrofit them again in five years. Increasing the resilience of our city avoids costly maintenance and repairs from future flooding and extreme weather events.

One unique challenge is that Edinburgh is an historic heritage city making it a great place to live and visit but can, on the flip-side, create unique challenges for retrofitting and adaption for climate change. The Council works in partnership with Edinburgh World Heritage and Historic Environment Scotland on protecting and enhancing the World Heritage Site and historic buildings in the city. In 2023, we launched a Conservation and Adaptation consultation on the challenges residents in the World Heritage Site and conservation areas face to adapting their homes to climate change and the cost-of-living crisis.

Overall, the actions within the Climate Strategy have co-benefits for reducing poverty and inequalities in Edinburgh. This includes tackling transport poverty by improving affordable, sustainable transport options in the city. Actions that address the carbon emissions of social and Council housing through a fabric-first retrofit approach will also contribute to lower heating and energy costs for these tenants. These households are amongst the city's residents most at risk of fuel poverty. Development of higher quality green spaces and improved air quality can also contribute to health improvements for residents.

We're at the forefront of driving the change to tackle the climate emergency but know that the pace and scale of action still needs to increase significantly. But we can't do this alone. Public – and private – bodies have a huge role to play in delivering net zero. Our success depends upon collective effort and participation across society, and closer working with all levels of Government both north and south of the border.

GREATER MANCHESTER

Originally published on Unlock Net Zero – 10.05.24

A long-term view, decisions made locally, solving a number of complementary challenges – the role of a Combined Authority in building growth in the regions.

Andrew McIntosh, Director of place at the Greater Manchester Combined Authority recognises that, as an authority, they have set themselves some tough and ambitious climate change targets.

But as he reflects in conversation with us, this is in part because of the scale of change involved and how they want to use this agenda as a platform to help build the region and its infrastructure towards sustainable growth.

"We are seeing declining carbon emissions across the region, but we want to go faster" he acknowledges whilst recognising that cost is a challenge when looking at the decarbonisation agenda accepting that, without innovation, costs could have a constraining effect on the speed and scale of tackling the climate change agenda.

Their approach to helping the region achieve its climate objective, of being carbon neutral by 2038 is through working in a collegiate way across the 10 boroughs in Greater Manchester. He acknowledges that because of each local council having their "own priorities", projects across the region are moving at slightly different paces. However, the benefit of the Combined Authority driving the climate change agenda is that they can help "build support models that can be layered across the region and that the Combined Authority has access to tools that help make this happen." Additionally, the Authority also has the ability to help shape and drive the collaborative approach.

Andrew explains his role as one that is all about "developing places, growing places and regenerating

> **THE NET ZERO AGENDA HELPS TO TIE THESE STRANDS OF ACTIVITY TOGETHER**

places." He believes that these agendas are complementary and should be viewed as such. The net zero agenda helps to tie these strands of activity together particularly through the design of the relevant solutions to decarbonise at scale. With competing priorities "funding is a challenge, and the question we have to answer is how we can explore the development of models that helps us to build future net zero homes. With a concerted focus on place we can embed a collaborative local approach which will ultimately allow us to grow but also emit lower emissions."

Greater Manchester has developed its own Local Area Energy Plan

He believes a key benefit and advantage for the Greater Manchester region is the newly agreed devolution deal. The certainty of funding he believes will help his department to undertake a longer-term programme of developments covering the need for additional affordable housing, the need to regenerate places and ultimately lower the emissions of the region. He sees a real benefit in the ability to make funding decisions closer to the source of requirement, helping to develop a real partnership approach with local agencies. "Working under a local banner helps us to be collegiate and pragmatic. A longer-term view also helps us to

Originally published on Unlock Net Zero – 10.05.24

manage projects more effectively, allowing us to ultimately reduce costs in the long-term."

This localised approach helps to frame the challenges in a more collective way for the region as a whole, rather than as a competition between locations. "Devolution helps to enable people to make decisions that benefit communities directly."

He acknowledges that we could tackle challenges such as damp and mould and retrofit by addressing them not in isolation, but as collective issues and challenges. One housing improvement programme he believes would allow local decision makers to drive multiple benefits from their intervention and investment.

As a region he feels they have benefited from the investment they have made into developing a Local Area Energy Plan for Greater Manchester. A local area energy plan is a data-driven whole energy system, evidence-based approach collaboratively defined by local stakeholders with the aim of identifying local action to reach Greater Manchester's targets and contribute towards the country's net zero target. It helps to identify the infrastructure changes required to transition an area's energy system to net zero in a given timeframe.

"For us it has been really helpful undertaking this exercise. It has helped to quantify and articulate the investment levels needed to deliver

> **DEVOLUTION HELPS TO ENABLE PEOPLE TO MAKE DECISIONS THAT BENEFIT COMMUNITIES DIRECTLY**

net zero and identify measures that should be implemented. The question is now one of how do you then implement the recommended measures.

"It provides us with a framework to consider and is a great example of bottom-up planning, helping us to drive the designed solutions required. We are presently using it to explore delivery models and asset classes and it provides us with an evidence base with which to speak with investors as the funding of the end solution has to be through both public and private means."

Andrew believes the challenge now is "how we capitalise" on this evidence base and use it to "start conversations which will help turn plans into reality."

But it is the long-term he returns to. Noting that net zero is a longer-term challenge, as is the regeneration of place, he believes that net zero should be one of the top considerations of the planning hierarchy and help in the drive to build for growth concluding that the "longer you have to plan the better the end outcome."

Net zero and the regeneration of place is a long-term challenge

Originally published on Unlock Net Zero – 10.05.24

HULL

Originally published on Unlock Net Zero – 29.05.24

"Decarbonisation is a significant challenge that has to be addressed across all sectors and partners in the city"

We spoke with Hull City Council about their ambition to be a carbon neutral city by 2030.

With your approach as a city to decarbonisation – how is it going and what have been the key learnings to date?

As a city our decarbonisation journey has a long tail. At least since the early 1990s, we have been developing and delivering housing regeneration schemes that have addressed the thermal performance of homes in both the public and private sector to reduce fuel poverty and drive the wider co-benefits in aspiration, health and educational attainment. We have been part of innovative approaches, such as Housing Action Trust's, Housing Market Renewal Gateways and Single Regeneration Budgets. As decarbonisation has become a greater driving force, we continue to develop and deliver housing fabric schemes and deliver pilot zero carbon heating solutions. Across the city, we are at the heart of the energy transition, being home to the Siemens Gamesa offshore wind manufacturing site which employs 1,400 people and delivers turbines for the UK and overseas market. We are also home to one of the UK's largest heating companies, Ideal, which has established a national training centre for air source heat pumps (ASHP) and manufactures them within the city. These opportunities have enabled the city to develop new approaches to ensuring local people can gain jobs in the net zero economy transition. The provision of multiples waves of training bootcamps through Hull Training and Adult Education has maximised the opportunity for local people to secure employment. The University of Hull is also very active in the energy space, with

> **WE HAVE DEVELOPED THE OH YES! NET ZERO PROJECT TO SUPPORT THE SME SECTOR THROUGH MUTUAL SUPPORT AND LEARNING**

Masters in Flood Management and Renewables key feature of its curriculum. The city is addressing longstanding national gender inequality within manufacturing and engineering through programmes such as Women into Manufacturing Engineering. However, as a city, we recognise that the heart of the economy is the SME sector and, through a partnership established by Reckitt, the council, Future Humber and University of Hull, we have developed the Oh Yes! Net Zero project to support the SME sector through mutual support and learning. This focuses on business to business support to help companies understand their carbon emissions and how they can reduce them, engaging local supply chains to increase skills to make them more competitive and put them in a position to meet customer demands whether that is organisations they supply or direct to consumers. In our endeavours to retrofit and future proof our homes, we have been successful in taking advantage of government funding in its various forms including Local Authority Delivery and Social Housing Decarbonisation Fund, as well as via funds such as the Energy Company Obligation. Early engagement with residents has been key in order for them to fully understand and reap the benefits of decarbonising their homes.

The council's local plan is being revised to embed climate change to a greater extent

Has anything in the scale of work required surprised you (both good and bad)?

Reaching net zero and adapting to climate risk is a significant challenge. The scale is immense, but it is the pace of change required that is the most challenging. As a city, we have only 20 years to

become net zero and 15 years to be a net zero organisation, which means the next 10 years are fundamental to the long-term success. The change cannot be left until the last minute. It is the change in how we embed the carbon impact and risk costs that is requiring different ways of thinking about solutions, our whole notion of what business as usual emphasises the scale of change. The surprise is really in how quickly we need to develop new skills and ways of seeing at a scale and pace that will change fundamentally our understanding of place making. It is not so much a surprise, but needing to understand what a fair transition looks like and how in the scale of work we deliver it alongside our communities, residents or businesses.

Net zero and decarbonisation is one challenge, but how do you balance the scale of what needs to happen under this agenda with other activity such as building new affordable homes, the regeneration of places, updating your transport infrastructure and the ongoing pressure to deliver improved local services?

The agenda is not incompatible with our thinking. Embedding net zero and adaptation within all other projects is essential to delivering this agenda. If we do not do this, then we are adding expensive retrofit costs to projects in only a few years' time. Embedding climate change within programmes ensures the best use of the investment we make, and others make in the city. We do not see these as "either/or" choices. If the other activities do not consider how they contribute to carbon emissions or understand the climate risk they will experience over their life and build mitigation into them, then we are not delivering improved local services. When considering new housing and the regeneration of places, sustainability is at the forefront of what we do, especially with regards to sustainable heating solutions, Biodiversity Net Gain on site etc. No longer is sustainability a

> **NO LONGER IS SUSTAINABILITY A BOLT ON, RETROSPECTIVE CONSIDERATION, BUT AN INCORPORATED CONSIDERATION**

bolt on, retrospective consideration, but an incorporated consideration upfront to ensure good quality design and sustainable homes and communities are achieved. In the journey to net zero and decarbonisation, we also need to be mindful that we do not push residents further in to fuel poverty and look at solutions which benefit both the environment and our more vulnerable residents.

Addressing the climate and nature emergency is one of the council's five ambitions in their community and corporate plan

In planning for the city's future, how much consideration is having to be made now to adaptation and mitigation for climate related impacts?

Dane Park, a new housing scheme addressing the climate and nature emergency is one of the five ambitions in our Community Plan and Corporate Plan. Therefore, mitigation and adaptation are at the heart of our approach to the city's future. From a climate risk perspective, Hull is the second most vulnerable city in the UK after London to flooding. Our response to the flooding in the city in 2007 was the creation of a globally leading partnership "Living with Water", which led to Hull being established as one of the first Global Water Resilient Cities. This brings together Hull City Council and East Riding of Yorkshire Council (ERYC), Environment Agency (EA) and Yorkshire Water, which has resulted in significant infrastructure including Aquagreens and a Blue Green Plan

for the city totalling £1.5bn. The city is also thinking beyond flooding to the other extensive climate risks within the national Climate Change Risk Assessment and understanding as a business how the council will be impacted through the Adaptation Reporting Power local government pilot as well as developing a city Adaptation Strategy.

When undertaking large scale programmes across communities what are the principles underlining your engagement approach?
As an example, for Dane Park, new housing scheme, we already have the data that shows the site sits in the most deprived ward in the country for fuel poverty. On the back of this, and the fact that Hull has declared a climate emergency, we pushed forward with ASHP/ Photovoltaic to help with the soaring costs associated with heating and hot water. There is always the formal planning process that allows any input from the community, we engaged with ward members and housing staff, updated via ward newsletters and on the official HCC website etc and the usual contributions from EA/flood team/ other stakeholders. Engagement and prior consultation has been key to ensuring our retrofit schemes are successful and that our residents are onboard for the journey as the works carried out to their homes can be extremely disruptive.

How do you link between meeting housing demand, regeneration of place, transport upgrades and the decarbonisation of the region?
It is the strategic context that links these agendas. Our Local Plan is currently being revised to embed climate change to a greater extent because of the net zero targets set for the city. Managing these elements has always been integral to our approach in Hull as we are a tightly bounded city and therefore land-use and competition for this has always been a consideration. These considerations are at the heart of our place-making approach using regeneration in its widest sense to drive employment growth opportunities for our residents and creating a city that is attractive both in terms of its built forms, but also its nature spaces and climate response. Integration to drive out multiple benefits helps us address silo thinking and appreciation of the contribution we make collectively. We also work closely with funders who support decarbonisation, for example Homes England (HE) and Department of Security and Net Zero, as well as neighbouring authorities, namely ERYC through current devolution discussions.

What impact has the current cost-of-living-crisis had on your long-term investment plans across these complementary agendas?
Like the rest of the local government sector, we are having to meet increased residents' expectations and requirements on a shrinking budget. The cost-of-living crisis has only increased these pressures, both on our budgets, but also partners and investors. However, this has also led to the council increasing its focus upon the opportunities to drive efficiency and maximise the co-benefits of investment. It is joining up budgets and solutions that enables the city to enable long term investment. In support of this, increased understanding of the challenges around net zero and climate risk through our developing Local Area Energy Plan and Adaptation Strategy mean that we can understand how the transitions will play out over the long term and develop investable propositions for funders, including looking at new business models and shaping long term investment certainty over short term profits. Costs associated with new housing delivery have increased considerably, whether this be labour, fuel, raw materials etc, compounded with a fall in the housing market and availability of mortgages. This has meant schemes have been delayed or repriced, which has a knock-on affect for timescales and ultimate delivery. As an authority, we are trying to increase our own direct delivery to try and ensure a constant flow of new housing is achieved. As well as utilising available funding streams i.e. HE, One Public Estate to support some of the impacts on costs. In terms of our residents, the cost-of-living crisis has increased the levels of fuel poverty within the city and therefore our residents benefit from our fabric first approach to retrofit with reduced fuel bills and warmer healthier homes.

The Orchard Park Estate in Hull

LIVERPOOL

Originally published on Unlock Net Zero – 17.07.24

Like many cities across the UK, Liverpool has made ambitious commitments to reduce carbon emissions across city council activities by 2030 to help combat the threat of accelerating climate change on the planet.

While Liverpool City Council activity only directly contributes approximately '1% of the city's emissions' (Liverpool City Council, 2022, pg. 7), it has a key role to play in leading by example, as well as facilitating and encouraging innovation and change wherever practically possible.

Traditionally, decarbonisation of transport activity in Liverpool has focused on the promotion of active travel and encouraging sustainable use of public transport/modal shift. This is in line with the transport evidence base prepared to underpin Liverpool's net zero commitments, however, in the longer term focusing only on how the transport network is used will not be enough to unlock our commitments, as local roads infrastructure and maintenance can make a significant and ongoing contribution to greenhouse gas emissions, climate change impacts and future resilience. So, while we recognise that this won't be an easy task – the city's Highways, Transport and Parking team, have accepted the challenge of reducing carbon in our day-to-day highways working practices, which we aim to accelerate through our involvement in the ADEPT Live Labs 2 Programme.

So, what are we doing differently?
ADEPT Live Labs 2 is a UK-wide programme funded by the Department for Transport that will run until March 2026 focussed on decarbonising local roads provision. As one of 7 Live Lab 2 projects awarded funding, Liverpool City Council is utilising this additional £3.9m funding to connect the entire value chain across the full lifecycle of the highways asset, using a collaborative approach to create an underpinning framework for Liverpool, which can be replicated nationwide, integrating decarbonisation principles into everyday operational highways processes for local authorities.

Deliberately targeting innovative technical solutions which have not yet been tested at scale across a UK city, we are collaborating with industry specialists, academic partners and our local supply chain to form an innovation ecosystem to support a robust 'optioneering' approach. Accordingly, we are working to implement an effective user-friendly decision-making tool, based on scalable systems mapping and options configuration, which allows us to consider the full lifecycle carbon implications of

The partners collaborating on the project

highways maintenance schemes before any significant investment is made. Our so-called 'Carbon Hierarchy Lens toolkit' is designed to make the data collection and assessment process simple and prompt, allowing this approach to

> **THE CITY'S HIGHWAYS, TRANSPORT AND PARKING TEAM, HAVE ACCEPTED THE CHALLENGE OF REDUCING CARBON**

integrate into our evolving process covering highways scheme delivery. It considers various factors including the fundamental objectives and requirements of a scheme, work and design scope, activity and inventory-based carbon footprint associated with material quantities and operational processes, as well as wider social impacts. A focus on local specifics enables this accurate full lifecycle cost and carbon measurement, and improved awareness for decision-makers at all levels.

Essentially, this tool aims to offer a comprehensive solution for Liverpool to better understand the environmental impact of materials, optimise decarbonisation efforts, standardise data tools, reporting, and evaluation processes for consistency, and enhance clarity

Originally published on Unlock Net Zero – 17.07.24

in approaches to their design, planning, and policy making related to all carbon emissions in highway maintenance. It will also incorporate industry innovations across every stage of project delivery from early conception through to end-of-life.

While there are a range of carbon management tools already on the market, we believe that our hybrid approach has an added value – as it delves into considering carbon, not just at the construction phase, but throughout the extended lifecycle of the asset or network, including anticipated ongoing maintenance, refurbishment and repairs which allows us to forward plan while also allowing our teams to be an intelligent client.

Working with innovation industry specialists Pell Frischmann, Proving Services and Colas, our extended optioneering framework will bridge the gap between the Council as the commissioning authority and its range of subcontractors across the design and build value chain to create a carbon standardised approach. Our aim is for the project outputs to prompt a change in our current standards, which may include use of innovative materials, processes, or even the design and construction practices used. Through demonstrations on highways schemes in Liverpool, our project will showcase innovative technology, new materials, and generate blueprints and user manuals, supported by comprehensive data on carbon impact. However, critically, within the context of Live Labs, we need to show that our approach has relevance outside Liverpool, and therefore how the optioneering process and configurator tools generalise to other authorities, and how we can measure these impacts. Our work with the Future Highways Research Group (FHRG) through Proving Services will be fundamental to the testing of these approaches.

Focussing on urban contexts, Liverpool's Live Lab can therefore act as a comprehensive case study for other cities, and we will share our learnings with other Local Authorities so that they too can benefit from these learnings. This will start with a collaboration with Aberdeen Council, as both councils share coastal features, and urban environments, but will also include shared learning with Newcastle City Council to provide initial feedback on the tool and its applicability outside of the Liverpool test bed.

What is innovation?

We do face a significant challenge in moving from our conceptual approach to the practical implementation in the real world. This challenge stems from the broad landscape of emerging innovations and new operational processes, all of which have the potential to reduce the carbon footprint of schemes within Liverpool. With an influx of new products on the market, it is important to undertake a systematic evaluation of each innovation considered to ensure that we understand the benefits of use, as well as the applicability and acceptability within Liverpool's local context.

Transport is a key component part of wider net zero thinking

> **WE NEED TO SHOW THAT OUR APPROACH HAS RELEVANCE**

To achieve this, we have adapted an innovation matrix and scorecard to assess each innovation against predetermined criteria in the local context, while engaging a panel 'of experts' working in the sector locally to provide constructive challenge. This has allowed us to 'feed' the optioneering process and make informed decisions for our upcoming demonstrators, on a scheme-by-scheme basis.

We are also learning from other Live Labs such as the UK Centre

Originally published on Unlock Net Zero – 17.07.24

of Excellence for Decarbonising Roads – CEDR. Jointly led by North Lanarkshire Council and Transport for West Midlands, CEDR is providing a centralised hub for research and innovation for the decarbonisation of local roads materials, developing a knowledge bank, real-life conditions testing and sharing and learning insights. Furthermore, work by East Riding of Yorkshire Council, who are undertaking a future lighting testbed, will allow us to understand what assets are needed for our future networks, and how they can be further decarbonised across their lifecycle.

