

Local Authorities and the Sixth Carbon Budget

An independent report for the Climate Change Committee.

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Key messages

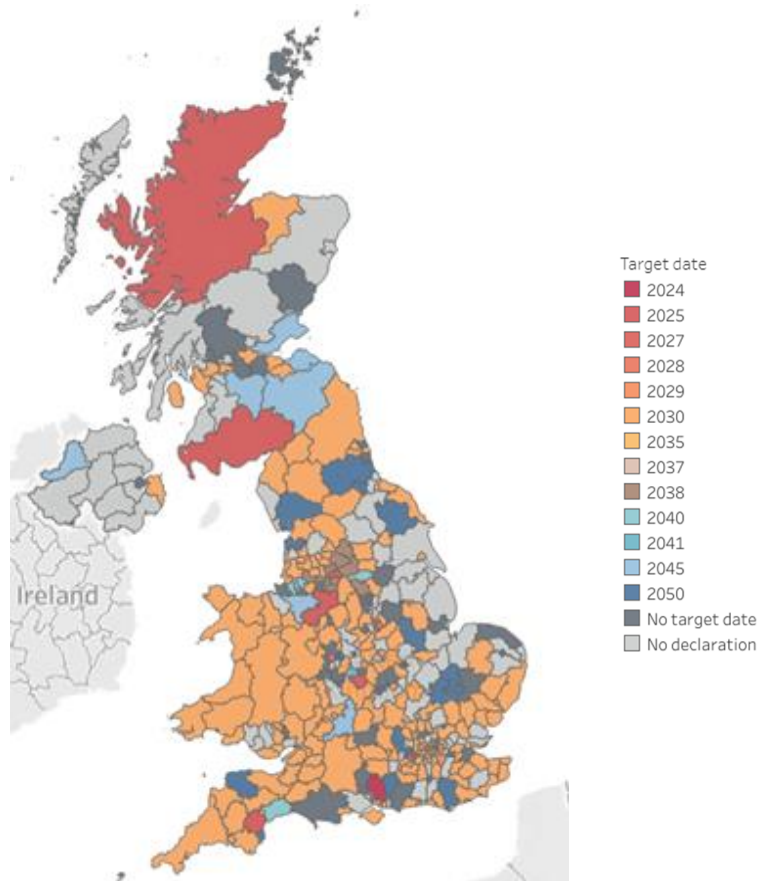
- The UK Government and local authorities share a common goal to deliver Net Zero.
- The Sixth Carbon Budget can only be achieved if Government, regional agencies and local authorities work seamlessly together.
- More than half of the emissions cuts needed rely on people and businesses taking up low-carbon solutions - decisions that are made at a local and individual level. Many of these decisions depend on having supporting infrastructure and systems in place. Local authorities have powers or influence over roughly a third of emissions in their local areas.
- Top-down policies go some way to delivering change, but can achieve a far greater impact if they are focused through local knowledge and networks.
- Four key things are needed to achieve this vision of collaborative delivery:
 - **Framework:** An agreed framework for delivery for Net Zero incorporating local and national climate action
 - **Financing:** Appropriate long-term financing to support local authorities in delivering Net Zero
 - **Flexibility:** Local operational flexibility around how local areas address climate change
 - **Facilitation:** coherent policy and powers for the facilitation of delivery.

Local authority commitments to Net Zero

Over 300 local authorities have declared Climate Emergencies and a third have developed strategies and action plans to deliver ambitious targets by 2030 and 2050.

Over 300 local authorities* have declared Climate Emergencies and a third have developed strategies and action plans to deliver ambitious targets by 2030 and 2050. More than half of these have a Net Zero target date of 2030. Many others are delivering climate change plans without declaring an emergency, but are not represented in Figure 1.1 below.

Figure 1.1 Local Authority climate emergency declarations



Source: Map by Aether (2020) Progress towards UK local climate emergency targets based on Climate Emergencies declared as at October 2020.

Notes: dates shown are earliest targets, some relate to council emissions rather than area-wide emissions.

Local authority action plans represent the 'locally determined contributions' to the national Net Zero target.

Local authority action plans represent the 'locally determined contributions' to the national Net Zero target. This is bottom up climate action that meets, or in some cases exceeds, the top-down climate objectives of the UK and devolved governments and results in delivery on the targets.

Combined authorities and local authorities are a cornerstone of climate change partnerships across the country.

Combined authorities and local authorities are a cornerstone of climate change partnerships across the country that link key delivery organisations to deliver Net Zero. They are the closest form of government to local people, and know what works best in their areas. Even in a global pandemic, local authorities consider climate action to be a priority.

* Local authorities referred to in this report includes county and district councils, unitary authorities, metropolitan districts and London boroughs, National Park Authorities and Combined Authorities.

Local authority levers to deliver Net Zero

Local authorities are responsible for 2 – 5% of local emissions but potentially influence around a third of an area's emissions through place-shaping and leadership

Local authorities are directly responsible for between 2- 5% of their local area's emissions. However, local authorities have many levers that can be used to deliver wider local action to reduce emissions and prepare local areas for a changing climate. Key powers and duties are:

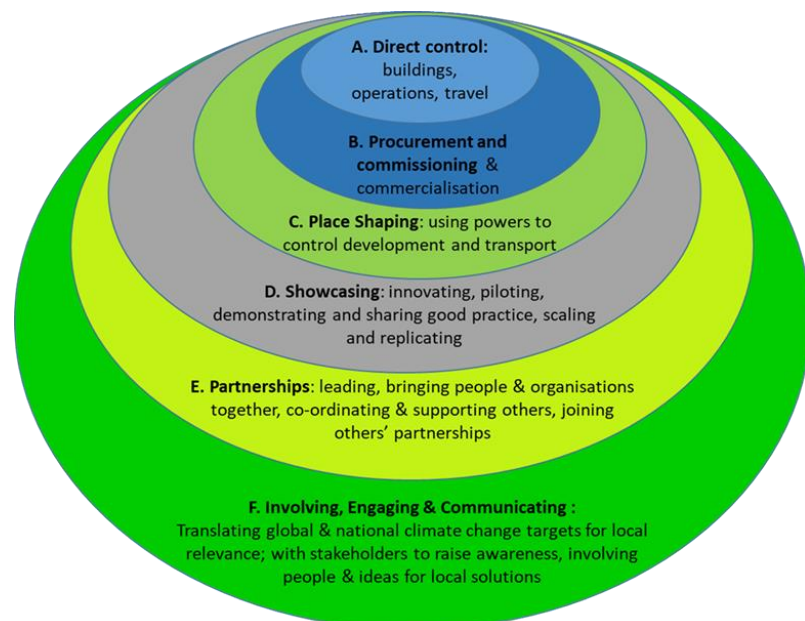
- An overarching role to support the economic, health and social wellbeing of communities
- Planning powers over buildings and transport
- Enforcement of building regulations
- Powers to ensure buildings meet basic energy efficiency standards
- Duties to prevent homelessness and prevent hazards in housing
- Duties to manage risk including climate risks such as flooding
- Duties and powers to protect the environment, wildlife and heritage
- Duties to collect and dispose of waste
- Borrowing and investment powers

Local authorities' leadership role in partnerships and with the public places them at the heart of the climate conversation and in developing and replicating local solutions.

Figure 1.2. shows local authorities' leverage and influence through their services, planning and enforcement roles, housing, regeneration, economic development activities, education and skills services and investments. Their leadership role in partnerships and with the public places them at the heart of the climate conversation and in developing and replicating local solutions.

However, these levers alone are not sufficient to deliver local authorities' Net Zero ambitions, due to gaps in key powers that prevent systems-scale or holistic approaches, policy and funding barriers, and a lack of capacity and skills caused by funding cuts.

Figure 1.2 How local authorities control and influence emissions



Source: Coxcoon, R. & Roberts, S. (2020) *Climate Action Planning Tool for Local Authorities*, Centre for Sustainable Energy. <https://www.cse.org.uk/news/view/2541>

Progress to date in reducing emissions has been largely achieved through centrally driven policy to phase out coal for electricity production. This required a small number of actors supported by local supply chains in specific places.

Many of the urgent changes and decisions which are needed to reduce emissions and reach Net Zero have a strong local dimension.

Many of the urgent changes and decisions which are needed next to reduce emissions and reach Net Zero have a strong local dimension. Decarbonising buildings, transport, waste and industry, cutting emissions from agriculture and storing more carbon through land-use and forestry are dependent on delivery at a local scale. By the early 2030s all new investment and purchase decisions need to be Net Zero. This will require decisive national policy, but the way this is delivered will differ according to local context and a 'one size fits all' approach will not work. This is particularly important to deliver heat decarbonisation, which cannot be achieved in a cost-effective way without coordination for the infrastructure investments needed.

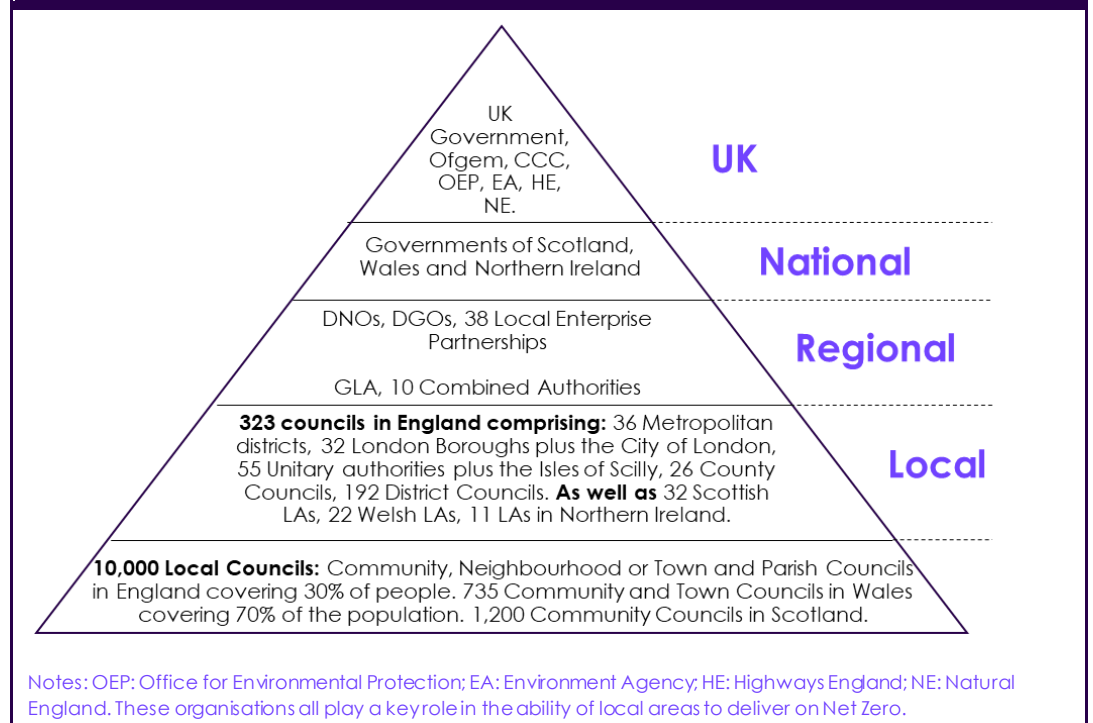
Public trust in local authority Trading Standards and consumer groups is high at 80% compared to 41% trust in energy suppliers.