But outside of this, true innovation requires challenging the status quo, thinking outside the box, and taking calculated risks to drive progress and achieve outcomes. Our core project team is therefore completed by Bird and Bird, a legal practice who are specialists in public procurement, contracting and social value. This aspect of the project seeks to determine how to secure the deliverability of utilising new approaches, innovations and technologies through existing contracts, while considering how we may need to change in the future.

This is fundamental if the Council is to effectively manage the risks associated with the use of new innovations, while having the potential to accelerate the decarbonisation trajectory beyond business-as-usual process, while leveraging best value from public resources across the full range of collateral benefits. An example of this is how Gap Group – also part of the Expert Panel – will support us in delivering case studies focussed on adoption of low carbon plant, equipment and welfare assets. These studies will enable us to further understand how new procurement standards can drive contributions towards net zero, based on demonstrated scenarios.

Defining a lifecycle without precedents, and shaping it into a functional model that aligns with our vision is complex, but via strong collaborative working with our existing highways improvement contractors (Dowhigh, Huyton Civils and Tarmac) all three have played a key part by sharing their approaches to scheme design, carbon accounting and recycling of highways materials. The use of recycled highway material products will be a focus of our approach, both in the context of sustainability, environmental considerations and circular economy principles.

Connecting the other end of the value chain, Liverpool John Moores University will also be researching the use of locally recycled materials in the design of new pavement materials, which we will look to test in our demonstrator schemes. We will also seek to test the material in other parts of the UK for suitability in other locations as part of the collaborative approach.

Contributions to reduce carbon are required across all parts of the infrastructure chain

Final Thoughts

It has been a pleasure to be able to present the context, concept and update on the current status of our Live Lab in Liverpool as we strive to unlock our net zero commitments. We believe that Live Labs will make a significant contribution to the ambitious and deep reaching Realising Net Zero Liverpool Plan which is currently in development with support from the Department for Energy Security and Net Zero. This Realising Net Zero plan has synergy to Live Labs as it too focuses on assessing whole life carbon impacts, while having simple and common carbon accounting process for construction, materials and operational emissions, while working with contractors to understand their existing data collection processes and identifying opportunities to displace high carbon intensity materials with lower impact materials.

While we can only really scratch the surface within this short summary, we would welcome engagement with the wider Local Authority Highways sector, to stimulate further discussions and interactions. Please do feel free to contact us at LiveLabs@Liverpool.gov.uk.

Originally published on Unlock Net Zero – 17.07.24

LONDON

Pan-London collaboration for effective delivery of place-based decarbonisation.

We know decarbonising homes is crucial for achieving emissions targets and reaching net zero.

In 2022, emissions from residential buildings accounted for a fifth (20%) of greenhouse gas emissions in the UK (Housing and Net Zero, 2024). However, decarbonising homes (e.g low- carbon heating, energy efficiency measures) poses several complexities; expensive upfront costs to homeowners, disruption to residents, and complicated installation requiring specialised skills. It's clear that without external intervention and support, emissions from housing will continue to be a barrier to achieving net zero targets.

A place-based decarbonisation approach offers a method of delivering retrofit projects that accounts for some of these complexities, as it prioritises understanding local needs, issues, and circumstances before designing any implementation. One place-based model which embeds these principles is the Net Zero Neighbourhoods model, which was developed by the Cities Commission for Climate Investment (3Ci). The approach is designed to mobilise blended finance, including private sector investment, to deliver place-based climate and community infrastructure that has been co-designed with the community. It delivers this by packaging local net zero projects, centred around residential retrofit, into attractive investments that create long-term certainty for investors (3Ci). The model has the potential to overcome cost issues by acquiring the required upfront investment from financial institutions, simultaneously freeing up budgets for other pressing issues in the sector, such as affordable housing.

Local authorities are well-placed to test this approach, with pre-existing relationships with local communities and their own housing stock to begin implementing the model. However, to build investor confidence, the net zero neighbourhoods model needs to be demonstrated in a series of areas which takes funding, resource and expertise. Aiming to acquire these collectively to ensure efficiency and capitalise on this innovative approach to delivering and funding local climate infrastructure projects, the London Net Zero Neighbourhood Cohort was set up in autumn 2023. It brings together a group of twelve pathfinder boroughs who are actively developing NZNs and other similar approaches to place-based decarbonisation. The cohort supports the development of these NZN plans into investment ready proposals, by focusing on collective learning between boroughs, identifying shared barriers and coordinating on solutions. Representatives from key partners including the GLA, London Councils, and the Green Finance Institute are also involved in the Cohort and it also prioritises taking learnings from other regional groups around the country. The Cohort sits under the Green Economy theme, led by the London Borough of Hounslow, within the London Councils Climate Programme.

> **LOCAL AUTHORITIES ARE WELL-PLACED TO TEST THIS APPROACH**

Strengths and challenges

The Cohort has several key strengths, one being the diversity in boroughs NZN approaches, which allow the cohort to coordinate more effective delivery through shared learning and collective commissioning of external support. This transparent approach will allow later adopters

of the model to bypass certain challenges and progress more rapidly. Initial mapping of the breadth of approaches showed common priority themes including community engagement, retrofit (central to the NZN model), heat decarbonisation, renewable power and green infrastructure. Exploration of more unique identifiers such as supply chain capacity or comfort

THE COHORT IS WORKING COLLABORATIVELY TO IDENTIFY AND OVERCOME THE KEY CHALLENGES AND BARRIERS AT A COHORT LEVEL AND WITHIN THE WIDER LANDSCAPE OF THIS WORK.

fee mechanisms ensures a robust, scalable approach without duplication of resources and investment.

Due to the scale, urgency and impact of climate projects on Londoner's lives, effective community engagement and co-design of these projects is imperative to success. It helps to ensure projects are reflective of local needs, aids co-ownership and decreases risks of issues upon delivery. Some of our boroughs have already become leaders in this area and the cohort aims to harness this learning by producing a community design guide with best practice principles and case studies.

Delivering a just transition to net zero is a key priority throughout the cohort and the wider London Councils Climate Programme. Boroughs have outlined equity and a just transition as a key consideration in their NZN plans, and the NZN model ensures that households retain a reduction in energy bills, as well as enabling funding of collectively-agreed local climate interventions– such as more green and blue infrastructure. The cohort also proactively incorporates equity considerations within and between boroughs when selecting pilot areas, designing neighbourhoods and selecting projects, delivering 'with', not 'to' communities.

The cohort is working collaboratively to identify and overcome the key challenges and barriers at a cohort level and within the wider landscape of this work. Boroughs are exploring options for obtaining the necessary revenue funding to complete feasibility and implementation planning. Whilst investors may be cautious about supporting this early stage development work, it is crucial to building propositions and a market that are robust and attractive to financial institutions. Blended financial structures are challenging to build and test without the right technical support. For example, while some of the payment collection routes for the NZN model can be tested through demonstrators, technical support is still needed to support this process, and to build and test other revenue sources such as heat networks and community energy.

Influencing the progress of boroughs in this space is the availability of long-term and large scale funding to deliver this work. Current grant funding alone is not adequate to fund the scale of projects required, and their short-term, competitive-bidding nature is neither an adequate, nor a sustainable way to finance the scale of the NZN model. Recognising a clear need to focus on this, the cohort is working to transition approaches from short-term funding to long term finance and will engage with different kinds of funders, from philanthropic to institutional, to foster investor appetite and attract more sustainable, long-term finance.

Some of Cohort's key strengths include

Acquiring technical assistance

One of the key anchors for delivering London NZN demonstrators is a technical assistance facility (TAF). A TAF would provide the cohort with the necessary expertise, capacity, and initial funding to enable net zero neighborhood proposals to move from concept and early-stage feasibility to credible investor-ready business cases and potential demonstrators. Learnings from similar initiatives by the Combined Authorities indicate that a TAF can support the capability, capacity and help secure seed funding to move the cohort's selected demonstrators from concept to detailed design and business case. The cohort is collectively exploring possible avenues for collectively funding a TAF and mobilising it for the demonstrators.

NZN Practitioners Group

To ensure the knowledge, experiences and learnings from the cohort are shared beyond our members, the cohort established the London Net Zero Neighbourhoods (NZN) Practitioners Group earlier this year. The practitioners group is open to officers at any stage of developing an NZN or those who wish to learn more about this blended-finance, place-based approach to climate action. The group is intended as a way of sharing and solidifying the learning that is coming through from the cohort with the wider London audience.

Conclusion

The Cohort is focused on shared learning, collective commissioning and collaborating on outputs to deliver net zero projects whilst saving public resources. Coordinating this with a range of economic, social and environmental benefits, the Cohort accounts for a range of agendas to build to holistic, place-based regeneration.

Councillor Katherine Dunne, Cabinet member for environment and climate change, London Borough of Hounslow

"Hounslow Council is proud to be leading the London Net Zero Neighbourhoods cohort. The cohort provides an opportunity for London to progress towards investor-ready net zero neighborhood demonstrators, delivering positive change to communities with a multitude of co- benefits. Our work also signals to stakeholders the clear commitment from London's local government to this holistic approach to place-based decarbonization"

Jacob Heitland, Director of climate change, London Borough of Newham and member of the NZN cohort

"The London Net Zero Neighbourhoods cohort is an excellent example of how the climate programme uses the ambition and leadership of London boroughs to go further, faster on the complex and interconnected issues we are facing across the capital. Improving the health and energy efficiency of our neighbourhoods in a just manner requires this form of working together and I'm looking forward to collectively solving at".

London Borough of Hounslow

Councillor Katherine Dunne

NEWCASTLE

Originally published on Unlock Net Zero – 11.12.23

Newcastle has made the commitment to have net zero emissions by 2030.

They are open and honest about the challenge. They recognise that it will require far reaching change in every part of the city and will need collaboration and partnership working to deliver.

What are the origins of the 2030 target? The City Council announced a climate emergency in 2019. It took a year to develop a strategic action plan to address the issues a climate emergency creates.

This was not just about writing a plan, but it also involved setting up the right structures and recruiting teams to work on the plan that will support change at a vast scale and over the course of a number of years.

The Net Zero Newcastle – 2030 Action Plan sets out the scale of the challenge the city faces, and highlights where action is required to mitigate and adapt to climate change.

The plan highlights over 100 ways in which residents, businesses and organisations can work together to achieve net zero.

As we come to the end of 2023, four years in, how is it going?

We caught up with Tim Rippon, Principal climate change advisor at Newcastle City Council to discuss progress to date and understand how the decarbonisation agenda sits alongside other priorities the council must deliver.

Mr Rippon notes that there have been external issues not foreseen when the plan was produced, not least the impact of the Covid pandemic, but he feels that on balance things are progressing well.

"Not everything moves at the same pace and some programmes are

> **A KEY FOR THE COUNCIL IS TO TRY TO, WHERE POSSIBLE, SIMPLIFY THE PROCESS**

working ahead of others, but we have time to develop them all within our original timescales."

The action plan has 11 work programmes:

- Residential and domestic
- Property and asset management
- Low carbon heat networks
- Planning policy and planning decisions
- Adaptation and carbon sequestration
- Transport and highways
- Waste, the circular economy and food
- Green growth and green skills
- Supply chain purchasing and procurement
- Newcastle City Council/Your Homes
- Newcastle organisational emissions
- Communications and public engagement

The fact that there are 11 programmes shows the complexity of delivering net zero and how consideration has to be given to the interconnectedness of work in this area. A key for the council is to try to, where possible, "simplify the process".

But, as Mr Rippon acknowledges, infrastructure is the key to ultimate delivery.

The ongoing decarbonisation of the grid is helping, and the council has placed a real focus on decarbonising social housing (Newcastle has 35,000 social homes) because this allows them "to make impact at scale".

A key part of Newcastle's plan is through the construction and operation of heat networks across the city.

"They are a fundamental part of our strategy" says Mr Rippon, "infrastructure is key to the delivery of net zero. We are one of six pilot cities for heat network zoning".

Heat network zoning will, say the Government, fundamentally transform the development of heat networks in towns and cities across England.

By designating zones where heat networks are expected to offer the lowest-cost solution for

Newcastle City Council

The council's has developed the Net Zero Newcastle – 2030 Action Plan

decarbonising heat, local authorities and heat network developers can quickly identify where new large-scale strategic heat networks should be built.

Newcastle is proud of the role they are playing in progressing this approach and using their experience to feed back into government to provide a "real-life" evidence base to seek to unlock funding for this approach.

When it comes to balancing the decarbonisation journey with wider council priorities, Mr Rippon believes that "strong leadership is the key".

For the decarbonisation aspect of their work, the Council has worked hard to educate and engage its workers at all levels to understand why the council is taking the approach it is, and how they can add net zero criteria into their strands of work.

He also sees the purchasing power of the council as a positive lever to begin to create a larger low carbon market locally and regionally. Indeed, when you look at the action plan it is set out to explain how it delivers for the local economy, individuals and the local environment.

Within the plan, the Council says "Our ambition is for a green city of the future, which values all residents, provides quality sustainable housing, a low carbon economy which addresses poverty and looks to ensure all people feel invested and included by challenging social inequality."

So how have Newcastle engaged their residents on their ambition?

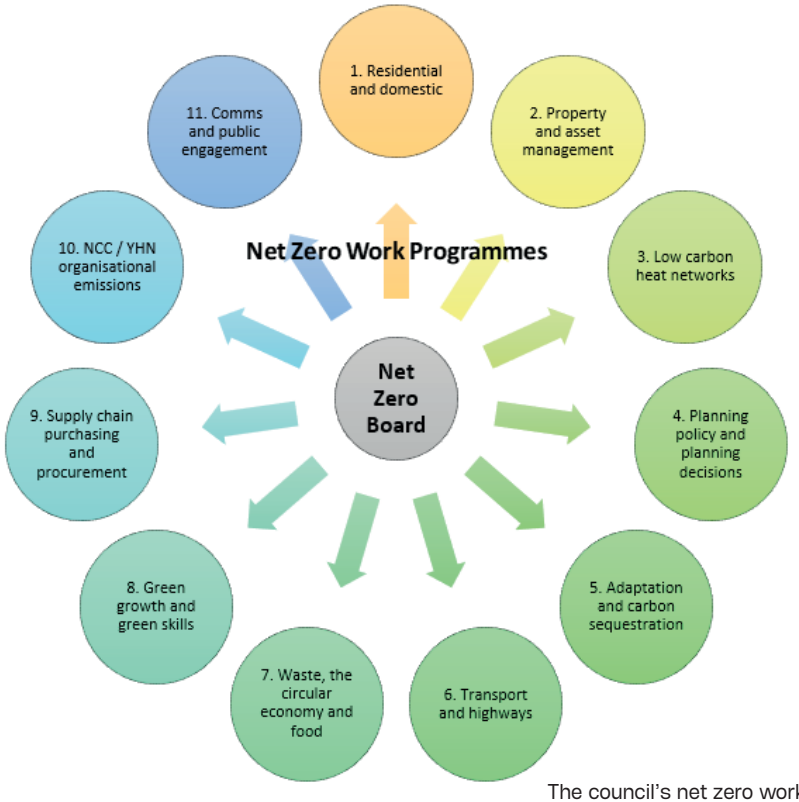
> **THEY STARTED WITH A CALL FOR EVIDENCE WHICH RESULTED IN OVER 1,200 RESPONSES. THIS PROVIDED A GOOD EVIDENCE BASE**

They started with a call for evidence which resulted in over 1,200 responses. This provided a good evidence base for them to develop their decision making and informed the construction of the action plan.

In addition, they undertook face to face engagement with the hosting of a series of summits. Importantly these summits included a wide range of residents – young people, the ever-growing student community in the city, businesses and voluntary groups.

This was supplemented by a Citizen's Assembly by the North of Tyne Combined Authority which was a more intense programme, but again provided the council with a clear steer through the production of a recommendation report.

This has helped move forward work to create a brand identity to support and engage in the council's net zero activity with the aim to really accentuate the positive and make the switch to net zero an aspirational activity for local residents.



The council's net zero work programmes

With continued demand locally for housing, how is the council managing the competing demands of increasing housing availability and reducing the carbon footprint of the city's homes?

Mr Rippon explained that, since the announcement of the climate emergency, the climate change team has been actively involved in reviewing major applications, but the secret is the timing of these interactions.

"We would review before they got to planning" which proved beneficial allowing developers to understand clearly what is expected and build them into the design of their proposals.

Mr Rippon feels that the uplift of Part L regulations in 2021 has also helped.

The aim being that new buildings built to these standards are expected to produce lower regulated carbon dioxide emissions with higher fabric energy efficiency standards.

"It is hard now to put gas boilers into new homes" and this will only continue with introduction of the new Future Homes Standard in 2025.

"This will help us to make the case at the local level and for the majority of new homes to become low carbon in operation".

He also sees the ability for housing operators to take a holistic view and look to see how we can "develop new technology that can deliver on damp and mould and net zero requirements."

This is linked into the Newcastle approach, "We are building from the bottom up, using our knowledge to create low carbon neighbourhoods.

Everything we are trying to do relates back to the infrastructure we are working with, and we are trying not to topple the grid through our actions."

EVERYTHING WE ARE TRYING TO DO RELATES BACK TO THE INFRASTRUCTURE WE ARE WORKING WITH

He sees the potential for the further development of microgrids across the city.

These are in effect local electrical grids, using local sources of supply but also attached to the centralised national grid, with the ability to function independently should it need to.

Looking ahead what are three key areas for 2024 and the continued delivery of the Newcastle action plan.

Mr Rippon sees these as:
The further development of heat networks, stressing the importance and big role they have to play in delivering the council's 2030 ambition:

- Procurement and the ability of the council to help drive the local market, and also drive carbon disclosure through the procurement frameworks and requirements they put in place
- Technology. As new low carbon technologies and improved products come to market, it is important to capture that innovation to deliver Net Zero at pace and affordably
- Newcastle has set itself a bold ambition of reaching net zero by 2030, but they are displaying a clear understanding of the issues and challenges ahead, as well as highlighting the opportunities successful delivery presents for its numerous local stakeholders.

This appears to be because they have based their plans and decisions on clear evidence collected locally and an acknowledgement that they need to take a "positive but realistic" approach to delivering.

Cllr Marion Williams, Cabinet member for a Connected, Clean City with students at the Newcastle Youth Climate Change Summit

PART TWO

INSIGHTS

A COLLECTION OF SPECIALLY COMMISSIONED THOUGHT LEADERSHIP ARTICLES ALONGSIDE PERSPECTIVES FROM OPERATORS WE HAVE SPOKEN TO AS PART OF THIS PROGRAMME

CONTENTS

PART TWO // INSIGHTS

Views from operators within the sector on how they see some of the issues involved in creating a holistic approach to these agendas.

E.ON

Chris Norbury, Chief executive officer, E.ON UK

The last few years has seen the world experience an energy shock, the likes of which we have not seen in a generation. Bills remain stubbornly high for too many people and the pace of the energy transition has started to stall, exposing UK households and business to volatile global fossil fuel prices.

E.ON is doing everything we can to deliver a better energy future. In 2022, we worked at pace to deliver a multi-billion-pound Government package of support for all our customers. Last year, we took the decision to invest substantial sums into a targeted support package to help those on the lowest incomes be in a better position to afford to heat their homes. We have also focussed our strategy on providing customers with smarter, personalised and affordable energy solutions, which can help them permanently reduce their energy bills whilst at the same time cutting emissions. Delivering positive outcomes for individuals and communities is an integral part of our mission. This is true for both our customers and our employees Our 9,000 employees work at a company which has been recognised in the Inclusive Top 50 UK Employers List for six consecutive years and in 2022-23, was listed as one of the Best 100 Apprenticeship Employers. By creating a supportive and dynamic working environment for our employees we know we can deliver better solutions for our customers. We know what we need to do to make the vital progress required to deliver a fairer and more sustainable energy landscape for the people of the UK. At the end of the next Parliament, the UK should have made substantial progress towards meeting its 2030 emissions goal agreed at COP 26 in Glasgow. It represents a 68% reduction in greenhouse gas emissions compared to 1990 levels.

Green infrastructure investment and skills:
The Challenge - An energy system that works well requires substantial, long-term investment

in infrastructure and supply chains. Most importantly, we need to make sure that there are enough people with the right skills that want to work in the sector. Long-term, consistent policy with cross-party backing and support has played a vital role in attracting private sector investment into offshore wind. This provides a role model for how we can scale up investment to address the next challenges we face in decarbonising the energy system. 27% of the energy utilities workforce are expected to retire in the next decade Alongside this, we need to make sure the country has the right skills in the right areas to deliver the full potential of green growth. As the sector decarbonises, some of the jobs currently performed will over time disappear, but many will have the skills that can be usefully deployed with some training to support the new growth areas. For example, gas boiler engineers are well placed to install, with a targeted training package, heat pumps.

What is E.ON already doing?
At E.ON, we are proud of our investment in the UK over the last twenty years. From investing in some of the very first offshore windfarms in the world, we are now delivering flagship projects supporting major businesses across the UK to invest in their own energy infrastructure, such as with Peel Ports in Liverpool, where we are delivering the largest roof-top solar project in the country and at Queen's Medical Centre in Nottingham, where we are delivering ground-source heat pumps and upgrading energy efficiency to provide a better environment for patients at a lower cost to the NHS.

Heat Networks: Heat networks supply heat from a central energy source to consumers, via a network of underground pipes carrying hot water. They can cover small and large communities including Cities and can help avoid the need for individual boilers and heating systems in every building. There are many possible technologies that can provide the input to a heat network including energy from waste (EfW) facilities, biomass and biogas fuelled boilers, Combined Heat and Power (CHP) plants, fuel cells, heat pumps and geothermal sources. Although heat networks are still in their early stage of development in the UK, they are widely used across Europe. Whilst only 2% of UK homes are currently supplied by heat networks, the Climate Change Committee has concluded that with adequate support, this could rise to 18% by 2050. Recent legislation extends customer protections for heat network users and enables local authorities to designate 'heat zone' areas. E.ON supports the use of heat zoning to scale up the sector over the next decade. E.ON has already invested in more than 50 heat networks in Britain, supplying over 30k customers. We have pioneered the delivery of bespoke, local heat zone solutions across the country. Citigen, a pioneering heat network in London, is now complementing its gas CHP energy centre with a new ground source heat pump solution to support the long-term decarbonisation of the scheme. The network comprises over 6km of heat pipelines and over 4.5km of cooling supply to commercial and residential properties from the Guildhall to the Barbican Centre, providing heating and cooling to the equivalent of 11,300 homes. Citigen is a key part of the solution for the City of London's environmental targets.

EV Charging Infrastructure:
We build, own, and operate public charging infrastructure for all types of electric vehicles. We also provide EV charging in people's homes, at work destinations and in public destinations. Our charging posts have a 99% level of reliability and we operate a 24/7 contact centre to help our EV customers. In total, E.ON operated charge points in the UK supplied approximately 6.5 million miles of travelling in 2022.

Driving the energy skills of the future: Kingswinford, in the West Midlands, is home to E.ON's Net Zero Training Academy. Since it was opened in 2017, we have provided over 2,000 technicians and engineers with skills needed to help run a smarter, cleaner energy system. Now, it is focused on becoming a hub to train people in the wide array of skills necessary for the greener energy solutions that will be the future of more affordable and more sustainable energy in our homes and businesses. E.ON supports a wide-ranging and comprehensive programme of apprenticeships, including degree level apprenticeships in areas such as electromechanical engineering, supply chain management and project management. We will be offering a number of new programmes linked to net zero in 2024. We currently have 209 apprentices on the programme and have invested £3,575,333 in our apprentices over the last 5 years.

Case study: City Partnerships
Across Europe, E.ON works in partnership with cities like Berlin and Malmo. We think this partnership approach would benefit British cities too. Coventry City Council has joined forces with E.ON to launch a pioneering 15-year Strategic Energy Partnership. A first in the UK, this will see our two organisations collaborate on revolutionising energy use in the city for the benefit of local communities and the wider economy.

We have set ourselves several objectives for the partnership,

which have been divided around four strategic themes: (1) clean local energy, (2) jobs and skills, (3) innovation and scale, and (4) community benefit. Each of these themes will drive our focus towards outcomes that benefit Coventry in a variety of ways. Through our partnership, we will transform the city's approach to carbon reduction focussing on energy sustainability, efficiency and boosting the local economy. We will create new jobs, tackle green skill-gaps through a deliberate push to preference local supply chains, businesses and educational institutions and deliver projects that will generate and supply energy, help tackle fuel poverty, enable energy resilience, help create cleaner air, and help promote health and wellbeing.

We will work together to initiate, develop, and deliver innovative projects, strategies and business models that will drive the city towards net zero. By having a single strategic partner, projects and initiatives that would otherwise be unable to be undertaken, are able to be considered on a longer term, holistic basis so that both Coventry City Council and E.ON can achieve a truly unified approach to energy management and decarbonisation across the city.

What would E.ON like to see?
Our overarching ask of all political parties is this: work with us to develop a long-term plan for energy security in this country, with a focus on the delivery of infrastructure and skilled jobs. Long-term policy certainty will drive investment in both these areas.

However, Government intervention is needed to ensure (i) that feasible career paths exist for the delivery of essential net zero infrastructure in a timely enough fashion; and (ii) that these careers are attractive enough to deliver the number of skilled workers needed to reach net zero in the time required.

Underpinning these overall asks are a series of specific policy asks which can help such a strategy prove transformative:

Faster grid connections: It takes far too long for energy infrastructure to connect to the electricity networks. This includes domestic level installations such as EV charging points, medium scale technologies such as batteries and large-scale transmission level connections such as new renewable generation. Rule changes giving National Grid ESO the power to introduce strict milestones into connection agreements and terminate projects if they do not hit them at each project stage are a sensible way forward, encouraging higher quality, faster grid connections. Similarly, we welcome the idea of a strategic spatial energy plan, as well as proposed community level incentives of up to £10,000 over a decade for households living near essential new energy infrastructure to support speeding up the connection process. However, we do not believe that these benefits should be funded via a levy on energy bills.

Network competition: The 2023 Energy Act empowers Government to introduce competition into new onshore network upgrades. This must be actively pursued in order to deliver grid expansion cost effectively for customers. To minimise the cost of network investment, it is also imperative that new local flexibility markets are rolled out at pace, drawing from domestic and larger scale flexible energy resource.

Investable planning framework: We welcome proposals to update the National Policy Statements (NPS) more frequently on a 5 yearly basis. This will enable the planning system to become more agile and relevant. The recognition of EV charging infrastructure as a key priority under the updated NPS is a good illustration of this. It is important that the next Government ensures that local authorities have the right level of resources to process planning applications faster and make decisions in a timely way which provides greater certainty to developers. Ofgem's recent proposals around Regional Strategic Energy Planners (RESPs) show intent to support this objective.

Planning reforms can also address barriers to deployment. Removing the blanket ban on heat pumps not being able to be situated within 1m of a boundary wall is a welcome development and should be implemented at pace. Planning restrictions can also present a significant challenge to the installation of solid wall insulation in community schemes, which can act as a barrier and increase costs. We should look to reform this so the planning system is more aligned with our net zero goals.

Chris Norbury, Chief executive officer, E.ON UK

EQUANS

How do we deliver local solutions at scale and pace?

Colin Macpherson, Divisional chief executive officer, Equans UK & Ireland

In tackling climate change, several critical factors are often misconstrued or neglected, ultimately impeding our progress.

First, the scale of the issue cannot be understated. While many recognise climate change as a pressing global challenge, the enormity of the task has resulted in a fragmented response. Competing priorities often divert focus and resources, making it challenging to formulate cohesive strategies.

Although the UK government has demonstrated commitment by enshrining Net Zero in law and allocating grant funding, what is notably absent to date is a comprehensive plan that addresses all carbon sources. While investments in energy infrastructure are commendable, more attention is needed on the built environment, which significantly contributes to carbon emissions (20% of total[1]).

Second, the role of local government and the advantages of a place-based approach are paramount. In its landmark Net Zero Strategy[2] in 2021, the UK Government recognised that 82% of UK emissions are "within the scope of influence of local authorities, and evidence suggests that tailored, place-based strategies are often more effective and economically viable than national-level initiatives. By leveraging local characteristics and needs, these strategies can yield substantial socio-economic benefits at a fraction of the cost of broader national programs. However, local authorities face financial constraints exacerbated by recent crises, limiting their capacity to implement climate initiatives. Devolving more power and resources to them is essential for fostering effective local action.

Finally, a skills crisis threatens the implementation of scalable solutions. The workforce required to address climate change is aging, with the average technician in their fifties. The industry needs 429,000 retrofitters to decarbonise buildings alone[3], but there is a shortage of trained

professionals. This skills gap puts immense pressure on the industry and lack of visible long-term pipeline discourages private sector investment in decarbonisation efforts.

To address these challenges, we must adopt a holistic approach that considers the end goals and works backward to develop actionable strategies.

Our approach with our partners is very much to start at the end and work back. We look at what impacts our customers are trying to achieve and map out the road to get there. In other words, the outcomes and impacts will drive the inputs.

We then collaborate with our partners to gather accurate data, enabling them to make well-informed decisions. Armed with the right information about regional carbon footprints, infrastructure, transport, the number of homes in fuel poverty, and those needing retrofits, we can then roadmap comprehensive regeneration projects for a place. Our expertise ensures that these initiatives not only drive health and wellbeing but also achieve desired outcomes efficiently and effectively.

Despite the complexity of dealing with the above factors, we are continuing to collaborate with local authorities to drive innovation and seek alternative routes to decarbonisation amidst the lack of funding and control.

Once the plan is created, we then translate it into actionable projects to deliver the desired outcomes. At the same time, we begin the process of exploring funding options and our approach leverages a blended financial strategy, combining central government funding through the likes of the Public Sector Decarbonisation Scheme (PSDS), the Warm Homes: Social Housing Fund (formerly SHDF) or the Low Carbon Skills Fund (LCSF) with private finance. In the absence of local funding, these funding schemes have been paramount to unlocking net zero; in that they have shown, at micro levels, what can be achieved when there is money and measures put in place to decarbonise.

Equans is also committed to developing scalable solutions for place-based decarbonisation, tackling capital investment challenges while maximising social impact. Our initiative with Dudley Metropolitan Borough Council aims to create Europe's first net-zero carbon neighbourhood, addressing both climate change and fuel poverty. This innovative community led approach not only pioneers' local energy supply solutions but also seeks to generate revenue streams that can unlock private finance for local authorities.

At the core of our place-based strategy is the concept of systems optimisation. By leveraging multiple technologies and solutions across the whole system of buildings, infrastructure & transport, we can choose the best technologies for that specific place, saving costs and maximising value.

To achieve the required scale, we need to get as much funding into the system as possible, and we champion blended finance as a critical tool for mobilising capital. By combining public and private investment, we can mitigate risks and incentivise stakeholders to support green initiatives and lower the cost of capital. This financing model will enable local authorities to fund large-scale projects that deliver tangible environmental benefits while ensuring financial returns for investors.

Our commitment to maximising social impact ensures that the benefits of decarbonisation extend beyond environmental gains. We are focused on creating inclusive opportunities for local communities, empowering them through job creation and capacity building. By engaging with community stakeholders, we can ensure that our initiatives address local needs, contribute to equitable economic development and boosts public adoption.

Navigating the legal and commercial landscape is crucial for successful decarbonisation efforts. Our approach involves adopting new legal frameworks and commercial strategies that facilitate collaboration across sectors. By fostering partnerships between government and businesses, we aim to create the right team of organisations that can achieve our collective zero carbon ambitions. We are steadfast in our belief that it is only through sharing ideas and collaborating with our peers that we will meet our countries goals & targets.

Through these solutions we can create a clear, investible roadmap for decarbonising the UK. It won't be easy, but with a robust strategy and commitment from central government, alongside capable & ambitious devolved powers at a local level, we believe we can make this a reality, together.

↘ Colin Macpherson, Divisional chief executive officer, Equans UK & Ireland

1. 2022 UK Greenhouse Gas emissions: one page summary (publishing.service.gov.uk)
2 net-zero-strategy-beis.pdf (publishing.service.gov.uk)
3 https://www.localis.org.uk/wp-content/uploads/2022/03/050_MappingARoute_2.pdf

MEARS

How to engage effectively at a community and local level

Mears is one of the UK's leading housing solutions providers to both the public and private sector and we understand the value of effective customer engagement at both a community and local level.

Our customers are at the heart of everything we do, and our ambition is to become the most socially responsible business in the housing sector by 2025. Our approach to customer engagement prioritises where we can have the greatest impact with customers, to raise standards for every resident in the sector.

We understand that the transition to a low-carbon future must be inclusive for it to have an impact. But before engaging with customers, it's crucial to understand the dynamics of the community. Once we understand the needs and wants of each community we work in, we can start to make meaningful change.

Building trust and rapport is the foundation to effective engagement, and without this, customer programmes will not deliver. As a sector we need to prioritise transparency, honesty, and integrity in interactions with our customers. Regular communication, active listening, and responsiveness to concerns are key components of building trust and rapport.

In change programmes, distrust can easily manifest through previous experience with both client and contractor. When making changes to decarbonise the nations homes, communities receiving the works tend be those where properties are already underperforming, which in turn lends to negative customer satisfaction before the engagement has started. The customer may have experienced delays with works starting, due to extensive PAS (Publicly Available Specification) design processes, planning applications, reengineering specifications due to cost inflation and accrediting supply chain.

The customer engagement strategy

Originally published on Unlock Net Zero – 08.08.24

we delivered under the Social Housing Decarbonisation Fund (SHDF) Wave 1 for our client Milton Keynes City Council demonstrates how challenging customer engagement can be when perception of outcomes is derived from previous experience. After promises had not materialised under previous planning measures, we developed a multi-channel engagement plan that truly captured hearts and minds. We delivered a two-tier approach, starting with consultation with the local parish council to understand the driving factors that would engage the community best. From here, we delivered in person customer engagement sessions which allowed the whole community to have a voice on the retrofit plans, which covered everything from the aesthetics of products in the programme through to colour scheme choices of render, cladding and doors. Over 200 customers took part, had their concerns heard and listened to and left feeling that retrofit hadn't been done to them. Instead, they had been empowered to be part of the journey.

When it comes to the topic of decarbonising homes, there are additional barriers to communications and perception that we also have to overcome as a sector. Evidencing cost savings and impact on the customers day-today life being of vital importance. To effectively listen to our customers, we have developed the Your Voice Scrutiny and Advisory Board. Your Voice is part of our Customer Involvement Strategy and aims to drive action from insight and advance service standards for Mears customers, through customer-led scrutiny, challenge and support of Mears' improvement plans and performance in these areas.

Your Voice sets the highest standards of customer involvement and engagement across the Group, leading the way nationally and delivering real benefits to all our customer groups.

The learning from the Scrutiny Panel and associated groups also promotes best practice and shared learning across the Group through insights, challenges and innovation. We also see how empowering customers to participate in decision-making processes in retrofit is essential for fostering a sense of ownership and community pride. Within the sector we need to create opportunities for participation in our journey to net zero, through customer councils, community meetings, surveys, and focus groups. By involving residents in decision-making, providers can ensure that their services align with residents' needs and preferences.

Our experience has also taught us the value of effective communication, which requires understanding customers preferred communication channels and tailoring messages accordingly. With the challenges we face around decarbonisation this is more prevalent than ever. While some residents may prefer face-to-face interactions, others may prefer digital communication platforms such as email or social media. Housing providers should offer multiple communication channels to accommodate diverse preferences and ensure that information reaches all residents.

Accessible information is critical for ensuring that residents are well-informed and engaged. We need to communicate valuable information on retrofit and its benefits in clear, simple language, and provide translations or accommodations for customers with language or accessibility barriers. Additionally, providing information in multiple formats, such as written materials, audio recordings, and videos, can improve accessibility for all customers. We have developed a series of DIY and fact-based videos to support customers with the work we are delivering under SHDF.

Listening to customer concerns and feedback is essential for identifying issues and improving services. Often resident and community concerns will not be obvious to design and delivery teams when determining the needs of an "Asset" rather than a "Home". By establishing clear channels for residents to voice their concerns and provide feedback, such as suggestion boxes, hotlines, or online forums we're able to address any concerns raised and follow up with customers, demonstrating responsiveness and commitment to their well-being.

In addition to delivering energy efficient measures in homes, many of our customers require support services to address social, economic, or health-related needs. Together we can collaborate with local agencies, non-profit organisations, and service providers to offer a range of support services, such as employment assistance, financial literacy workshops, and mental health support. By addressing customers' holistic needs, we can promote stability and well-being within the communities we operate and effectively make the change needed for us to transition to a net zero future.

Originally published on Unlock Net Zero – 08.08.24

SARAH DALY

Where does the intersection of people, place and net zero reach its sweet spot?

Sarah Daly is Editor-at-large for this programme of work

The UK market for net zero/ decarbonisation has evolved rapidly since 2020, mostly stimulated by targeted government interventions including pump-priming the decarbonisation of the poorest housing through a variety of grant-funding initiatives like Social Housing Decarbonisation Fund and Home Upgrade Grant which have recently been relaunched by the Labour Government as Warmer Homes funding.

The Public Sector Decarbonisation Scheme (PSDS) and targeted regional funding have also built capacity, capability, knowledge and supply chain viability. Whilst progress has been demonstrably exponential, there have inevitably been many lessons learnt and the sector will continue to grow and mature at speed over the remainder of this decade on the path to net zero.

We have undoubtedly reached an inflection point, partly led by increased capability client-side and partly through the proven market opportunity which is stimulating major contractors to see beyond the Cinderella image of retrofit. Main contractors are pulling through supply chains, who can finally see procurement routes and scaled opportunities to further drive innovation and investment. Finally, despite bumpy national policy historically, devolved agendas are flourishing as regional and local government see that sustainability is essentially an all-encompassing approach to resolving multiple complex issues, from helping them to meet carbon reduction targets and improve resilience to economic development, especially dealing with inequality by increasing local skills by create long-term, well-paid green jobs.

So where does this intersection of people, place and net zero reach its sweet spot? Those who follow Kate Raworth's doughnut economics, or the principles of

the Sustainable Development Goals (SDGs) will be well-acquainted with the intersections of all the components of socially, environmentally and economically equitable places. In most regions this is now manifesting itself as Net Zero or Livable Neighbourhoods. In London it is Future Neighbourhoods 2030 and in Scotland, Local Living & 20-minute Neighbourhoods. Whatever the name, they are all variations on community or place-centred adaptation and resilience with economic regeneration and people at the core.

There is a simple reason for this move to devolved and regional leadership in the pursuit of net zero. Whilst national policy plays a pivotal role in setting the context, especially with systemic requirements, each region's challenges need an integrated approach to create community buy-in. In this context, community encompasses where and how people live alongside the business/industrial communities, with the public sector playing a crucial intersectional role.

Major public estates such as universities, hospitals and local authorities are also creating the capability and business case/investment evidence for commercial entities to decarbonise their operations. This is very appealing to the investor community looking for low-risk, long-term opportunities that underpin and enhance their Environmental Social Governance (ESG) scores. Additionally, public sector procurement is increasingly leveraging their opportunity to select from more sustainable and responsible suppliers, further driving transformation through bid compliance.