This is not just about technology, but is about supporting people in taking low-carbon decisions. Public trust in local authority Trading Standards and consumer groups is high at 80% compared to 41% trust in energy suppliers*. This reinforces the crucial role of local authorities as trusted enablers in the energy transition.

Current lack of national co-ordination

Box 1.1

The sub-national co-ordination framework



In England and Northern Ireland, there is no overall plan on how local authorities fit into delivering Net Zero.

In England and Northern Ireland, there is no overall plan on how local authorities fit into delivering Net Zero. The onus is on local authorities to work out their own course based on piecemeal policy and communications from Government. This particularly affects smaller local authorities with fewer staff working on emissions reductions.

The Scottish and Welsh administrations have stronger frameworks and support systems in place to work effectively in step with their local authorities.

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* BEIS Public Attitudes Tracker June 2020

The National Audit Office (NAO) recently reviewed how Government is set up to deliver the UK's Net Zero target, recognising it as a cross-Government delivery challenge, and noting that the Government needs to identify how it relates to other Government priorities. The review noted the need for effective co-ordination between departments, led by BEIS, the Cabinet Office and HMT, the need for Net Zero to be built into all departmental plans. Additionally, it noted that Government has yet to include other public bodies, such as local authorities, in its coordination arrangements.

Local authorities are making policy and contract decisions now that could lock in emissions beyond the 2020s. Coordination is needed to prevent a fragmented strategy for Net Zero.

Local authorities are developing their plans and making policy and contract decisions now, which will remain in place during the 2020s and beyond, but they only have limited guidance as to how these decisions fit into a national strategy for meeting the UK's Net Zero objectives. They cannot deliver effectively and efficiently without longer term policy and funding certainty to underpin investment decisions. Without some level of coordination from Government, the UK risks pursuing a fragmented strategy towards Net Zero.

There is no single go-to source for local authorities. A survey for this report showed that local authorities use a very wide range of sources ranging from BEIS to local government membership bodies, non-governmental organisations to universities to inform their activities on climate change. This means significant time and expertise is spent extrapolating from national to local data, dealing with contradictory information and working out what they should do. This can lead to a reliance on consultants for tasks like emissions reporting, which is costly and can hinder capacity development within the local authority. Such duplication of effort and expense could be better spent on delivery of individual schemes.

Regional and cross-boundary coordination and cooperation is needed for transport, waste, energy and heat planning.

Some aspects of the transformation need regional coordination and cooperation, for example, in two-tier authorities' transport plans and waste strategies, in cross-boundary local area energy planning, and for regional switchovers to hydrogen for heat. A flexible Net Zero framework would enable local authorities to develop plans appropriate to their local areas, avoiding energy or transport 'islands' or a patchwork of conflicting approaches. However, it should not hold back those local authorities already forging ahead with delivery.

The sector is at the forefront of calls for a resilient, green recovery from the COVID-19 pandemic to ensure measures to support the economy align with Net Zero.

The sector is at the forefront of calls for a resilient, green recovery from the COVID-19 pandemic to ensure measures to support the economy align with Net Zero. They are seeking to maintain some of the low-carbon behaviours that have occurred, such as cleaner air and increased home working, reduced food waste and greater levels of recycling, while investing in the green spaces and woodlands that people valued so much under lockdown. Local authorities are devising ways to increase the supply chain jobs and skills for home energy efficiency retrofit across the country and for land-based skills in forestry, land management and farming. They are also aiming to support market development by tackling barriers to uptake in home energy efficiency and want to support people transferring from declining sectors to new jobs.

Recommendations

Recommendations to the Government and local authorities are provided at the end of the report. The four steps below are the priority recommendations for the Government to act on as soon as possible to provide coherence and ensure the best possible delivery of the Sixth Carbon Budget at the local level.

Framework

The Government should engage with local authorities to ensure that a Net Zero Delivery Framework is included in its Net Zero Strategy that will align and clarify national, sub-national, regional and local delivery roles and areas for collaboration.

The Government is bringing forward a Net Zero Strategy setting out its vision of how to achieve Net Zero. A range of strategies and decisions are also expected including the Energy White Paper, Heat and Buildings Strategy, Transport Decarbonisation Plan, HMT's Net Zero review along with a Hydrogen Strategy and the Tree and peat strategies.

The Government should engage with local authorities to ensure that a Net Zero Delivery Framework is included in its Net Zero Strategy that will align and clarify national, sub-national, regional and local delivery roles and areas for collaboration. It should provide clear outcomes and direction to reduce uncertainty, provide additional powers where needed, identify public and private investment and enable flexible delivery at the faster pace of ambitious areas. This should allow them to set higher standards through the planning system. It should also support nation-wide delivery so that nowhere is left behind.

This report, in line with previous CCC recommendations, does not recommend that local authorities are set binding carbon budgets due to the range of factors affecting local emissions that are beyond their direct control. However, it does recommend that local authorities consider Net Zero action plans for their own emissions and that they work in partnership to reduce area wide emissions.

With an effective Net Zero Delivery Framework in place the high levels of local authority ambition and local engagement can be leveraged to make a significant contribution towards Net Zero. This will ensure that policy aims and outcomes could be delivered in the most effective and appropriate way at the local level and deliver the greatest co-benefits to the local economy, jobs, health and environment.

Financing

Local authorities require sufficient funding, whether in their annual settlement or through ring-fenced funding, to increase their skills and capacity to deliver the project pipeline for Net Zero.

Local authorities have faced significant funding cuts to budgets over recent years. This has been exacerbated by the COVID-19 pandemic which has left them facing large budget shortfalls. There is a risk that, despite their commitment to climate goals, projects may be delayed in favour of delivering core statutory duties. Local authorities require sufficient funding, whether in their annual settlement or through ring-fenced funding, to increase their skills and capacity to deliver the project pipeline for Net Zero. This cuts across all their service areas, ranging from building control, to policy and development planners, housing teams, economic development and capital projects. Grant funding to deliver support and training should also be provided through local authority membership organisations.

Funding competitions are problematic, focusing resources into the local authorities with sufficient staffing and capacity to apply for funds, often at short notice. Funds also have to be spent rapidly, which prevents a skilled local supply chain being developed.

Local authorities want to catalyse investment and add value by maximising social, environmental and economic returns from spending on energy efficiency, heat decarbonisation and transport.

Delivering Net Zero cannot be funded by the public purse alone. Local authorities do not want to be a funding conduit. They want to catalyse investment and add value by maximising social, environmental and economic returns from spending on energy efficiency, heat decarbonisation and transport. To do this they need skills, capacity and resourcing, including development funding. The UK Shared Prosperity Fund is an opportunity to provide such funding.

There is evidence of the potential:

- Bristol City LEAP will establish a joint venture between the City Council and a strategic partner to deliver more than £1 billion of investment towards Bristol becoming a zero-carbon, smart energy city by 2030.
- Greater Manchester's Environment Fund will support the development, scale and verification for carbon and habitat banking, aiming for a £5 million annual turnover to finance new habitats, tree planting and peat restoration.
- West Berkshire Council issued the first Community Municipal Investment through a Bond offer raising over £1 million from 600 investors, a fifth from the local area, to finance solar, LED lighting, cycling routes and environmental investments.
- UK 100 and Siemens have identified £100 billion potential investment in local energy that could be realised with a public investment of £5 billion.
- The £8 million investment in the BEIS Local Energy Hubs has delivered £61 million investment to date and a pipeline of £1.2 billion.

Government needs to set policy and funding that is flexible, so local authorities can blend and deliver schemes more efficiently, leveraging various streams to deliver for multiple impacts across energy, health, housing and transport. Short term, unexpected funding opportunities fail to deliver the best schemes.

Cities, Combined Authorities and local leaders have identified the barriers to action in delivering Net Zero locally and are calling for increased powers, funding and devolution to enable them to get on with it. There is a danger the larger authorities will move ahead and the smaller ones will be left behind. This is particularly the case for rural areas which tend to be neglected in policy-terms.

Flexibility

Whole places need transforming towards Net Zero working with residents, communities and businesses to deliver the right changes for the area.

Actions taken now locally will grow the pipeline of projects, jobs and skills to scale up delivery of zero carbon buildings and transport, waste reduction and low-carbon land use. For local authorities, this does not entail focused emissions cuts in separate sectors, but means transforming whole places towards Net Zero, working with residents, communities and businesses to deliver the right changes and investments for the area.

Local areas have different conditions to deliver Net Zero, varied building types, energy resources, travel patterns and transport infrastructure, supply chains and skills and priorities.

Local areas have different conditions to deliver Net Zero, varied building types, energy resources, travel patterns and transport infrastructure, supply chains and skills and priorities. Additionally, the governance of areas varies from Combined Authorities led by Mayors to county and district council tiers, rural unitary authorities or London Boroughs.

Wider partnerships exist to greater or lesser extents with Local Enterprise Partnerships, industrial partners and distribution network operators supported by the third and business sectors. A one-size-fits all approach is unlikely to work beyond setting strong standards, regulations and incentives from the centre. Local flexibility to deliver an agreed national outcome is essential. And the freedom for some pathfinder areas to go faster, to innovate and develop solutions is vital. Where local authorities are putting in place ambitious and well-evidenced plans and are delivering low and net zero carbon developments and transport services, they should be allowed to go ahead of national standards.

Local conditions also mean that the flexibility in funding is needed to enable local areas to combine funding into single projects or programmes that deliver multiple benefits and stop siloed working. This will require trust, transparency and increased devolution. The Net Zero Delivery Framework should be able to make this happen.

Facilitation

The UK government and the devolved administrations can accelerate the delivery of Net Zero by ensuring that new policy from all government departments is Net Zero compliant.

The UK government and the devolved administrations can accelerate the delivery of Net Zero by ensuring that new policy from all government departments is Net Zero compliant. The NAO has called for departments to assess how other government priorities affect the delivery of Net Zero. A review of existing contradictory policies and funding programmes should be carried out to remove conflicts and ensure policies and programmes align rather than compete.

A stark example of competing priorities is the tension between building new homes and delivering low-carbon, well adapted development. The National Planning Policy Framework places duties on local government to address climate change and to deliver sustainable development. Local planning authorities can introduce policies to deliver low-carbon and energy efficient developments. They can require net-zero or higher-than-current-standards of energy efficiency. Yet they cannot deliver these measures because they face counter policies on housing targets and viability that prevent their use and leave the authority open to appeal or challenge. This means that repeatedly new housing contributes to emissions and needs retrofitting at the expense of its occupier. Additionally, homes are built to the Building Standards in place when planning consent was granted, this means homes are still being built today, to outdated standards.