Meanwhile there is cognisance that data is required to create clear baselines and to evidence the multi-faceted paybacks of better health, educational and economic outcomes that provide the indisputable business case for the return on investment per £ invested in sustainable interventions. Digital solutions and the ability to share and learn from big data looking across regions and sectors, further underpins these more strategic,

> **THIS AGENDA NEEDS CLEAR CROSS-PARTY SUPPORT WITH LONG-TERM HORIZONS.**

multi-sectoral approaches. Large-scale social and low-income private housing is creating playbooks to decarbonise the most common and complex archetypes and creating the economies of scale and supply chains to roll out multi-tenure solutions on an area or street-by-street basis. We are at the vanguard of this process in 2024 as we learn from targeted pilots whilst evolving to more holistic solutions. Along with integrated thinking comes the realisation that at community level, overheating and flood risk adaptation should happen concurrently. Improvement to green spaces and biodiversity gain further uplifts community opportunities for environmental enhancement and resilience. And whilst the buildings and natural environment are upgraded, why wouldn't you look at connectivity and ensure that the local infrastructure encourages active travel and public transport to ensure optimal air quality and healthier people?

Whilst many of these interventions have happened in a disconnected way responding to crises such as fuel poverty, flooding or chronically poor air quality – the idea that all these solutions can combine to create more liveable, productive and healthier places is finally leading to the view that net zero or sustainable towns and cities is just another way of expressing levelling-up and safeguarding of future generations.

This agenda needs clear cross-party support with long-term horizons. We all want cleaner, safer, healthier and more productive places; the challenge is to ensure there is a mandate to put placemaking at the heart of the agenda, and that this is fully understood and championed by everyone.

In terms of what the next time-horizon brings – we expect to see more market collaboration, with the requirement for fully-integrated net zero solutions crossing all sectors and all disciplines from transport/travel, water, waste and local energy, with essential environmental solutions including natural flood remediation and biodiversity to enhance green spaces – all underpinned by decarbonisation to normalise the aspiration of better, healthier and livable places.

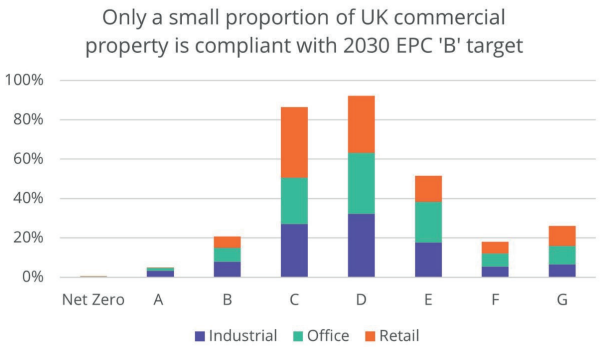
↘ Sarah Daly, Sustainability strategist

AVISON YOUNG

How are the public and private sectors delivering decarbonisation strategies across the UK?

Originally published on Unlock Net Zero – 14.06.24

Achieving net zero emissions by 2050 is one of the most pressing challenges for the real estate sector. With over 84% of the UK's population living in urban locations, the stakes are high.



Source: EPC register (for England and Wales)

Many urban centres are vibrant places, appealing to both residents and visitors alike, because of their cultural heritage, their diversity, their easy access to retail and leisure, strong transport connections as well as job opportunities. However, these areas face significant hurdles in their attempts to meet net zero emissions targets, whilst grappling with the crisis in funding shortfalls at the same time. With buildings accounting for around 40% of carbon emissions, both local and central government are having to partner with the private sector to help reach these goals.

In response to this challenge, the UK government implemented legislation for building owners (in England and Wales) mandating minimum Energy Performance Certificates (EPCs) standards. Initially, in 2018, the focus was on buildings either sold or newly let, which needed to hold a minimum EPC grade of E or above. In 2023, this was extended to all commercial properties including those under existing leases. By 2030, the minimum EPC grade required for a commercial building will increase to a B or above.

What are commercial property owners doing to lower carbon emissions from their buildings?

Despite this, research carried out by Avison Young shows that compliance levels of the 2030 target are alarmingly low: only 11% of industrial, 12% of retail and 9% of office properties have a minimum EPB B grade. This deadline is less than 6 years away, meaning landlords need to take action soon to avoid the risk of buildings becoming unlettable.

As part of the research, we assessed the cost of upgrading stock in the retail and industrial sectors, which proved to be substantial. To upgrade retail stock (retail parks, shopping centres and supermarkets) the estimated total cost for achieving the 2030 'B' target came to a maximum of £24bn, and over £30bn for industrial stock.

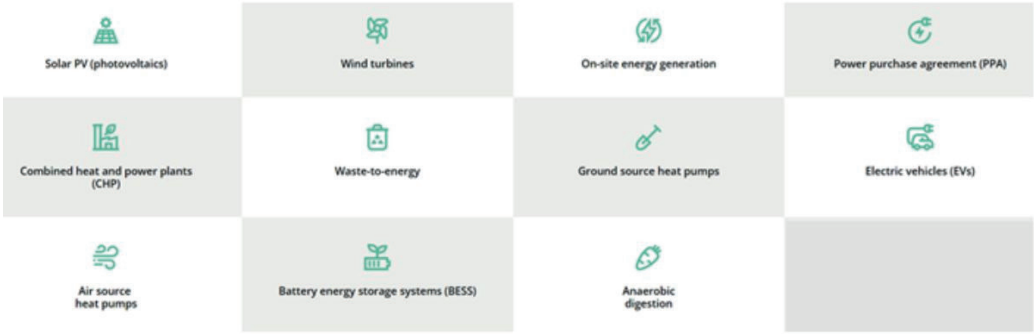
Whilst these costs present huge challenges ahead for building owners as the deadline approaches, there are some inspiring examples of both new and retrofitted buildings which are achieving 'A+' grades across both sectors. Launched in 2018, the Elliots Field Shopping Park in Rugby became the world's first 'zero regulated carbon' shopping park globally, featuring design elements that minimised energy demands such as PV panels, LED lighting, rainwater harvesting as well as the creation of a canal bankside nature area for wildlife. This building is listed on the EPC register as 'net zero'.

Originally published on Unlock Net Zero – 14.06.24

Whilst there are no 'net zero' shopping centres listed on the EPC register currently, there are some good examples of energy efficient shopping centres.

This includes Quayside at MediaCity in Salford and Gloucester Quays in Gloucester, which were the first UK shopping centres to achieve a 'Net Zero Carbon – Operational Energy' status in relation to the UK Green Building Councils' (UKGBC) Net Zero Carbon Buildings Framework. To achieve this status, upgraded lighting, which was more energy efficient, was introduced across all areas and the use of renewable energy was increased across both locations.

In Nuneaton, a one million sq. ft state-of-the-art logistics campus has completed. The two buildings, occupied by Rhenus Logistics, have been designed to achieve carbon net zero supply chains. It has been built to the highest environmental and sustainability levels, featuring the latest digital technology in robotics, AI and warehouse management systems to provide flexible solutions and control of the supply chain and is certified BREEAM Outstanding. In addition, the scheme's design has focussed heavily on social and environmental well-being, including initiatives such as encouraging biodiversity by planting numerous trees, creating log piles and bee, bat and bird boxes. Employee allotments, outdoor seating areas, sports facilities, and walk and running tracks have been installed, providing staff with green, open spaces to enjoy.



Examples of sustainable solutions to help with decarbonisation

How are cities tackling decarbonisation?

Whilst building owners are embarking on their own paths to achieve net zero, local authorities across the UK are stepping up with bold initiatives, launching their own carbon neutral commitments, and engaging with residents, local businesses and strategic partners to reduce carbon emissions in line with the national 2050 net zero target. But the latest data from the Office of National Statistics (ONS) reporting on greenhouse gas emissions shows that emissions only fell by 3.5% between 2021 and 2022 and were just 9.3% lower than pre-pandemic levels. This demonstrates that a significant amount of effort and resource will need to be invested across the UK in the coming years to address this challenge.

However, there are some good examples of initiatives from local authorities across the country who are leading the way in their attempts reduce carbon emissions.

One of the most innovative strategies is being implemented in Bristol, where the city council

Originally published on Unlock Net Zero – 14.06.24

has set itself a target of becoming carbon neutral by 2030. 'Bristol City Leap' is a joint venture between the council, Ameresco (a renewable energy company) and Vattenfall (a European energy company), which will deliver hundreds of millions of pounds into low carbon energy infrastructure, including solar, wind, heat networks, heat pumps and energy efficiency measures to help meet its carbon reduction targets. This will enable the delivery of over £1 billion of investment into Bristol's energy system and within 5 years plans to deliver 140,000 tonnes of carbon savings.

To enhance local biodiversity Sunderland City Council have installed living roofs (also known as 'Bee Bus Stops') across 90 bus shelters in the city. These living roofs, which are made of recycled materials, sit on top of the bus shelters and are planted with a mix of wildflowers to support bees whose numbers are declining. They also help provide natural cooling to combat the effects of 'urban heat islands', absorb rainwater to alleviate flooding, and filter fine dust particles from the air.

> **NOW IS THE TIME FOR DECISIVE ACTION, INNOVATIVE SOLUTIONS, AND UNWAVERING COMMITMENT TO OUR CLIMATE GOALS**

In Edinburgh, planning permission has been approved for a new 'eco neighbourhood' in the city centre. The development will consist of 256 sustainable homes (of which 25% will be affordable) and will include a large central communal garden, biodiverse green roofs, and a 'wetland' area. No fossil fuels will be used, as each home will also its own air source heat pump.

There are still major challenges ahead to tackle decarbonisation

While EPCs are a critical part of the route to decarbonisation, the broader challenge lies in managing the reduction of Scope 3 emissions (indirect emissions from supply chains). This requires collaboration across supply chains and industries. Organisations must work closely with suppliers to track and reduce indirect emissions, leveraging technology and innovation.

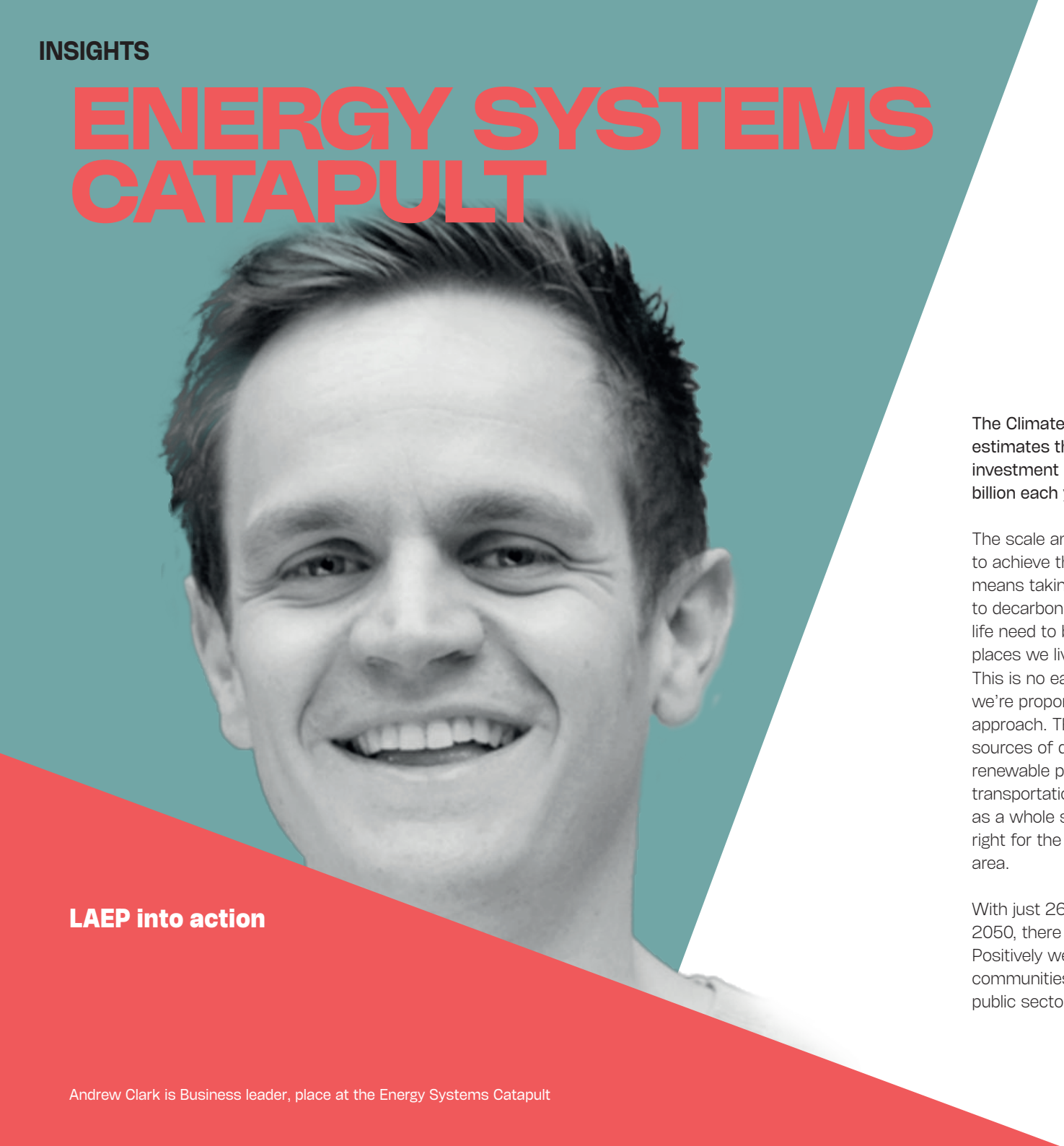
Recent policy shifts and rolling-back of some green initiatives, including delaying the ban on petrol and diesel cars, pose challenges to achieving the 2050 net zero target. It is crucial for policymakers to provide clear, unwavering support for decarbonisation initiatives, including financial incentives and regulatory frameworks. The positive news though is that many organisations in the property industry have the knowledge and the influence to take actionable steps towards decarbonisation and can work together with the public sector to achieve net zero targets.

The path to net zero is fraught with challenges, but also ripe with opportunities. By learning from successful case studies and fostering collaboration between the public and private sectors, the UK can make significant strides towards a sustainable future. Now is the time for decisive action, innovative solutions, and unwavering commitment to our climate goals.

↘ Lesley Males, Director, market intelligence at Avison Young

Originally published on Unlock Net Zero – 14.06.24

ENERGY SYSTEMS CATAPULT



LAEP into action

Andrew Clark is Business leader, place at the Energy Systems Catapult

The Climate Change Committee estimates that low carbon investment must scale up to £50 billion each year to deliver Net Zero.

The scale and pace required to achieve this ambitious goal means taking a holistic approach to decarbonisation. All facets of life need to be considered in the places we live, work, and play. This is no easy feat. That is why we're proponents of a place-based approach. This means adopting sources of decarbonised heat, renewable power, and low carbon transportation, and operating them as a whole system in the way that's right for the context of every local area.

With just 26 years to go until 2050, there is no time to delay. Positively we're seeing individuals, communities, businesses, and public sector bodies, taking the right steps forward. Whether that is by developing a coordinated plan, and installing electric vehicle (EV) charge points, installing ground and rooftop solar arrays, or fitting low carbon heating solutions in homes and commercial and public sector sites.

While these are positive actions, there is no clear and recognisable path to Net Zero for every place in the UK. This results in opportunistic delivery with some local areas charging ahead and decarbonising at pace, while leaving others behind.

LAEP forward

As a direct response to this challenge, Energy Systems Catapult pioneered the creation and delivery of Local Area Energy Planning (LAEP), a stakeholder driven, evidence-based approach that uses whole systems thinking to map out the optimal route for a local area to decarbonise.

Originally published on Unlock Net Zero – 11.03.24

A LAEP provides a level of detail comparable to an urban masterplan and considers a range of technologies and scenarios – such as deploying different heat decarbonisation technologies in different areas to avoid a high-cost upgrade of the electricity network. When combined with stakeholder engagement – incorporating their data, knowledge, and future plans – a LAEP is built on a common evidence base so that council planners, network operators, businesses and community groups know they are working towards a common Net Zero goal built on strong foundations.

The scope of a LAEP covers the current energy consumption and associated greenhouse gas (GHG) emissions, as well as the projected consumption in a defined area, primarily focusing on the area's built-environment (all categories of domestic, non-domestic, commercial, and industrial buildings) and some aspects of energy used for transportation. The plan looks forward from this current baseline to find a pathway forward to 2050 and any other local targets.

Setting the standard

LAEPs are becoming a recognised standard for local energy planning across the UK. Local authorities in areas such as Peterborough, Greater Manchester, and York and North Yorkshire have all developed and adopted LAEPs.

Welsh Government is forging ahead and demonstrating the effectiveness of considering LAEP as standard for all local authorities. Welsh Government is the first

> **LAEPs ARE BECOMING A RECOGNISED STANDARD FOR LOCAL ENERGY PLANNING ACROSS THE UK**

national government to fund the roll-out of LAEP for all its local authorities. In 2022 we were appointed official technical adviser for the delivery programme of Local Area Energy Plans across eighteen Welsh councils, a further four councils (Bridgend, Conwy, Newport and Pembrokeshire) already have LAEPs.

Uniquely as a government, in 2021 the Welsh Government, incorporated Local Area Energy Planning within its national planning policy. This was hugely significant as it paved the way for Welsh Government's decision to agree funding for all eighteen remaining local authorities to receive LAEPs.

The LAEPs in Wales will comprise both urban and rural locations, with differing contexts and unique opportunities and challenges. Residents in mid-Wales could share their views on energy and transport use until March 31 2024. Responses will inform the design and delivery of the mid-Wales LAEPs.

From plans to action, the LAEPs in Wales will provide local evidence and plans to help catalyse investment and action. Once all the LAEPs have been completed and aggregated, Welsh Government intends for them to inform a National Energy Plan and to turn its attention to delivery as early as 2025.

Peterborough LAEP

Away from Wales, cities across the UK are turning plans into action. Peterborough declared a climate emergency in 2019 and the development of a comprehensive, data-driven, and cost-effective plan for decarbonisation of the whole energy system swiftly followed. The LAEP covered 70% of Peterborough's total emissions.

The LAEP demonstrated that meeting a Net Zero target of 2040 would require investment of £8.8 billion into the city. The forecast investment required is the total capital costs of the whole energy system (including domestic heating, insulation, networks etc.). Investment would most likely come from a combination of private investment, residential home upgrades, and government grants.

Adrian Chapman, Executive director, place and economy at Peterborough City Council commented: "[The LAEP] will act as a blueprint for positive and real change in our city that directly benefits existing residents and businesses as well as future generations".

On the back of the LAEP, the authority has been considering how it turns the plans into action. They've recently been successful in securing £2.7 million in funding from Innovate UK's Net Zero Living programme to fund a project which will turn their LAEP into deliverable packages of work. It will work on governance, funding routes, skills and capability needs and customer engagement and specifically focus on the rollout of heat pumps in rural areas.

What is key about this work is the partnership working between the public and private sector from the council, Energy Systems Catapult, Edenseven, and Nordic Energy.

Originally published on Unlock Net Zero – 11.03.24

Joining the dots

A strategic decarbonisation plan is only the beginning of a local area's Net Zero journey. Once a plan is in place, the hard part follows, namely, turning that plan into local action for communities.

This means tackling emissions in our homes, communities, and local places. Having a plan like a LAEP allows us to give shape to the nature of these changes, what needs to happen where, when and how many, and the size of the aggregate investment opportunity. It also allows us to take a more efficient and coordinated approach de-risking delivery, such as through purposeful consumer engagement.