Similarly, policies that work against the Net Zero goal are found in transport. Developing a business case for a cycle lane or walking infrastructure is challenging, because weighting is given to traffic flow, seen as delivering economic benefits. Carbon reductions, improved health and clean air are not sufficiently valued.

Rather than looking at why actions *cannot* be delivered, we should be looking at *how* they can be delivered while meeting the overarching priorities of government and local areas.

Recommendations for Government and local authorities can be found in Box 1 and Box 2 respectively.

Actions local authorities can take on emissions from Buildings, Transport, Waste, Power and Land Use, land-use change, forestry and agriculture are provided in Chapter 3.

Box 1

Recommendations to Government

In order to enable local authorities to effectively deliver climate action in the UK, the Government will need to develop clear policy, including guidance on the role of local authorities in delivering Net Zero, and empower local authorities with appropriate levels of funding and support.

Policy

- **Develop a Net Zero Delivery Framework which aligns and clarifies national, sub-national, regional and local delivery roles** and areas for collaboration as part of the Government's forthcoming Net Zero Strategy. It should provide clear outcomes and direction to reduce uncertainty, provide additional powers where needed, identify public and private investment and enable flexible delivery at the faster pace of ambitious areas. This should also allow local authorities to set higher standards through the planning system.
- **Consider introducing a Duty on local authorities to act in accordance with Net Zero by delivering climate action plans within a common reporting system***. *A corresponding recommendation to local authorities is to develop standardised reporting and benchmarking, the Government should encourage and support this, and should receive data and use it for policy making.* Any new duty should be fully funded.
- **Make policies consistent with delivering Net Zero by reviewing evidence provided in this and other reports, and in requests from local authorities.** Government should remove blocks and align powers and policies to be consistent with delivering Net Zero. This is important for Planning policies, financial appraisal and managing public transport as a whole system.
- **Support area wide planning for regional delivery of energy, transport systems and building retrofit.** This planning should support governance and delivery stakeholders and a strong social process for public engagement. It should include robust Local Area Energy Planning that identifies heat zones for buildings, building retrofit priorities. It should also include city-wide or area-wide transport planning for decarbonised transport. A Duty to Collaborate between agencies and local authorities could be considered.

Funding and Support

- **Increase funding and support for local authorities to develop skills and capacity** to plan and implement climate action across both emissions reduction and climate adaptation in their local areas. This should include sufficient core funding and training to ensure that climate skills are embedded in all roles and that there is widespread access to specialist energy and retrofit skills.
- **Provide coherent cross-departmental support on climate action**, building on the positive models of OLEV, HNDU and Sustainable Scotland Network support to local authorities. This should support local authority staff to deliver on buildings and transport decarbonisation in particular. Such offices should enable seamless communication between government officials and local authority officers.
- **Introduce significant, non-competitive long-term investment** in retrofit, heat decarbonisation infrastructure and public transport and give flexibility to local authorities to blend budgets to deliver multiple co-benefits. Short-term competitive funding for narrowly specified projects with tight bidding times makes it very hard for smaller authorities with less capacity to apply and concentrates funding in certain areas. HMT should ensure that funding is made over longer time periods to enable better delivery. Government should ensure the National Infrastructure Bank finances Net Zero schemes and that the UK Shared Prosperity Fund provides long-term funding through development funds to kick start infrastructure investments at scale which can be refinanced at a later date.
- **Align public spending with Net Zero:** Review the Government's Green Book policy guidance, and business case tools, such as DfT's WebTag, to incorporate a stronger focus on carbon reduction and co-benefits in business cases and financial appraisal. Funding allocated directly to LEPs and Combined Authorities for economic development should strongly align with the Net Zero agenda.

* However, learn from Scotland about why they are changing / simplifying their reporting system

- **Ensure that funds for pilot and innovation projects include budget for evaluation and for the longer-term consideration of replication and scaling up viable models.** The CCC's scenarios identify large gaps in national policy for buildings and transport decarbonisation. Without action to fill these gaps, projects are likely to remain stuck at the pilot stage. Note: not everything will work.

Communications and Engagement

- **Deliver a national climate communications and public engagement** programme that can be tailored at a local level. Funding to local authorities and their partners to deliver such a programme will enable public engagement and support local delivery of shared national objectives.

Box 2

Recommendations to Local Authorities

Local authorities are well placed to deliver climate action in the UK, and should be supported to do so. Local authorities looking to act on climate change should consider the following over-arching priorities:

- **Develop Net Zero or Climate Action Plans with delivery projects** that prepare the area to make the transition to net zero choices from 2030, and align with climate adaptation, biodiversity net gain and other key local strategies. Include immediate actions that kick-start delivery now and that support low-carbon and green skills and jobs.
- **Monitor and report on progress in reducing emissions** to local communities and government. Where possible share standardised data, benchmark and provide clear evidence to inform policy.
- **Conduct policy and service reviews** to align policy, spending and functions with Net Zero. Identify contradictions, then put in place mitigation plans to align them at a future date and reduce emissions in the meantime. Develop project and financial appraisal systems that include emissions and climate impacts.
- **Implement training and capacity building** to deliver Net Zero within the local authority and with key suppliers and contractors. Climate, energy, sustainability and carbon understanding needs to be embedded in the whole authority, across staff and systems. Increasingly specialist skills will be needed around energy systems. Climate change should be central to Elected Member and Senior Director training.
- **Develop capacity to innovate and scale up.** Climate change action plans help identify future delivery projects for when funding becomes available. Local authorities should prioritise applying for funding and managing funds if successful. *This recommendation sits alongside the recommendation to government to implement longer term funding windows, longer periods for funding and flexibility to blend funding streams. It is also backed by a recommendation for more funding for local authorities to act on climate change.*
- **Collaborate with neighbouring and cross-tier local authorities and other key delivery bodies on strategies and plans** which ensure systems-wide transformation is coherent and supportive of Net Zero. This should include energy, transport, housing, infrastructure and skills. This should enable local authorities to cluster to share skills, expertise, achieve economies of scale and deliver more effectively. Local area energy plans should be conducted at a scale larger than small district councils and with awareness of the wider energy assets in the region.
- **Develop Green Finance know-how.** Private sector investment and Green Finance will be required to deliver the scale of the change needed. Local authority legal and finance teams, and project delivery teams will need to develop their knowledge of the finance industry.
- **Communicate and engage with local communities, businesses and partners on Net Zero** so that a mandate for action is maintained. Support community action with citizens, schools, businesses and other groups. Assess the skills needed locally to deliver the transition, developing green and low-carbon jobs and supporting a resilient recovery.
- **Local authority pension funds** should disclose their approach to assessing and managing climate risks and should consider investing in Net Zero aligned schemes within their legal duties.

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Introduction and context

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1. Introduction: Why local delivery matters

The Committee is advising that the UK set its Sixth Carbon Budget (i.e. the legal limit for UK emissions of greenhouse gases over the years 2033-37) to require a reduction in UK emissions of 78% by 2035 relative to 1990, a 63% reduction from 2019. This will be a world-leading commitment, placing the UK decisively on the path to Net Zero by 2050 at the latest, with a trajectory that is consistent with the Paris Agreement.

The CCC's Sixth Carbon Budget advice recognises that significant policy strengthening will be required and that plans must translate to action. Its advice and policy reports outline how Government must organise for the major delivery challenge of Net Zero.¹ This delivery challenge extends to local authorities which have a key role in supporting people, communities and businesses through what must be a just and fair transition.

The CCC recognises the vital role local authorities and combined authorities have in delivering Net Zero.

Why local delivery matters

The CCC recognises the vital role local authorities* have in delivering this transformation. It commissioned this report to make the Sixth Carbon Budget relevant to local authorities, highlighting the key areas where strategic policy and practical action at regional and local levels are critical to achieving the pathway towards Net Zero. It also shows government where there are challenges and blocks to action and provides recommendations for action.

Many of the urgent changes and decisions which are needed to reduce emissions and reach Net Zero have a strong local dimension.

Progress to date has been largely achieved through centrally driven policy to phase out coal for electricity production. This required a small number of actors supported by local supply chains in specific places. But many of the urgent changes and decisions which are needed next to reduce emissions and reach Net Zero have a strong local dimension. Decarbonising buildings, transport, waste and industry, cutting emissions from agriculture and storing more carbon through land-use and forestry are dependent on delivery at a local scale. Over half of the UK's emissions cuts are dependent on purchasing decisions, behaviours and habits of individuals, businesses and organisations.

Around a third of the UK's emissions are dependent on sectors that are directly shaped or influenced by local authority practice, policy or partnerships.

Around a third of the UK's emissions are dependent on sectors that are directly shaped or influenced by local authority practice, policy or partnerships.

To deliver the Sixth Carbon Budget decisive coherent policy and support needs to translate effectively into practical implementation across the whole UK, through devolved administrations, regional organisations, local authorities and agencies all the way into homes and businesses.

Actions taken now, locally, will grow the pipeline of projects, jobs and skills to scale up delivery of zero carbon buildings and transport, waste reduction and low-carbon land use. For local authorities, this does not entail focused emissions cuts in separate sectors, but means transforming whole places towards Net Zero, working with residents, communities and businesses to deliver the right changes and investments for the area. This needs a bold yet adaptable approach, and it needs proper funding and powers in the right places.

* Local authorities referred to in this report includes county and district councils, unitary authorities, metropolitan districts and London boroughs, National Park Authorities and Combined Authorities.

Local authority climate change plans can be seen as 'Locally Determined Contributions'* to deliver the UK's Net Zero objectives

Current arrangements between government and local authorities are complex and do not facilitate the Net Zero transition in England and Northern Ireland

Delivering Net Zero needs national, regional and local actions, delivered at the right level with a clear and cohesive plan and ongoing cooperation.

Regional co-ordination and co-operation will be needed across transport, waste and energy to facilitate the transition. A Framework is needed to ensure government, regional organisations and local authorities plan and act seamlessly to deliver.

Local and combined authorities have responded to growing pressure for climate action by adopting ambitious climate targets. Over 300 local authorities out of 408 have declared Climate Emergencies.² Others are taking strong action on climate without declaring an emergency. This builds on previous decades of effort on climate, environmental and biodiversity action, slowed by a decade of austerity and policy backsliding causing emissions from buildings and transport to flatline. In many cases these local targets are ahead of the UK's target of achieve Net Zero for all greenhouse gases by 2050.

Local authority climate change plans can be seen as 'Locally Determined Contributions'* to deliver the UK's Net Zero objectives. Government should support, empower and work effectively with local authorities to translate its legislated targets into actual delivery of the UK's Net Zero target by 2050.

Currently delivery of national and local climate ambition is fragmented. In England and Northern Ireland, arrangements between national and local government are complex and do not currently facilitate the delivery of the Sixth Carbon Budget or the pathway to Net Zero. National government policy and communication is siloed in separate departments, and the same occurs in local authorities. There is no overall plan for how local authorities fit into the Government's Net Zero strategy, and policy and funding to deliver this at a local level is often piecemeal. Policies for housing, transport and energy are often developed separately, missing opportunities to identify a systems-approach to delivering low-carbon and well adapted localities. The arrangements in Scotland and Wales appear to be somewhat better designed to enable coherent and collaborative policy development and programme delivery.

Effective delivery of Net Zero will require coherence across national, regional and local boundaries and administrations. Delivering Net Zero outcomes at the local level needs government to provide clear direction and expectations with supporting policy and funding. Equipped with this, regional and local organisations can determine the best processes and approaches to deliver.

Some aspects of the transformation need regional co-ordination and co-operation (county and districts transport plans and waste reductions, local area energy plans spanning local authority boundaries, or a regional switchover to hydrogen for heat, for example). A flexible Net Zero framework would enable local authorities to develop plans appropriate to their local areas, avoiding energy or transport 'islands' or a patchwork of conflicting approaches. However, it should not hold back those local authorities already forging ahead with delivery.

The scope of this report

This report outlines the critical roles of regional and local organisations (distribution network operators, Local Enterprise Partnerships, Combined Authorities and local authorities) that must collaborate to deliver Net Zero. It lays out the local authorities' duties, powers, levers and influences; from the estimated 2-5% of UK emissions they control across their estate, service operations and procurement; to around a third of local area emissions they influence through planning and transport policy, waste services, regeneration and economic development and other service delivery; including place based emissions cuts that can be enabled through council leadership, skills and training programmes, partnerships, innovation and community involvement.

* A local version of Nationally Determined Contributions (NDCs) offered by national governments to the UN.

The COVID-19 health crisis has catalysed calls for a resilient recovery which delivers on Net Zero and re-starts the economy. This needs coordinated action, underpinned by long-term, stable policy delivered by local authorities, Local Enterprise Partnerships, businesses and the third sector supported by government. This can grow the necessary skills, supply chains, markets and jobs to deliver inclusive, successful local economies that also deliver nature and climate recovery. Local authorities are unanimous in their calls for their economic development role to build back greener, and for devolution of spending to enable them to maximise the co-benefits of a green recovery with Net Zero.

This report is for government policy makers, local authorities, regional organisations and private sector partners.

This report is intended to help government policy makers understand the role local authorities have in delivering Net Zero and how strategies and policy to deliver the Sixth Carbon Budget needs to clearly identify and enable effective place based local delivery over the short and long term.

It is also intended for anyone working in a local authority or combined authority – not just those who work on climate or environment, but finance, economy, transport and health, including Elected Members, Directors and Officers. (Chapter 2 explains how some local authorities are embedding climate change and emissions into financial and policy decision making across the whole council; Chapter 3 outlines the more specific sector decarbonisation actions needed).

This report covers the UK, with policy recommendations on the framework, support and funding alignment for the Government relating to local authorities in England and Northern Ireland specifically.

The focus of this report is on how local authorities can enable action to reduce emissions, however local authorities also have a critical role to play in climate change adaptation. The impacts of climate change that the UK will experience will be determined by global, not UK success at reducing emissions. The climate is already changing, and the UK needs to improve resilience to the climate change which is now inevitable, as well as plan for higher levels of warming that remain likely on the basis of current global ambition to reduce emissions.*

Research for this report has included a wide reaching literature review; engagement with the team of analysts and experts working for the CCC and the Committee itself; representatives of the Department for Business Energy and Industrial Strategy and the Ministry for Housing, Communities & Local Government; Distribution Network Operators, non-governmental organisations, academics and most importantly, engagement with local authorities at all levels and tiers and across a range of roles.

The Association for Public Service Excellence (APSE) conducted a survey on behalf of the CCC into how local authorities saw their role in delivering Net Zero, the opportunities and barriers to delivery and what they are succeeding in so far. Meetings and workshops with the Local Government Association (LGA), APSE, ADEPT (Association of Directors of Environment, Economy, Planning & Transport), The Net Zero Infrastructure Coalition, The Local Area Energy Planning steering group, UK 100 Members, P-CAN and more, underlined local authority ambitions to act now and highlighted their calls to be given greater powers, resources, support and agency to ramp up coverage and scale of delivery.

* County Councils and Unitary Authorities have statutory duties as Lead Local Flood Authorities and all local authorities have a duty to manage risks, including climate risks, under the Civil Contingencies Act 2004. As set out in the National Planning Policy Framework, local authorities have a crucial role in increasing the resilience of buildings and infrastructure in their localities, managing and extending natural resources to promote biodiversity and reduce the risk of flooding, wildfire, water shortages and the effects of extreme heat, as well as protecting their populations from the health impacts of a changing climate. For more information on Adaptation see: <https://www.theccc.org.uk/uk-action-on-climate-change/adapting-to-a-warmer-uk/>

Box 1.1

The CCC's Sixth Carbon Budget advice

The CCC's Sixth Carbon Budget advice consists of three reports: an Advice Report, a Policy Report and a methodology report. The Advice Report and Policy Report will be of interest to local authorities:

- **Advice report:** *The Sixth Carbon Budget – The UK's path to Net Zero*, sets out the CCC's recommendations on the Sixth Carbon Budget (2033-37) and the UK's Nationally Determined Contribution (NDC) under the Paris Agreement. This report also presents the overall emissions pathways for the UK and the Devolved Administrations and for each sector of emissions, as well as analysis of the costs, benefits and wider impacts of our recommended pathway, and considerations relating to climate science and international progress towards the Paris Agreement.³
- **Policy Report:** *Policies for the Sixth Carbon Budget and Net Zero*, setting out the changes to policy that could drive the changes necessary, particularly over the 2020s, including specific policy recommendations for each sector of emissions.⁴

Alongside the Sixth Carbon Budget, the CCC has prepared materials on the business role in the delivery of Net Zero. These will also be relevant to local authorities providing advice to businesses on monitoring and reporting of emissions, and local authorities wanting to purchase renewable energy that adds additionality and support the electric vehicle roll out. These include:

- **Briefing Note:** The role of business in delivering the UK's Net Zero ambition
- **Supplementary briefing notes** which are likely to be useful to local authorities, on:
 - How procurement of renewable electricity can ensure additional renewables are installed in the UK
 - How to accelerate a transition to electric vehicles

These briefings are available on [the CCC website](#).