It is staggering that our domestic properties account for over one quarter of total GHG emissions. Concerningly, the average household emits 2.7 tonnes of CO2 every year from heating alone.

Consumers are curious about the future of home heating and the impact this will have on their lifestyle. This is understandable, particularly as 78% of UK homes are heated by a natural gas boiler – that is a big chunk of the population to convince that readily available alternatives such as heat pumps work. LAEPs allow us to plan consumer engagement around issues like this more effectively as part of a coherent plan being turned into action. We need to be upfront and honest with consumers, not only about the options that are available, but the impact the low carbon switch could have on them.

The Electrification of Heat Demonstration Project sought to understand the technical and practical feasibility, and constraints of a mass rollout of heat pumps into British homes. The Project, which is funded by the Department for Energy Security and Net Zero installed 742 heat pumps in a variety of housing archetypes such as flats, terraces, and semi-detached homes.

The Project found that not only are heat pumps three times more efficient than gas boilers, but they also work in a broad spectrum of housing archetypes. The Demonstration Project also found that energy efficiency upgrades were only required in 15% of homes.

For LAEPs to ensure scaled investment, we need to demonstrate that the technologies proposed within the plans will help householders to decarbonise their heating without compromising on comfort. We've done the hard work and proven that heat pumps work, now it's time to maximise those learnings and understand how their rollout can be supported once a plan is in place.

Place-based decarbonisation planning

We need to step up place-based approaches to decarbonisation within a national framework. It is in our places that people and communities take the decisions that will allow us to reach Net Zero, and that organisations, business and democratic institutions can align their action and investment.

Andrew Clark is Business leader, place at the Energy Systems Catapult

Originally published on Unlock Net Zero – 11.03.24

ANDREW SPENCER TO EQUANS

An integrated approach to tackling climate change

Andrew Spencer, Zero carbon solutions director, Equans UK & Ireland

The urgency to mitigate the impacts of climate change has required a change in our approach to environmental sustainability. While progress has been made in phasing out coal and greening electricity; sectors including heat, buildings, and transport are still lagging.

To meet the Climate Change Committee's Sixth Carbon Budget (2033-2037), a significant shift is required in how we heat and power our communities and get around. A range of low carbon measures, from heat pumps to energyefficient lighting and EV adoption, offer support; but climate change can not be tackled in silos.

Additionally, the pace of change varies across the UK's diverse regions and a whole system approach which is tailored to a relevant area, is the only way we can achieve positive results.

No two places share the same challenges, infrastructure, or people, so we cannot expect a singular solution to a very complex problem.

Place-based decarbonisation has emerged as a promising strategy, acknowledging the unique challenges and opportunities present in different geographical locations. It is a comprehensive approach that goes beyond mere carbon reduction, envisioning a transformation of the built environment, economic landscape, and social dynamics, tailoring measures to each region's requirements, and championing socially cost-effective solutions.

Equans has developed a holistic, sustainable regeneration model that integrates technical systems optimisation, a blended funding strategy, social impact maximisation, and legal and commercial innovation. This

Originally published on Unlock Net Zero – 05.03.24

multifaceted approach aims not only to reduce carbon emissions but also to create a lasting positive impact on the economic, environmental, and social fabric of the places and communities that we live and work in.

Our strategy is structured around four interconnected solutions to unlock the current barriers to large scale decarbonisation.

Systems Optimisation

Over 50% of the required emissions reductions rely on individuals and businesses adopting low-carbon solutions – choices influenced by local and personal decisions. The implementation of supportive infrastructure and systems significantly impacts these decisions.

While local authorities are accountable for just 2-5% of local emissions, they possess various tools to drive broader local initiatives for emission reduction and climate resilience.

To address this, our strategy focuses on optimising technical systems to provide a faster route to net zero, providing a turnkey whole system solution that is designed to provide scale and speed with consideration of a total decarbonisation solution for a place or community. By incorporating advanced technologies and sustainable practices, we aim to revolutionise energy consumption, and resource utilisation.

A significant shift is required in how we heat and power out communities and get around

OUR STRATEGY FOCUSES ON OPTIMISING TECHNICAL SYSTEMS TO PROVIDE A FASTER ROUTE TO NET ZERO, PROVIDING A TURNKEY WHOLE SYSTEM SOLUTION

From low carbon, built environment design and delivery, to decentralised renewable energy integration, the goal is to create places and communities that minimise their carbon footprint while maximising efficiency.

Blended Funding Strategy

Sustainability requires substantial investment, and our blended funding strategy is designed to ensure financial resilience and inclusivity. Central government grant funding has kickstarted decarbonisation projects throughout the UK, providing a foundation for

Originally published on Unlock Net Zero – 05.03.24

innovation and a demonstration of project viability; by blending this funding with local stakeholder capital, it injects local insights and commitment, while private finance ensures long-term viability and scalability.

This balanced mix not only diversifies risks but also fosters a collaborative ecosystem where public and private interests align for a common goal, decarbonisation with economic sustainability, to support the UK's transition to a sustainable future, and to realise the opportunities of net zero.

Social Impact Maximisation

Decarbonisation is not just on the environmental agenda; it is a social issue, and with any large transformation project, vast amounts of social impact can be delivered if harnessed correctly.

At Equans, we believe that Social Impact Maximisation (or Social Value) refers to the wider social, environmental, and economic value created by our organisation and partners directly and indirectly through its activities and day to day operations. We evaluate social value that we create by examining the net value generated across our entire business, operations, and projects for the communities in which we operate.

It is what we do (our projects), how we do it (our processes, approaches) and who we do it with (our partners, suppliers). Equans can help places to maximise the social impact of projects and programmes and leverage this value as a strategic asset to help fund an optimised system.

Our strategy places community engagement at its core. By involving local residents, businesses, and organisations, we aim to create a sense of ownership and shared responsibility. Solutions are tailored to address community needs, fostering not only environmental stewardship but also social cohesion. The goal is not just to reduce emissions but to empower communities to thrive sustainably.

Legal and Commercial Innovation

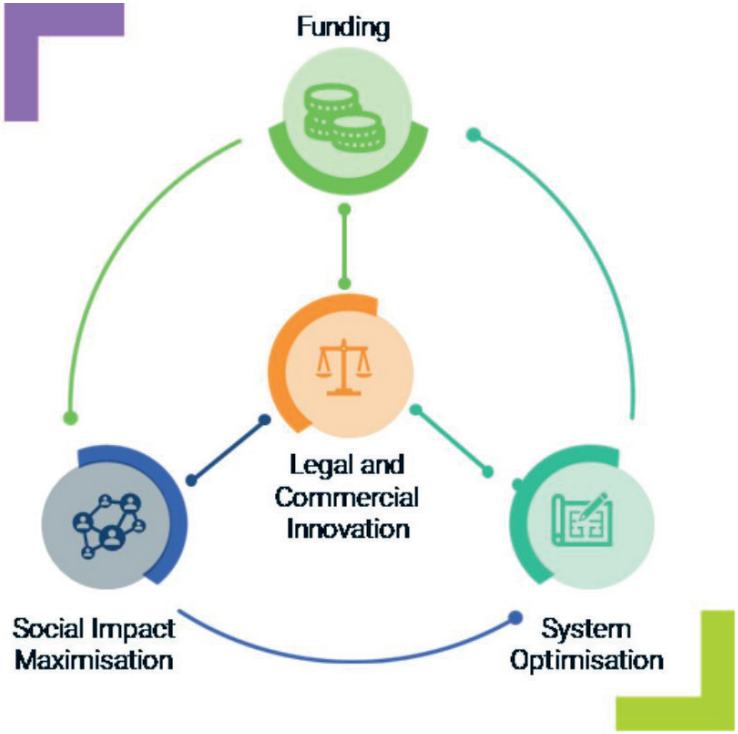
Navigating the legal and commercial landscapes is crucial for sustainable development. Our approach involves exploring and, if necessary, reshaping frameworks to support decarbonisation efforts for the benefits of the places and local communities we work in. We believe that new forms of partnership are required, within public and the private sector, with the common goal of long-term resilience that comes with investment in local sustainable approaches, creating business models that not only drive economic growth but also prioritise sustainability. By aligning legal and commercial interests, we create an environment conducive to longterm, impactful change.

What does success look like?

The success of our strategy is measured across three key dimensions – economic, environmental, and social. Economically, we anticipate job creation, new business opportunities, and enhanced economic resilience. Environmentally, the reduction in carbon emissions contributes to global climate goals, while local initiatives improve air and water quality. Socially, our strategy seeks to improve the overall well-being of communities, fostering a sense of pride and shared responsibility.

Place-based decarbonisation is not just a technical fix; it is a comprehensive, community-driven transformation. By optimising technical systems, implementing a diverse funding strategy, maximising social impact, and fostering legal and commercial innovation, we envision a future where sustainability is ingrained in the fabric of our communities. The benefits extend beyond carbon reduction, creating resilient, thriving places that serve as models for a sustainable future.

Andrew Spencer is Zero carbon solutions director at Equans UK and Ireland



The Equans sustainable regeneration model

Originally published on Unlock Net Zero – 05.03.24

VATTENFALL

Decarbonising UK cities locally

The Climate Change Act received Royal Assent in 2008[1]. It was world leading government legislation with the UK being the first country in the world to set legally binding climate change mitigation targets. This bold ambition was transformative. Back then just one fifth of our energy generation came from low carbon sources and by 2023 this figure had jumped to more than half[2].

Since 2008, the UK has made progress on decarbonising its electricity, with a clear roadmap to decarbonisation ahead. However, 85%[3] of UK homes still use gas boilers for heating, accounting for almost a fifth[4] of UK emissions.

To meet net zero by 2050, the level of transformation established for power is also required for heat. Heat networks (or 'district heating') need to grow from supplying 3% of the UK's heating to at least 20%[5].

This means rapid, at scale growth of this tried and tested technology, which has been heating homes and businesses in Europe for more than 100 years. In Sweden, for example, half of all heating is already provided by heat networks.

So, what are heat networks? They distribute heat generated in a centralised location via a network of insulated, water filled pipes to domestic and commercial buildings for space heating and hot water.

The heat we need to heat our homes is all around us, in abundance in our towns and cities and most of it is wasted. Whether it is from sewage plants, data centres or waste management facilities, this wasted, surplus heat can all be used for heat networks to create warm homes and build local energy resilience. For example, in Bristol, Vattenfall is currently providing

1. Climate Change Act 2008 (legislation.gov.uk)
2. How the UK transformed its electricity supply in just a decade | Carbon Brief
3.Findings by the CCC in 'Heat in UK Buildings Today' in 2016 and in more recent findings from 2021 Census
4. 2021 figures, quoted here Decarbonising home heating – Committee of Public Accounts (parliament.uk)
5. Department for Energy Security and Net Zero, Heat networks market overview, Updated July 2024

heating using waste heat from the adjacent floating harbour and will soon heat homes using a waste management facility in Midlothian, just south of Edinburgh. Critically, this is local energy serving local people, breaking reliance on volatile fossil fuels from overseas.

CRITICALLY, THIS IS LOCAL ENERGY SERVING LOCAL PEOPLE, BREAKING RELIANCE ON VOLATILE FOSSIL FUELS FROM OVERSEAS

With district heating, heating homes and businesses becomes a local issue. We need the right technology in the right place. In high density areas heat networks are a more efficient way of delivering heat, whilst providing financial and social benefits. For example, Vattenfall is working as part of Bristol City Leap, which is committed to delivering an estimated £61.5m of social value in Bristol. This includes the £1.5m Bristol City Leap Community Energy Fund for the development of low carbon energy initiatives.

Heat networks enable a fairer transition to net zero. As large citywide heat 'batteries', they provide flexibility to the electricity grid by releasing heat in times of high demand or storing heat to avoid the curtailment of wind power. This benefits all by reducing the total amount of grid reinforcement required and ensuring renewable power can be directed to priority sectors, like industry and transport.

While half of all UK buildings are in areas suitable for district heating, the opportunity for private investment is huge for the UK, at upwards of £80bn by 2050[6]. Along with transforming the way that homes and businesses will be heated, heat networks will create jobs, deliver social value, support urban regeneration and enhance community wellbeing. For example, in Midlothian, just south of Edinburgh, Vattenfall has supported local education partners to deliver education and careers programmes that have indirectly reached more than 17,500 in one year.

It is estimated that the heat network sector could create between 20,000 – 35,000[7] direct jobs across the UK, including design, construction, and ongoing operation. These jobs will be needed as the industry develops to meet the government target for heat networks to supply 20%[5] of the UK's heating by 2050. In the first five years in Bristol alone, Vattenfall aims to spend £50 million with the local supply chain and create over 1,000 new jobs.

To deliver all the benefits and to establish heat networks locally, developers need to work hand-in-hand with their partners and the communities they serve. Developers need to invest in the resilience, prosperity and vitality of the local area, contributing to lasting economic growth and wellbeing which supports communities. Without this there are no incentives for consumers to make the shift to a heat network and they will be more likely to procure their own low carbon heating system. This will mean a lack of coordination, creating complications for neighbouring properties and place more strain on the grid should a heat pump be selected as the alternative.

Strategic planning has been key in helping city scale heat networks flourish in Europe. Here in the UK, we need to move away from a mindset of piecemeal development to infrastructure investment that facilitates sustainable placemaking. Heat network developers are a critical delivery partner for the built environment, energy strategy and for communities.

6. UK heat networks: market overview (publishing.service.gov.uk)
7. Green Jobs Taskforce report – GOV.UK (www.gov.uk)

Stuart Allinson is Strategic director at Vattenfall Heat UK

We should not forget that while developing infrastructure is obviously essential, customers and their needs must be at the heart of our thinking. Not only must we provide the best possible service, but we must also support them on the journey to integrate heat networks as part of the community landscape. Understanding why the infrastructure is being installed is key to acceptance and buy-in. Most consumers don't think about where their heating and hot water comes from until something goes wrong, so getting them interested is often a challenge.

Increased community participation is needed to make heat networks more tangible to people across the country. Heat network infrastructure will be serving generations to come, meaning developers become an intrinsic part of the community.

Vattenfall and other heat network developers are ready to invest in this crucial infrastructure, but there are four key requests to the government to enable their rapid, at scale deployment that is needed to reach the UK's net zero target.
Firstly, a robust heat network zoning framework is critical to supporting the development of heat networks in the right location. The sector needs clarity on how existing heat networks will be treated within zoning to avoid stalling investment in current projects.

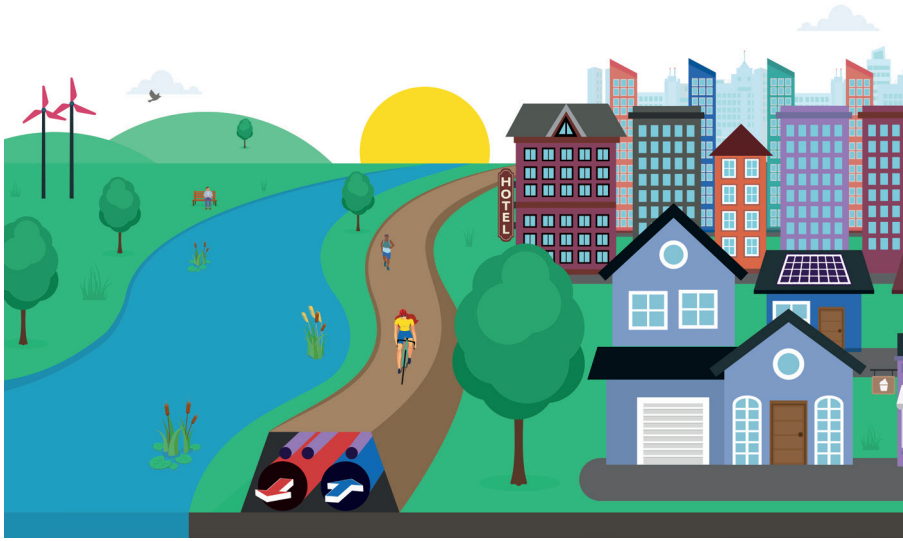
Secondly, consumers must see a clear benefit from the transition to a decarbonised energy system. Heat networks, like other low carbon electrified heating solutions, have a disadvantage when compared to gas due to additional levies that sit on electricity bills. This needs to be addressed urgently to resolve the current imbalance between electrified and gas heating.

Thirdly, there is a role for Great British Energy in delivering heat networks through providing targeted funding, recognising heat networks as a critical part of our national energy system infrastructure. Heat network developers are ready to invest to support heat decarbonisation at scale.

Finally, heat networks need fair treatment with other technologies. They are currently disadvantaged in the way they are treated by carbon counting and building standards. To boost confidence on the part of the house building sector, heat networks need a level playing field on which to compete with other low carbon technologies.

There is no doubt that decarbonising heat is going to be challenging, but the solutions are out there. Customers expect the best possible outcome and for many heat networks will be the solution. We need to build the narrative and create a shared vision for how we can decarbonise heat at scale, using the waste heat already present in our urban areas.

Stuart Allison, Strategic director, Vattenfall Heat UK



PART THREE

CASE STUDIES

A COLLECTION OF EXAMPLES OF PRACTICAL EXAMPLES OF DECARBONISATION ACTIVITY FROM ACROSS THE UK AT A CITY LEVEL AND THE IMPACT THIS IS HAVING

CONTENTS

PART FOUR // CASE STUDIES

A collection of examples of practical examples of decarbonisation activity from across the UK at a city level and the impact this is having.

CASE STUDY

COVENTRY CITY COUNCIL AND E.ON

Coventry City Council and E.ON agree UK's first strategic energy partnership

Originally published on Unlock Net Zero – 25.09.23

COVENTRY CITY COUNCIL AND E.ON

Coventry City Council has joined forces with E.ON to launch a pioneering 15-year partnership. The council says the partnership will transform the city's approach to carbon reduction whilst helping people save money and provide a boost to the local economy.

The initiative will see E.ON become the city's new Strategic Energy Partner to build a cleaner and more sustainable city and help drive a new green economy that will bring jobs and skills for generations to come.

The partnership is believed to be a first for the UK and will see the two organisations collaborate on revolutionising energy use in the city for the benefit of local communities and the wider economy.

The Council and E.ON will work together to develop ideas and projects for the benefit of Coventry residents.

Cllr Jim O'Boyle, Cabinet member for jobs, regeneration and climate change said:

"This is really exciting and completely innovative. No other city in the country is doing this. It will help Coventry move ahead with a range of projects that the Council would not have been able to achieve on its own.

"E.ON is based in Coventry and has been for almost 30 years, and it brings expertise, knowledge and skills. The partnership will also bring finance from the private sector so we will be able to quickly move forward on a range of schemes to benefit the city.

"We are already spearheading a number of major green projects, including the installation of hundreds of electric charging points – the highest number of any city outside of London. We have also developed a state-of-the art new materials recycling facility and we are well on the way to becoming the country's first all-electric bus city."

Originally published on Unlock Net Zero – 25.09.23

COVENTRY CITY COUNCIL AND E.ON

Chris Norbury, Chief executive of E.ON UK, said:

"The energy transition is a way to regenerate the local economy and we're convinced we can make a difference in and with our home city.

"This is not about designing a new vision for the future, it's about getting on and delivering Coventry's response to the climate crisis – making improvements across the city that people want and need. That could mean better insulation for homes, more energy efficient public buildings, shifting from fossil fuels to locally-produced renewable energy and, perhaps most importantly, creating thousands of good jobs."

The partnership is designed to make best use of the skills and abilities of the two organisations and Coventry's position as one of the country's industrial and creative heartlands to help transform the local economy and open up access to hundreds of millions of pounds of private sector investment.

Projects discussed for delivery by the partnership so far include the creation of a 30MW solar farm, bringing solar power into schools across the city and the decarbonisation of a number of Council vehicles and depots.

Work is also intended to include solar energy for public buildings, a push to electrify transport with greater electric vehicle charge point access for residents, and improving energy efficiency across homes and businesses.

Collaborating with a single partner over 15 years the council say will help long-term planning and see a joined-up strategic approach to decarbonisation and social projects across the city. As well as getting on with the current list of projects, the partnership will be engaging with stakeholders across the city over the coming months, including community groups, businesses, and industry leaders, to help define the outcomes the strategy needs to deliver.

The Council's Draft Climate Change Strategy and Net Zero Routemap, published earlier this year, set out a vision for the city's journey to net zero to create a more sustainable and prosperous future for local people.

Originally published on Unlock Net Zero – 25.09.23

Consultation for the Strategy saw 80% of respondents describe climate change as an important issue, saying they wanted the Council to take action – particularly around the issues of transport and home energy efficiency, which combined are the city's two biggest sources of carbon emissions.

Margot James, Chair of the Coventry climate change board, former executive chair for WMG at the University of Warwick, and former minister for culture, communications and creative industries, added:

"I'm absolutely delighted with this decision. I believe that the Council is really at the forefront of the drive to carbon zero and there are very few cities that have embraced true partnership working in the way Coventry has.

"As chair of the city's climate change board, and in my role at the University of Warwick I have worked with E.ON and have seen first-hand their commitment to the city. This new partnership will add value to a range of projects being developed in the city and will help to maximise government support – which will benefit communities, the local economy, and help in creating new jobs."

Originally published on Unlock Net Zero – 25.09.23

EDEN COMES TO LIFE IN SALFORD

Eden comes to life in Salford

The exterior of the Eden building – credit: Simon Buckley

Originally published on Unlock Net Zero – 11.04.24

EDEN COMES TO LIFE IN SALFORD

The exterior of the Eden building – credit: Simon Buckley

With the highest NABERS UK Design Reviewed Target Rating for a new-build development in the UK to date and the largest living wall in Europe, Make's Eden building for English Cities Fund's (ECF) New Bailey masterplan has reached practical completion.

Make has designed a new 12-storey office development with an upfront embodied carbon rate of 664kgCO2/m2 – compared with over 1,000kgCO2/m2 for a typical office scheme. The design team is hoping for the building to achieve a 5.5-star NABERS UK (National Australian Building Rating System) Energy Rating once the in-use data is available, with 'green lease' agreements in place to ensure that the tenants are also on board with the vision for the building.

Eden has been developed in Salford on a former derelict surface car park and is bounded by a 10-storey NCP car park to the west, plus the busy intersection of Irwell Street and Trinity Way on the north-east corner. Working closely with ECF and consultants Cundall, Make took a fabric-first approach to reduce carbon emissions, by reducing and reusing materials wherever possible.

The building has a 60:40 solid to glazing ratio and is insulated using Passivhaus principles. Air source heat pumps provide low-carbon heating, hot water and cooling, and the team avoided constructing a basement – a key move which considerably reduced embodied carbon emissions. To maintain the living wall, the design team came up with an irrigation system that uses rainwater harvested from the building's roof.

Stuart Fraser, Lead architect, said:

"There was no silver bullet design feature to help achieve Eden's low energy rating, it's all been about marginal gains and holistically integrating sustainable principles into the design, fabric and operation of the building. It was fundamental that this building is as sustainably efficient as possible throughout its life, not just on day one.

"We were so thrilled to get the 5.5-star NABERS Design Reviewed Target Rating, which is such a simple and robust system for office developers

Originally published on Unlock Net Zero – 11.04.24

The facade at the Eden building – credit: Simon Buckley

to really know what their buildings can achieve operationally. Alongside that, we've exceeded the UK Green Buildings Council's 2030–2050 office base-build energy performance target, achieving 43kWh/m2/yr – a high target when compared with the NABERS targets of 55kWh/m2/yr for 5.5 stars and 35kWh/m2/yr for 6 stars – and we're set to achieve BREEAM Outstanding and WELL Platinum."

Eden's most noticeable design feature is its living facade, which covers over 3,300m2 of the building with 32 species of evergreen and perennial planting. Designed in collaboration with living wall specialists Viritopia (formerly ANS Global), this major piece of green infrastructure – the largest living wall in Europe at the time of completion – makes a distinctive contribution to a community short on green spaces. From levels 1–11, each elevation features the living wall, with the only exception being the side core on the west of the building, adjacent to the multi-storey car park.

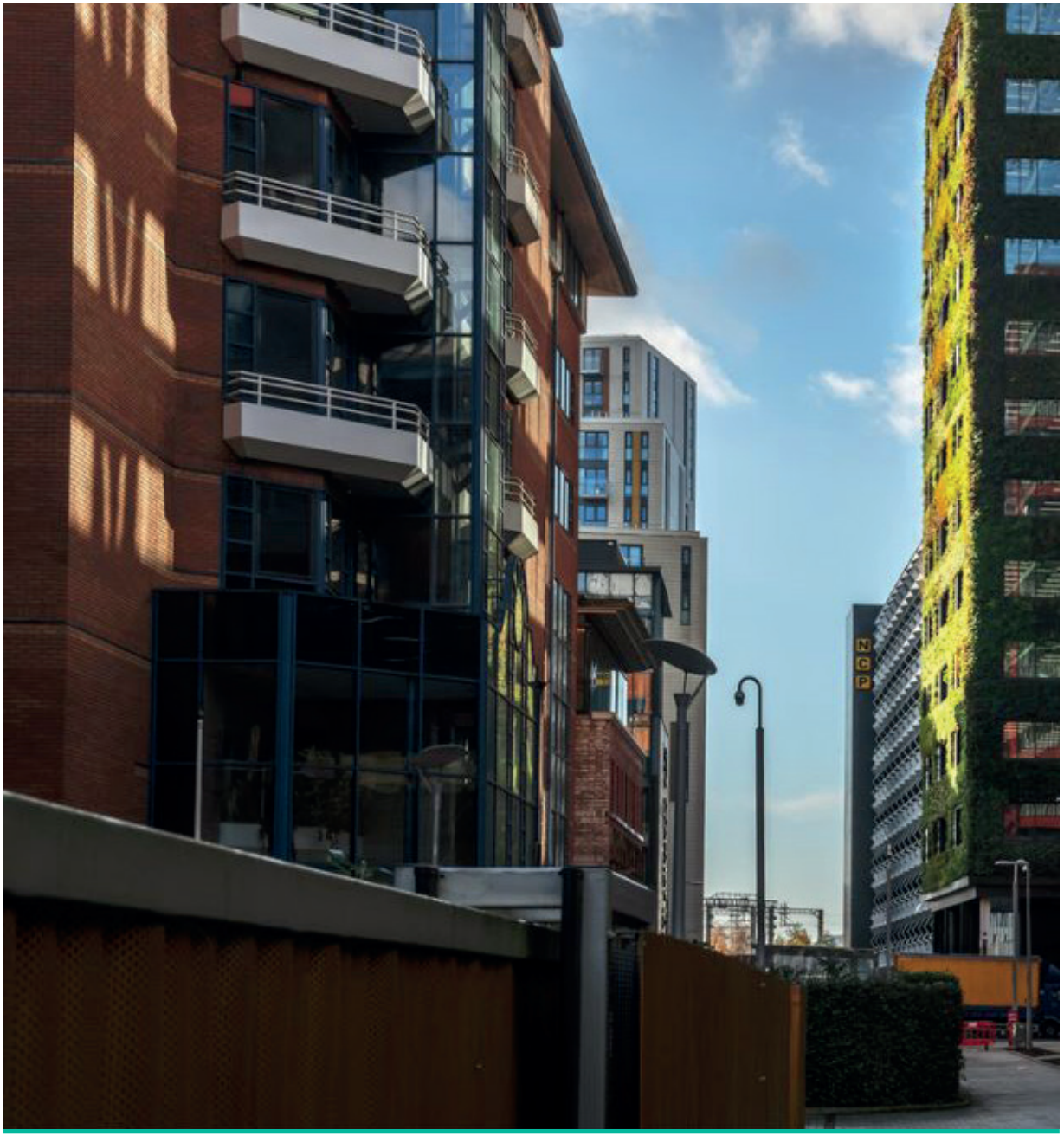
With over 350,000 plants, the green elevations make a dramatic and unusual addition to the urban realm, easily identifiable when glimpsed obliquely from a distance and within the boundaries of the New Bailey area itself. It adds important urban greening to the local environment and removes air pollutants, lowers urban temperatures and improves biodiversity in Salford.

By providing biophilic health and wellbeing benefits to the occupiers, the facade makes an important contribution to ECF's aim to embrace the WELL Building Standard principles, which seek to improve human health and wellbeing through design. Large windows are also incorporated into the side core to draw in more natural light and provide a visual connection to the living wall.

The building's massing was designed with a view to maximising the internal office space over a small building footprint. The extruded side core facilitates large open-plan floorplates from levels 1–11 with uninterrupted internal views, while the rounded north-east corner mirrors the curvature of the Irwell Street gateway, addressing the geometry of this primary route and anchoring Eden as a city marker for this key junction.

Originally published on Unlock Net Zero – 11.04.24

EDEN COMES TO LIFE IN SALFORD



A streetview of the Eden building – credit: Simon Buckley

The ground floor is set back by 2m, creating a pedestrian-friendly colonnade space and reducing the building massing at the public level. The development has triggered important traffic-calming measures for Irwell Street, reducing the carriageways to accommodate better cycling infrastructure and give more prominence to pedestrians. New rain gardens have also been integrated within the landscaping to intercept surface run-off, channelling rainwater into the drainage system at a reduced rate.

Internally, the double-height ground floor accommodates the building reception and a publicly accessible retail unit. Over 150 cycle spaces have also been incorporated on the ground floor, along with quality changing amenities.

The fully glazed ground floor includes an independently run café open to occupiers and the public. Upstairs on the mezzanine level, a wellness suite provides building tenants with treatment rooms and a flexible, bookable studio space.

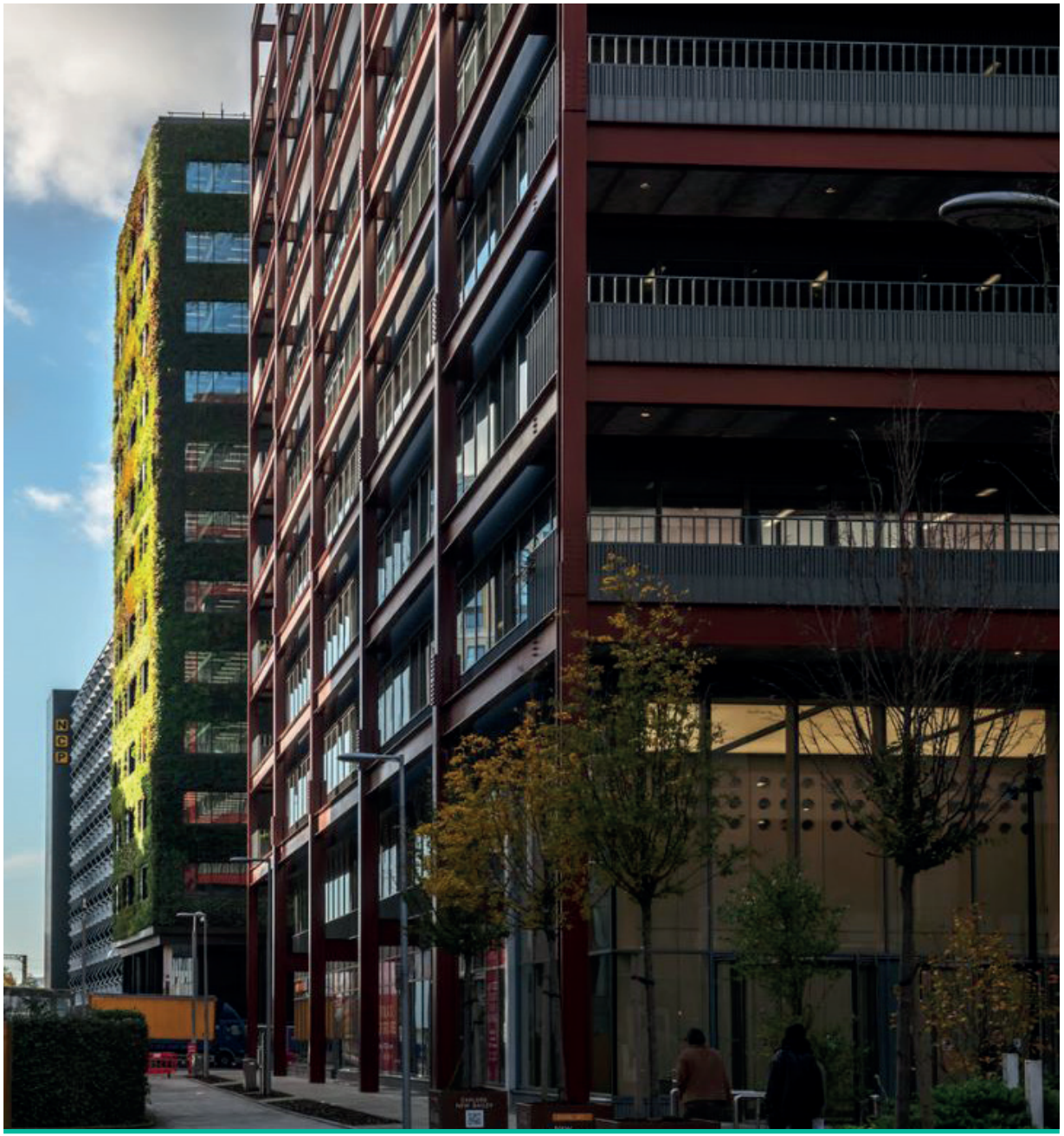
Make has taken a utilitarian approach with the internal finishes, exposing soffits, using reclaimed raised access flooring on the office floorplates, and reclaimed sports flooring from the University of Central Lancashire for the lobby and circulation areas. A south-facing roof terrace at level 12 provides outdoor space for tenants, with views across the River Irwell.

Phil Marsden, Managing director, North West for Muse, commented:

"Watching Eden emerge on Salford's skyline over the last two years has been an incredible journey. What started as an ambition to build the UK's most sustainable and environmentally considerate commercial building became so much more. We take our learnings from Eden onto our future projects where we strive to do even better. Everyone involved in Eden should be incredibly proud."

Originally published on Unlock Net Zero – 11.04.24

EDEN COMES TO LIFE IN SALFORD



A streetview of the Eden building – credit: Simon Buckley

Simon Wyatt, Sustainability partner at Cundall, said:

"When we embarked on this project, the aspiration to make Eden ultra-sustainable with ambitious energy and embodied carbon targets was out of the ordinary. We spent a lot of time working with Make to make sure it was aligned with energy targets and included methodology for how they would be achieved. We also incorporated Muse's aspirations to meet ESG targets around biodiversity net gain, health and wellbeing, social value, and of course, net zero carbon. The result as we come to completion is a best-in-class development that will be the 'greenprint' for the next generation of net zero buildings."

Joseph Lazell, Director at Atelier Ten added:

''We have thoroughly enjoyed collaborating with a highly talented team to deliver an innovative and highly-efficient services strategy, which not only minimises carbon emissions but also prioritises the health and wellbeing of occupants. Eden showcases commitment to sustainable building practices, setting a new standard for environmentally conscious office space across the UK and we are proud to have played a key role in its success.''

Originally published on Unlock Net Zero – 11.04.24

CASE STUDY

THAMES ELECTRIFICATION

New ambitious electricity project to accelerate decarbonisation of the River Thames

Originally published on Unlock Net Zero – 10.04.24

THAMES ELECTRIFICATION

The Electric Thames project, a collaboration between UK Power Networks, LCP Delta, and Marine Zero, is assessing the viability of using electric vessels to feed stored electricity back into the capital's energy network, accelerating the transition to net zero.

Using a principle similar to night storage heaters, battery-powered vessels on the Thames could store green energy when it is cheap to do so and feed it back to the grid during peak electricity hours. This approach could help increase the capital's flexible energy capacity and reduce peak electricity demand.

The project, which is in its initial 'discovery' or scoping phase, supports the Port of London Authority's transition to net zero emissions and London Mayor Sadiq Khan's pathway for London to be Net Zero Carbon by 2030. The discovery phase of the project, which is funded via the Ofgem Strategic Innovation Fund, will conclude at the end of May 2024.

Thames vessel and quay operators will be surveyed to identify and map out their needs. This will allow power suppliers to plan and complete any works needed to facilitate the move to cleaner vessel and river operations along the River Thames.

Andy Hurley, Director at Marine Zero, said:

"Electric Thames isn't just about achieving zero emissions on our capital's river – it is even more exciting and significant than that. Along with our project partners at LCP Delta and UK Power Networks, we are developing a completely new approach to increasing energy flexibility by developing new income streams new and flexible solutions for vessel and quay operators.

"We are delighted that Marine Zero has been selected to support the discovery phase of the project using our maritime experience and intelligence, and we look forward to engaging with operators along the Thames over the coming weeks."

Originally published on Unlock Net Zero – 10.04.24

Luca Grella, UK Power Networks

Luca Grella, Head of innovation at UK Power Networks, said:

"This is a first-of-its-kind project in the UK, and one that is operating at the forefront of energy innovation. Tapping into this potential will not only help us create a cleaner Thames for everyone but will also give us an additional supply of flexible, green energy which will help our transition to a decarbonised energy system.

"We're thrilled to be leading the way in this space and are also looking forward to seeing how this approach could be scaled to other rivers across the country."

Most of the boats, quaysides, and ports operating on the Thames – which supports a busy freight sector as well as 8-million passenger trips per year – currently rely on fossil fuels. This is starting to change, however, as the river's economy decarbonises in response to climate change and net zero ambitions.

But as increasing numbers of Thames vessel and quayside operators move to electric power sources, there is limited understanding about how the shift will affect the capital's power network and peak power demands.

The Electric Thames project team will consult quay owners, vessel operators, and other stakeholders in order to understand the opportunities for investing in electrification and a sustainable route to revenue.

Phillip Twiddy, Senior consultant, LCP Delta, commented:

"It's fantastic to be involved in such a strategic project that could deliver some real benefits. The project aims to help the marine sector lower their emissions yet also have certainty in their energy source. It will also help to accelerate the energy transition."

Originally published on Unlock Net Zero – 10.04.24

THAMES ELECTRIFICATION

The outcomes of the project could shape a new whole-system planning framework for the nation's rivers, canals, and waterways, offering insights for decarbonisation and electrification that could be replicated across the UK.

Electric Thames has been supported by the Strategic Innovation Fund (SIF). Delivered in partnership with Innovate UK, the SIF programme taps into the best of UK and international innovation and aims to align with other public innovation funding for the benefit of customers across the United Kingdom.

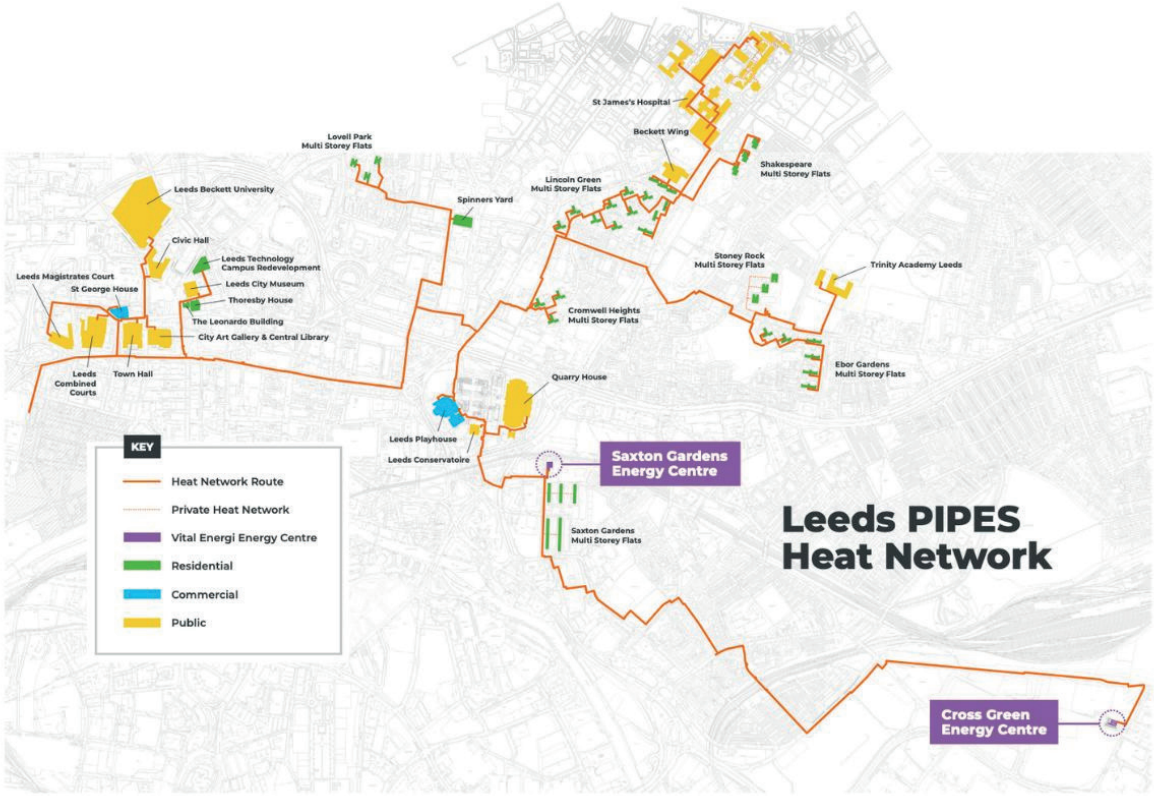
Originally published on Unlock Net Zero – 10.04.24

CASE STUDY

LEEDS PIPES

Hundreds more Leeds households to be connected to a low carbon heat network

Originally published on Unlock Net Zero – 18.12.23



A map of the Leeds PIPES district heating network at December 2023

Three tower blocks are set to become the latest to connect to the Leeds PIPES district heating network.

259 council properties in Lovell Park Heights, Lovell Park Grange, and Lovell Park Towers will be set up to receive heat from the network within the next six months.

Private leaseholders of properties in the Little London tower blocks will also be able to benefit from the network if they opt to connect their homes to the system.

Households that are benefiting from the upgrade can expect to see the cost of heating their home reduce using Leeds PIPES, compared to their existing heating systems, and will also enjoy better reliability and control.

Meanwhile, Leeds Conservatoire (formerly Leeds College of Music) has become the thirteenth non-residential customer to have signed a contract to connect.

The new connections are expected to reduce the city's annual carbon footprint by 279 tonnes, supporting efforts to end the city's contribution to climate change by transitioning to 'net zero' emissions.

By using heat and energy recovered from non-recyclable waste at the Recycling and Energy Recovery Facility (RERF) to provide warmth and hot water to buildings in the city, the Leeds PIPES district heating project is helping businesses and residents to move away from costly fossil-fuel powered heating systems.

The council estimates that the network, delivered in partnership with Vital Energi, is helping existing customers to collectively save nearly half a million pounds (£490,000) in reduced energy costs this year alone.

The £62 million network continues to expand and is regularly connecting to new buildings. Leonardo & Thoresby student accommodation buildings and St James's Hospital are the latest buildings to have begun taking heat from the scheme.

Last year, the network of insulated underground pipes supplied 22,029

Originally published on Unlock Net Zero – 18.12.23

megawatt-hours of heating in total and helped reduce the city's carbon footprint by 3,975 tonnes.

Councillor Mohammed Rafique, Executive member for climate, energy, environment & green space and Councillor Jessica Lennox, Executive member for housing, said:

"We are both delighted that hundreds more residents will soon be paying significantly less to heat their homes thanks to this latest expansion of the Leeds PIPES network.

"Residents in the Lovell Park estate will join the thousands of council tenants and hundreds of private sector renters already benefiting.

"Too many families in our city struggle to pay their energy bills—in part because the UK's homes are some of the least efficient and most reliant on costly fossil fuel gas in Europe.

"Whether it's by connecting homes to affordable low carbon heating like Leeds PIPES, or investing in energy-saving measures like insulation, this council is committed to helping households by making our homes greener and fit for the future."

Mike Cooke, Vital Energi's Managing director (North and Scotland), said:

"Leeds PIPES continues to be the UK's landmark heat network and we're delighted to announce these new connections, which means more people will benefit from low-carbon, cheaper heat to businesses and residents, making a real difference in their day-to-day lives.

"We look forward to welcoming another 259 homes and Leeds Conservatoire to the fastest growing heat network and will work closely with the council to ensure they have the best possible customer experience."

Originally published on Unlock Net Zero – 18.12.23

CASE STUDY

FORTEM & HULL CITY COUNCIL

Fortem & Hull City Council – Better Together

Originally published on Unlock Net Zero – 11.12.23

FORTEM AND HULL CITY COUNCIL

The resident experience sat at the heart of the project

As Fortem near the end of an eight-year project, to improve energy efficiency, lower fuel poverty and support the decarbonisation agenda for Hull City Council, Julian Wright, Operations manager at Fortem and Ben Hanson, Head of strategy, market intervention and growth, Hull City Council who were behind this programme reflect on what made it work so successfully.

Background

As part of the Councils Affordable Warmth Strategy, Fortem has delivered improvements to over 2000 homes in the area. Fortem upgraded resident's homes with external wall insulation, new roofs, windows, doors, rendering, and loft insulation. Where necessary, they have also made improvements to access and egress including steps and ramps, plus structural elements timber and steelwork. Making homes look better and more importantly feel warmer, giving a new lease of life to these properties and making them fit for another 25 years' service.

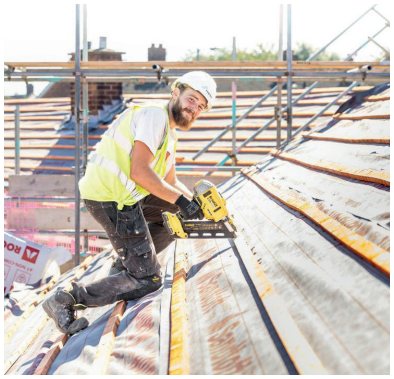
This programme of works, which Fortem are delivering for social housing properties across a range of non-traditional housing styles with Hull City Council as the client, marks a total investment of over £50 million with all the works being delivered to the relevant building standards including PAS 2030 and PAS 2035 standards. Residents of the newly refurbished properties have reported they have already seen their heating bills reduce and can feel they live in warmer homes.

A good contract stays in the drawer

It's that partnership that has made the project such a success. Ben Hansen commented: "The contract has partnership built in. The long-term nature encourages partnership and as both parties are on a level footing it enables both parties to have a stake in the success of the project." Ben went on to say that "This is a model contract, which I'd like to replicate in other areas." Julian Wright agreed that this is a model contract but went further. He said: "Put the contract to one side for a moment and this is about the people involved. Every person on this contract regardless of if that's from Hull City Council, Fortem or their supply chain partners all want to work together and is asking how they can help" he explained. "This attitude goes all the way to the top of every organisation involved, everyone is trying to create a better service for the residents, working together with shared goals as one team."

Originally published on Unlock Net Zero – 11.12.23

The work was part of the councils Affordable Warmth Strategy



The project team all displayed they wanted to work in partnership

One Team

How have residents received the project? “Resident feedback, is that they are very satisfied with the work. They have also commented that they are able to speak to whoever is in front of them and it feels like talking to one team, it really feels like a very solid partnership.” Ben reported. “There is no client / contractor divide”. Julian explained from Fortem’s point of view “There’s a complete joint approach, we go and visit residents together and as a result of our residents engagement compliments outweigh the complaints”. Julian continued “I’m not saying we get it right all the time but where we have a complaint, there’s no finger pointing, we resolve it as a team, and we learn from it. It’s fair to say that residents are at the heart of everything we do, and our number one priority is the customer experience”.

Julian talked about the quality of the work that Fortem has provided for Hull, commenting “I can’t tell you how proud I feel when we complete the work and walk away from these properties. I’m so proud of the team and our contractors, leaving the properties in a state of repair that keeps the tenants warm, safe, and secure for the next 25 years.” Ben added “During the lifetime of the partnership, it’s fair to say there have been some tricky non-traditional properties that have been improved. Properties loved by the tenants which were technically difficult. Properties that were potential demolition jobs have now found another 25 years of use through works completed by the partnership. Throughout the project we have all worked to drive costs down and the quality up.” Ben continued “We’ve always been in the business of creating places for people to raise families and grow old. It’s driven from a health and wellbeing position. Nowhere is this more evident than creating energy efficient homes, so people are warm, happy and healthy.” Julian added “That’s something you can walk away from and be happy with. We always strive for improvement”. Ben commented that, “The contract stays in the background, everyone involved is asking, what is the right thing to do? This works because Fortem is listening and provide an agile and immediate response.” Julian shared that this is because ‘our subcontractors are very responsive, it’s a culture instilled deep within the team and wider partnerships”.

Collaborative Approach

“It’s not just about Fortem and Hull City Council, it’s about the contractors and residents and everybody involved working together having a relationship. I’m so lucky that that Hull have the same attitude and want to work in partnership.” Julian said. Ben added “It’s a very joint effort, even going to talk to the elected members together to discuss the schemes. Some of the people involved in this project are our best people.” Julian stated, “There are hundreds of little things that everyone does, we’ve only really spoken about the big things but it’s all the little things that everyone just does that makes this work. I can’t speak highly enough of everyone involved.”

Final thoughts

Ben said that throughout the contract, “The values and behaviours align across all the companies involved.” Julian responded with “Everyone cares, if they don’t, I don’t want them on this job”.

Originally published on Unlock Net Zero – 11.12.23

CASE STUDY

OFGEM REGIONAL PLANNING:

Ofgem to create regional energy planning roles across Great Britain

Originally published on Unlock Net Zero – 20.11.23

OFGEM REGIONAL PLANNING

Ofgem has announced it will create regional energy planning roles across Great Britain to improve local energy planning and speed up the transition to net zero.

The Regional Energy Strategic Planners (RESPs) will work with organisations at a local level including local government and gas and electricity networks, to improve understanding of the infrastructure needed in different parts of the country and attract investment for projects.

This new approach to energy planning will see RESPs create clear plans for how local energy systems need to be developed to reach net zero, considering both the national targets set by government, and the local needs and most appropriate approach in each area.

The Future Systems Operator (FSO), the new body that will bring together the planning for the electricity and gas systems, will be responsible for implementing up to 13 RESPs across Great Britain.

As part of a package of measures on how local energy systems are planned and operated, Ofgem will also introduce a new market facilitator function that will delivering joined up flexibility markets. The market facilitator will be responsible for market coordination, implementation, monitoring, and strategic leadership. Ofgem will soon be publishing a consultation looking at which entity should deliver this new function.

The new reforms are part of Ofgem's wider agenda, together with the Department for Energy Security and Net Zero (DESNZ), to create a more decentralised, decarbonised energy system, which promotes more flexible and efficient energy use.

The decisions follow the regulator's review into the effectiveness of institutional and governance arrangements at a regional level to support delivery of net zero at least cost, and the case for alternative approaches. Ofgem also consulted on the proposals earlier this year.

In November, Ofgem's Chief executive, Jonathan Brearley, will meet with metro mayors from across England in a roundtable discussion to share best practice in the regions, and to consult mayors on how Ofgem can enhance the impact of its work at the local and regional level. By working with local and regional leaders Ofgem aims to ensure local views, expertise and priorities are at the forefront of planning decisions. Discussions will also help to shape the future of the RESP roles.

Mr Brearley said:

"The creation of the Future System Operator (FSO) gives us a once in generation opportunity to design the energy system we need to get us to net zero. We're already working on future energy network planning on a national level and creating Regional Energy Strategic Planners (RESPs) means this can also now happen at a regional level. Ofgem looks forward to working with the System Operator and local leaders to create a joined-up roadmap leading to clean, flexible, and aligned future energy systems across Great Britain."

Originally published on Unlock Net Zero – 20.11.23

CASE STUDY

BRISTOL INVESTMENT

Funding secured to accelerate climate investment in Bristol and the West of England

Originally published on Unlock Net Zero – 17.01.24

BRISTOL INVESTMENT

Bristol has secured £5 million of funding to help deliver progress towards a more sustainable and inclusive city.

The funding will be used to work with three communities in Bristol to plan the climate action that they want in their neighbourhoods and how to secure money to take these actions forward. This could include improving the energy efficiency of homes, generating more renewable energy locally, reducing waste or helping people walk and cycle more. Each community will be invited to take part when the project starts in January.

The funding will also be used to produce a strategic climate investment plan for the West of England to help direct investment into a suite of projects that will reduce carbon emissions. It also includes targeted support for small businesses and people wanting to work on these projects – creating jobs and providing training for local people.

Marvin Rees, Mayor of Bristol said:

"This project will put communities at the heart of climate action planning, building on the good work already taking place with communities around the city. It will enable communities, councils and companies to work together to plan and invest. The project also includes support for local small and medium sized business allowing them to grow their business, create new jobs and train more local people from a wide range of backgrounds. This is the Just Transition in practice, putting communities at the heart of climate action planning and creating good low carbon jobs."

The project will be a contribution towards Bristol's One City Climate Strategy which aims for a carbon neutral city by 2030. Bristol City Council is accelerating progress towards carbon neutrality with Bristol City Leap which plans some £630 million of investment in clean energy by 2028, reducing emissions by 150,000 tonnes and creating around 1,000 jobs. This new project supports and builds upon Bristol City Leap making communities' needs central to climate action.

Originally published on Unlock Net Zero – 17.01.24

BRISTOL INVESTMENT

Councillor Kye Dudd, Cabinet member for housing services and energy said:

"We need large amounts of investment in our homes, buildings and energy infrastructure to replace the fossil fuel technology which we have come to rely on for heat, power and getting around. Achieving this will be complex and we need good plans, developed by and with our communities, to be able to attract investment and deliver improvements to our city. I am delighted that Innovate UK has recognised Bristol's pioneering work on climate change and entrusted us with this funding to create a model which can be used right across the UK."

The project will be led by Bristol City Council working with: Bristol and Bath Regional Capital, Bristol Energy Network, Bristol Green Capital Partnership, the Centre for Sustainable Energy, City Leap, National Grid Electricity Distribution, Bath and North East Somerset Council North Somerset Council, South Gloucestershire Council and West of England Combined Authority. It builds on successful projects undertaken by these partners and has been developed in close collaboration with them.

The project started on 29 January 2024 and will run until 30 October 2025

Originally published on Unlock Net Zero – 17.01.24

CASE STUDY

IES AND MOTT MACDONALD TO LEAD ON COUNTRY'S LARGEST LOCAL AREA ENERGY PLAN

IES and Mott MacDonald to lead on country's largest local area energy plan

Originally published on Unlock Net Zero – 05.06.24

EAST MIDLANDS LOCAL AREA ENERGY PLAN

The plan will set out priority areas for different elements of the region's energy system

IES are to work alongside Mott MacDonald on a scheme to meet Derbyshire and Nottinghamshire's net zero targets, after the newly formed East Midlands Combined County Authority (EMCCA) gave its backing to the region's Local Area Energy Plan (LAEP).

The initiative, which will be the largest of its kind in England, will see a data-driven, net zero 'action plan' rolled out across the region, with the aim of delivering an effective, on-time and value for money approach to climate resilience, tailored to the need of local communities.

IES will bring their expertise in energy modelling and decarbonisation of buildings at scale, alongside their proprietary digital twin technology, to support the development of the LAEP. The technology will enable accurate simulation of the energy and carbon performance of the region's buildings, providing a collaborative platform through which to assess the impact of various net-zero interventions and monitor and communicate progress of the plan over time.

The plan will set out priority areas for different elements of the region's energy system and identify the areas where specific technologies – such as heat pumps, EV charging and insulation schemes – would be most effectively installed.

The LAEP – which has been designed and developed by a number of local authorities across the region, alongside the Midlands Net Zero Hub – will be supported by EMCCA, which is funding its implementation over the next two years.

Michael Gallagher, Director of environment & sustainability at Nottingham City Council (interim) and senior responsible officer Midlands Net Zero Hub, said:

"The development of the largest Local Area Energy Plan in England, supported by the Midlands Net Zero Hub, has been a brilliant collaborative effort across all local authorities in Nottinghamshire and Derbyshire.

"We are excited to be working with Mott MacDonald and IES to develop a joined-up plan that can help the region identify a cost-efficient route to net zero for the region that attracts investment, enables projects and supports economic growth."

Wayne Bexton, Director of green growth, investment and assets at Nottinghamshire County Council, said:

"The appointment of a LAEP provider for Derbyshire and Nottinghamshire is a significant milestone which will enable the new combined county authority to detail a clear, innovative path to achieving net zero.

"The work will ensure we can harness further investment into the region, creating new jobs and opportunities for training in low carbon industries.

"Our region has an unparalleled opportunity to lead for the UK on this agenda, and this is an exciting next step on that journey."

Craig McKendrick, Public sector lead at IES, adds:

"We are delighted to be working alongside Mott MacDonald, Midlands Net Zero Hub and the local authorities across Derbyshire and Nottinghamshire to help bring their net zero ambitions to fruition.

"Decarbonisation, particularly on this scale, is no easy feat. However, digital twin technologies, such as ours, can play a vital role in helping local authorities de-risk their strategies, so that they can move forward with confidence in meeting their energy and carbon reduction goals. We look forward to getting started and seeing the impact this project will have in furthering the UK's net-zero transition."

The Local Area Energy Plan, once implemented, will be the largest of its kind in England.

Originally published on Unlock Net Zero – 05.06.24

CLARION – THE COCOA WORKS

The Cocoa Works: A Case Study in Urban Regeneration and Net Zero Transition

CLARION – THE COCOA WORKS

The Cocoa Works project, developed by Latimer (the development arm of Clarion Housing Group), stands as a landmark example of urban regeneration and placemaking in York.

This ambitious £89.7 million redevelopment has breathed new life into the former Rowntree's Factory on Haxby Road in York, a historic site renowned for its role in producing iconic confectionery brands. Today, the revitalised site provides 279 apartments, 30% of which are available on affordable tenures. This level of provision significantly exceeds the original requirement of just 5 affordable homes for the site, highlighting Latimer's commitment to addressing affordable housing needs and supporting sustainable communities. This project has transformed a once derelict factory into a thriving community hub. In an adjacent site, Clarion is also redeveloping the former Rowntree's factory buildings into a further 302 homes in a development called Cocoa Gardens, with a further 36% of these available through affordable options like shared ownership and social rent. This level of provision further goes well beyond the affordable requirement that was originally set for the site.

Rejuvenating York through Placemaking and Social Value

The approach to regenerating the Cocoa Works site reflects a deep understanding of York's heritage and the importance of social value. Established in the 1890s, the Rowntree's Factory played a significant role in the city's cultural and economic fabric, employing thousands of workers and supporting the local economy. After production ceased in 2006, the site remained vacant for over a decade, a stark reminder of the city's industrial past.

Rather than opting for demolition and new construction, Clarion chose to preserve and honour this cultural asset. This decision was not only a commitment to heritage conservation but also a strategic move to ensure that the project delivered meaningful social value, reduced embodied carbon, as well as much needed modern homes. By retaining and redeveloping the factory, Clarion has woven the legacy of the Rowntree family, who were renowned for their philanthropic contributions, into the fabric of the new development. This aligns with Clarion's own social mission, which prioritises the creation of affordable housing and community engagement.

CLARION – THE COCOA WORKS

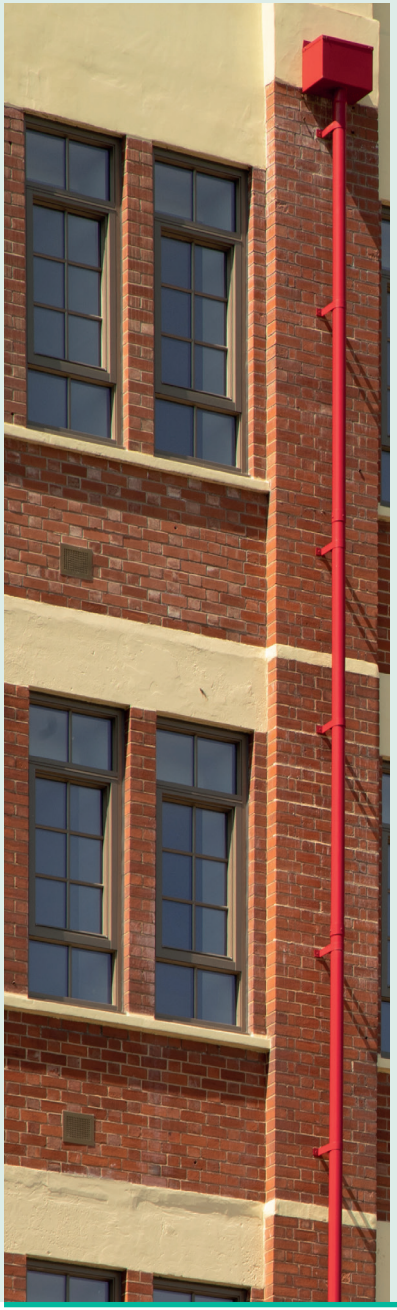
A key element of the project's social value lies in its provision of affordable housing. Clarion has ensured that 30% of the apartments are available through shared ownership schemes, making homeownership more accessible in a region where affordability is a significant challenge. The adjacent Cocoa Gardens development will provide a further 36% affordable homes through shared ownership and for social rent. This focus on social inclusivity is particularly important in York, where housing demand often outstrips supply, and rising property prices make it difficult for first-time buyers to enter the market.

The transformation of The Cocoa Works prioritises placemaking, for creating a vibrant, connected community within York. With new footpaths and cycle routes linking the site to the wider area, promoting active travel to the city centre, railway station, and countryside, while enhancing connections with the broader York community. Building on this vision, the adjacent Cocoa Gardens development also introduces more new homes, communal area, green spaces, and public squares, providing inviting areas for social interaction and leisure. Together, The Cocoa Works and Cocoa Gardens developments enhance the public realm, improve access to transport and natural spaces, and foster a healthier, more sustainable community.

A Sustainability-Led Approach to Regeneration

The Cocoa Works redevelopment also demonstrates Clarion's commitment to sustainability and the transition to net zero. While many refurbishments of heritage buildings are exempt from meeting stringent energy performance standards, Clarion went above and beyond to enhance the building's energy efficiency. The challenge of retrofitting an over 100-year-old structure to meet modern sustainability standards required innovative solutions.

To improve energy performance, Clarion installed additional insulation in the floors and walls of the apartments and introduced air source heat pumps and wastewater heat recovery systems. These design interventions helped an older building achieve much greater levels of energy efficiency and delivers decarbonised heat and hot water to residents. These sustainability measures not only reduce the building's carbon footprint but also help lower energy bills for residents, further enhancing the social value of the project by making living costs more manageable for low-income households. Crucially, these interventions



followed our aspirations to ensure that all new homes delivered will be fossil fuel free from 2025 ensuring they are decarbonised, fit for the future and protect residents from fuel poverty.

The preservation of the building's façade was another important sustainability consideration. Rather than replacing the damaged brickwork, Clarion opted to repair and restore the original materials. This involved carefully matching new bricks with the original ones, ensuring the building's historical appearance was maintained while reducing the environmental impact of producing and transporting new materials.

Lessons Learned from the Cocoa Works

The Cocoa Works project has provided valuable lessons for Clarion's broader regeneration efforts. One key takeaway is the importance of collaboration and community engagement in delivering successful placemaking projects. Throughout the redevelopment, Clarion worked closely with local stakeholders, including schools and community organisations, to ensure the project aligned with the needs and aspirations of the wider community. For example, Clarion has donated resources to local schools and supported community initiatives like the St Nicks nature reserve. These efforts have helped foster a sense of ownership and pride in the development, contributing to its long-term success.

The project also highlighted the challenges of retrofitting heritage buildings to meet modern standards, particularly in terms of sustainability. Clarion's experience at the Cocoa Works has informed its approach to future regeneration projects, reinforcing the need for early-stage technical assessments and innovative design solutions. By addressing structural issues and integrating modern sustainability technologies, Clarion has set a new standard for heritage-led regeneration that balances preservation with the demands of the net zero agenda.

Influencing Clarion's Future Regeneration Work

The success of the Cocoa Works has influenced Clarion's approach to other regeneration projects, particularly those that involve heritage buildings. The decision to retain and restore rather than demolish has become a guiding principle, recognising that these buildings can serve as focal points for community identity and continuity while contributing to environmental sustainability. The project's emphasis on social value, through providing affordable housing and community outreach, also continues to shape Clarion's regeneration strategy.

In addition, the technical challenges encountered during the Cocoa Works redevelopment have informed Clarion's approach to future projects. The need for innovative construction techniques, such as mini-piling rigs for indoor foundations and the use of Cathodic protection for steelwork, has equipped Clarion with valuable expertise that can be applied to other complex refurbishments. This knowledge will be crucial as the organisation continues to balance the demands of heritage conservation with the need for energy-efficient, sustainable housing.

Conclusion

The Cocoa Works redevelopment exemplifies how urban regeneration can deliver tangible social value while supporting the transition to net zero. Clarion's approach to preserving York's industrial heritage, providing affordable housing, and enhancing the building's sustainability performance has revitalised a key part of the city. The lessons learned from this project will inform Clarion's future regeneration efforts, ensuring that the organisation continues to deliver high-quality, socially inclusive, and environmentally sustainable developments across the UK.

CASE STUDY

SPACEHIVE

Community-driven, Crowdfunded climate action: Unlocking placemaking and net zero progress in UK cities

Originally published on Unlock Net Zero – 05.03.24

Over 75% of Spachive campaigns are backed by at least one local business alongside the support of the local community

Our cities face unprecedented challenges. Demand for housing strains existing resources, regeneration efforts must consider social equality, and a sense of place can sometimes feel absent in the rush for development. Simultaneously the urgency of the climate crisis calls for widespread adoption of low-carbon lifestyles and net zero approaches.

While cities can feel like overwhelming systems, a unique power lies dormant within them: the drive and ingenuity of their communities. At Spacehive, a community fundraising platform that allows communities to fund their own ideas for local growth via partnerships with local authorities and supportive businesses, we are seeing remarkable things happen when the right resources, structures, and a dash of inspiration are put in place. Communities across the UK and Ireland have come alive to spearhead exciting low-carbon projects, simultaneously strengthening the fabric of their neighbourhoods and contributing to ambitious climate goals.

Accelerating net zero with community, councils, & business

Cities thrive on diversity, and that diversity brings immense potential to tackle social and environmental problems. Community groups offer grassroots knowledge, untapped energy, and the ability to identify issues often invisible to traditional decision-makers. But a gap can exist between their great ideas and the resources needed to turn these visions into reality. That's where community fundraising makes a tangible difference.

Key to this process is the collaboration with local authorities and the business community. With net zero embedded into their strategic plans and dedicated funds to support initiatives that facilitate them, local authorities can catalyse community action. Developed into fundraising campaigns with the help of Spacehive, these projects can attract the support of the local private sector, aligning with their Environmental, Social, and Governance (ESG) commitments. Businesses can contribute to projects that resonate with their values, gaining positive brand association and community goodwill. At Spacehive, over 75% of campaigns are backed by at least one local business alongside the support of the local community.
This collaborative approach leverages diverse resources, accelerating progress towards local sustainability at the same time as building stronger communities.

Originally published on Unlock Net Zero – 05.03.24

Children involved in the Byker Blooms project in Newcastle

Here are some recent examples from Spacehive's platform that illustrate just some of the creative ways that communities are coming together to assist the drive towards net zero:

Revitalising Green Spaces

In Newcastle, residents rallied to transform a rundown alleyway into a vibrant pocket park dubbed 'Byker Blooms'. Funds raised by the crowd were used to purchase native plants, planters, and benches, all centered around sustainability. The project became a catalyst for neighbourhood connection and showcased how low-carbon interventions can improve liveability and wellbeing.

Community-Owned Renewable Energy

The residents of Ampney Crucis in the Cotswolds came together to fund solar panels for their village hall. This project is reducing the hall's energy costs, providing a return on investment and demonstrating the potential of community ownership in the transition to renewable energy.

Restoring Natural Assets for Climate Resilience

In West London, "Rejuvenate Chiswick Eyot" is working to restore a Thames island back to ecological health. Through scrub clearance, tree planting, and habitat creation, residents are not only enhancing biodiversity but also strengthening the area's natural defences against climate impacts like flooding and heat stress.

Unlocking local climate action

Beyond their immediate outcomes, these examples highlight several ways that community-led climate initiatives drive positive change:

Enhanced placemaking: Low carbon projects aren't solely about infrastructure. They enhance aesthetics, promote biodiversity, provide gathering spaces, foster pride in the local environment, and contribute to the 'feel-good' factor that underpins desirable neighbourhoods.

Social impact: Engaging residents in climate action empowers them, creates a sense of shared purpose, bridges divides, and promotes long-term stewardship of the local area. Projects that support skills development or target underrepresented groups foster further inclusivity.

Economic benefits: Locally sourced materials and businesses involved

Originally published on Unlock Net Zero – 05.03.24

The Byker Blooms project in Newcastle

in these projects boost the local economy. Increased investment from councils and grant bodies spurred by local crowdfunding successes creates a virtuous cycle.

Accelerating net zero: Projects like solar installations, improved energy efficiency, and nature-based solutions directly reduce carbon emissions; however, a critical contribution comes from influencing behaviour. Successful community projects act as 'demonstrators', inspiring residents and showcasing ways to reduce their own environmental footprint.

How Spacehive empowers and enables community action

The impact of these community-led interventions extends beyond their local environments. Cities serve as laboratories for solutions and successes replicated nationwide. When working in symbiosis with both local government and the business community, locally-led projects help to shape the broader national agenda. They can spark policy changes, influence infrastructure planning, and reshape how larger, top-down climate goals can be met in meaningful, tangible ways.

Community driven, crowdfunded climate action isn't a 'nice to have' – it's a powerful way to enhance placemaking, improve social conditions, and meet shared net zero ambitions. At Spacehive we're witnessing first hand how the passion and commitment of local residents drives change, turning everyday places into greener, healthier, and more vibrant communities. The key lies in providing the resources, structures, and the belief that local people can be transformative leaders in tackling the climate crisis.

Frank Kibble is Partnership director at Spacehive

Originally published on Unlock Net Zero – 05.03.24

CASE STUDY

ASHDEN

From London to Leeds, local authorities drive climate action

Originally published on Unlock Net Zero – 23.01.24

National progress to net zero is threatened by under-investment and stop-start policies. So it's welcome news that, in many cases, cities and communities are driving forward the green transition in their area.

Local authorities, in particular, have recognised that climate action can improve people's lives through lower energy bills, better air quality and the growth of good green jobs. Their projects are drawing on a wide range of benefits to win funding, spark collaboration and ensure resident support.

Most UK cities have declared climate emergencies, have climate action plans in place and are now delivering across a wide range of issues including buildings, transport, waste and nature recovery. A place-based approach allows them to tailor their work to local needs and priorities. Ashden, a climate solutions charity, is working with authorities to develop projects and share insights from pioneering work. It's clear that scaling up or replicating innovation will be a defining challenge in the country's journey to net zero. Many councils lack the resources and connections to do this themselves.

We've picked out four exciting projects, and the factors that make them a success.

Enfield – community digs in for flood defence

Today's climate emergency is worsened by threats to the natural world. So action to restore and protect nature can dramatically improve the resilience of our cities. In North London, Enfield Council and environmental charity Thames21 have protected communities from extreme weather by bringing new life to neglected waterways.

Local volunteers are at the heart of the action. 5,500 of them have been hard at work restoring local brooks that had been hemmed in by concrete, and creating new woods and wetlands. Work to restore the brooks has included removing artificial materials and bringing them back to surface level. This allows these waterways to wind to across the land, and creates floodplains that can be safely submerged after heavy rain. This has created benefits for plants and animals too.

13 new wetlands have arrived too, introduced by digging ditches and boosting vegetation in local parks. And planting more than 130,000 trees has created 80 hectares of publicly accessible native woodland, bringing further protection from extreme weather.

Leicester – boosting bus use and cycling

Transport is a major contributor to carbon emissions in most cities, and car dominance has led to high pollution and congestion. This has been a particular challenge in Leicester, which is one of the UK's top five fastest growing cities.

Its drawing on investment from the government's Transforming Cities Fund to dramatically boost bus use and cycling. Projects include an electric express bus network linking transport, retail, employment, educational and health hubs. The city has also installed 8km of bus lanes and 26km of new cycle and walking routes, and committed to make 80% of Leicester's streets 20mph zones.

Leeds – warming homes with an area-based approach

Buildings also make up a large proportion of cities' carbon emissions. This is related to the construction of new homes and offices, but also the effect of older, leaky housing stock. With energy prices still double their pre-pandemic levels, poor energy efficiency is leading to high levels of fuel poverty with devastating consequences on physical and mental health.

Leeds City Council has shown the benefit of area-based retrofit, targeting support to a particular neighbourhood. This stands against the more common approach of upgrading houses of a particular type or tenancy in different locations. This second approach if often complex, inefficient for councils and contractors, and misses chances to tackle wider community issues.

The city's Holbeck neighbourhood is ranked in the top 1% of the UK's most deprived areas. Here the council dedicated £10m to upgrading 300 homes, first making them weathertight and then improving energy efficiency with news windows and doors, loft insulation and external wall insulation. Average home temperatures rose from 12°C to 18°C, leaving improved physical and mental health, hundreds of green jobs created, and lifetime savings of 85 tonnes of CO2 per property.

Originally published on Unlock Net Zero – 23.01.24


Cara Jenkinson

Bristol – an appetite to tackle food waste
Waste management is also a top priority for many cities. Waste charity WRAP estimate that food waste costs a four-person household around £1000 per year, and results in emissions equivalent to 3% of the UK's carbon footprint. In Bristol, 20,000 tonnes of food are thrown away every year.

Bristol City Council has a developed a menu of solutions to the problem, including requirements within its good food and catering procurement policy. There are also awards for local schools and businesses that cut food and packaging waste, while publicity campaigns have educated residents on how to throw less produce away, and make use the council's food waste collection service.

Biomethane produced from thrown-away food powers local homes, schools and businesses – as well as the Bio-Bus, a great public transport option for residents.

Key insights: what makes local climate action work?

Maximise social impact:
Well-targeted climate action boosts local health, economies, resilience and community cohesion. Maximising these benefits creates a stronger business case and brings decision-makers and communities on board. The area-based retrofit project in Leeds included debt advice and action on anti-social behaviour as well as upgrading properties. This drew in residents to take part - 95% agreed to have work done.

Build partnerships:
Councils across the UK are strapped for cash, and most successful initiatives involve partnerships which can unlock additional funding and boost delivery capacity. Enfield's partnership with Thames 21 allowed the council to bid for additional funding and to carry out extensive community engagement. Bristol's Food Waste Action Group brings together the council, waste collection company Bristol Waste, FareShare and the city's universities and has allowed a holistic approach to food waste reduction.

Involve communities at every stage:
Good community engagement is vital. This takes resource and time, but if done badly or not at all, the backlash to climate initiatives can set progress back by years. In all of the examples above, councils prioritised community engagement. In Leeds, the council invested the time to knock on all of the doors in the neighbourhood, and set up a community drop-in hub.

Leicester worked with Sustrans, British Cycling and Living Streets to create a broader cycling culture in the city. It also runs regular Open Streets events. These bring the community together for walks, guided tours and bike try-outs around the city's streets.

Ashden runs a local authority learning networks focused on key themes such as retrofit, community engagement and adaptation.

Cara Jenkinson is Cities manager at Ashden, the climate solutions charity

Originally published on Unlock Net Zero – 23.01.24

REFLECTIONS

OUR TAKEAWAYS FROM THIS PROGRAMME OF WORK AND WHAT WE WOULD LIKE TO SEE NEXT

REFLECTIONS

Our conversations during this programme have pointed conclusively to one clear outcome: to deliver a successful net zero transition across the UK, we must explore place-based solutions tailored to local requirements. Net zero by 2050 is a national target, providing a framework for everyone to work towards, but solutions will differ by region. Therefore, they need to be driven by local plans based on local evidence, with decarbonisation at the core of placemaking, regeneration, and housing activities.

The value of Local Area Energy Plans has been highlighted throughout our discussions. The creation of these robust, stakeholder-driven, and evidence-led databases is already supporting excellent work across the country. We believe more cities and regions should adopt this planned approach to build healthy, prosperous communities. The data and evidence gathered will be crucial for leading local-level engagement. One area worth exploring is how these plans can be linked with local planning regulations and frameworks to further guide decision-making based on solid evidence.

For any holistic approach to combine placemaking, regeneration, housing, and the net zero challenge, net zero must become part of the business-as-usual activities of a city or region rather than being treated as a separate, standalone project. It should be the driving force and catalyst for delivering these complementary agendas while also making the best use of available funding through combined activity.

This shift requires collective thinking and a change in mindset from current approaches. The issues we face at the local level are shared and collective, and the solutions designed to address them should be as well.

The time for talking is over—we must now focus on action. Climate change is here, and we are in a period of adaptation and resilience. This affects how we develop our cities going forward. Although we have until 2050 to reach net zero, many regions have set earlier targets, and achieving them is crucial for maintaining community engagement. We must learn from each other's actions, as there is no established blueprint. Shared experiences and lessons—both successes and failures—will be vital.

A successful net zero transition can only be achieved when it is accepted by the communities it impacts. Early engagement, using language that resonates with and relates to people's lives, is the model we need. This transition represents change on a massive scale, and people need to understand why it is happening, what the benefits are, and how it will affect them. These benefits are diverse and should be communicated clearly to different stakeholder groups with tailored emphasis. A simple message of reducing emissions will not resonate with most people; it must be contextualised in terms of improving their lives—economically, in health outcomes, or through social equity. The message will vary, but it should always be aspirational, showing that this change is about enhancing lives, not something that merely happens to people.

Put simply, we need action. We need to move forward with urgency, learn from our efforts, and adapt accordingly. Most importantly, we need solutions at scale. Who will deliver this ambitious agenda? The answer is all of us, working together in collaboration and partnership. Through this programme, we have seen a lot of positive action and ambition to create a carbon-free future, which will in turn boost placemaking, regeneration, and housing in our cities and regions. Facing this as a collective challenge will help drive us towards the right solutions.

UNLOCK
NET ZERO