2. How does national, regional & local governance fit together?

A) What is the government's plan to deliver Net Zero and where do local authorities fit in?

In June 2019 the Government legislated the 2050 Net Zero target, following a recommendation from the Committee on Climate Change. The CCC advises Government on the appropriate level of ambition for the UK's long-term climate targets, including the 2050 target and nearer term 'Carbon Budgets' which set a cumulative limit on emissions over a five-year period. These are then set in law, following which Government is required to bring forward policies to deliver the targets. In December 2020 the CCC advised the Government that the Sixth Carbon Budget (2033-2037) should be set on a pathway of a 78% reduction in emissions by 2035 relative to 1990 levels, as an appropriate contribution to the UK's Net-Zero target.

Government departments must collaborate to develop consistent policy to support the delivery of climate targets.

Individual departments play greater or lesser roles in making Net Zero happen.

Historically, the department for Business Energy and Industrial Strategy (BEIS), the Department for Environment, Food and Rural Affairs (Defra) and the Treasury (HMT) have played important roles in designing UK climate policy. However, The Ministry for Housing, Communities and Local Government (MHCLG) and Department for Transport (DfT) are responsible for policies that affect buildings and transport emissions, and will be increasingly required to put forward a joined-up approach to addressing climate change. Policy and funding decisions risk locking in emissions. This means that even when local authorities want to act, policy and funding blocks their ability to cut emissions (see Chapter 2).

The National Audit Office (NAO) recently reviewed how Government is set up to deliver the UK's Net Zero target, recognising it as a cross-Government delivery challenge, and noting that the Government needs to identify how it relates to other Government priorities. The review noted the need for effective co-ordination between departments, led by BEIS, the Cabinet Office and HMT, the need for Net Zero to be built into all departmental plans and suggested that regular review points be set up that consider the effectiveness of the working arrangements. Additionally, it noted that Government has yet to include other public bodies, such as local authorities, in its coordination arrangements.

The CCC has called for increased collaboration and coordination between different Government departments. For example, MHCLG will need to work closely with BEIS and HMT in delivering new, low-carbon buildings and decarbonising the UK's existing building stock. They also need to design funding schemes that take into account the practical reality in local government. Short bidding windows for very specific targets and rapid delivery deadlines are not conducive to delivering the best outcomes across the widest number of areas. Local authorities echo this call because existing policies, emerging policies, fragmented funding streams and targets sometimes contradict each other, dilute powers to deliver or undermine efforts for place-based integrated action⁵ needed to deliver the pathway to Net Zero.

Local authorities in Northern Ireland mainly receive their messages on climate change from a single department, The Department of Agriculture, Environment and Rural Affairs (DAERA), and lack a coherent overall approach that encompasses all of their emissions sectors across buildings, energy, local transport and waste.

Two of the devolved administrations have their own targets; Scotland has an earlier target of 2045, while the CCC's 2019 advice is for Wales to achieve 95% emissions reductions by 2050, it has an ambition to legislate for a Net Zero target for the same date. Box 1.2 outlines the more coherent approach to national and local delivery in these administrations.

Box 1.2

How the Scottish and Welsh Governments work with local authorities to deliver climate targets

Scotland's 32 local authorities are legally required to reduce emissions and support adaptation to climate impacts. Ministers are legally required to provide guidance to help them in this. From 2022, all public bodies, including local authorities, will now have to set a science-based target date by which they will reach zero emissions, report on how spending plans align with emissions reductions targets and make their annual reports publicly accessible. Scottish local authorities will set out how they aim to use their influence to reduce indirect area wide emissions.

A High Ambition Climate Network of Chief Executives and Elected Members is being established to support delivery by public sector bodies. In support of wider societal change, Scotland also proposes to establish a National Forum on Climate Change using deliberative democracy to achieve greater public participation.

Local Heat and Energy Efficiency Strategies are due to become statutory duties at the end of 2021 and have been piloted in local authorities. These will provide a framework for tackling fuel poverty and delivering decarbonised heat. They build on Scotland's Home Energy Efficiency Programme, which provides national funding and actions coordinated with local authority level delivery.

In **Wales** the 22 local councils have a duty under the Wellbeing of Future Generations (Wales) Act 2015 to place sustainable development at the heart of their work. In 2016 The Welsh Government set out a framework⁶ for the decade showing the steps needed by the Environment Act 2016, Well-being of Future Generations Act 2015 and Planning Act 2015 for Welsh Ministers, Natural Resources Wales, Public Bodies and Other - such as Public Service Boards including annual reporting by local authorities and partnerships. Climate change action in Welsh local councils is increasingly supported by the Wellbeing of Future Generations Act.

The Partnership Council for Wales comprises public bodies to work together to avoid duplication, provide shared guidance and will support local authorities in developing robust evidence-based Net Zero action plans as living documents by March 2021.

B) What are local authorities and why does it matter whether they fit in the national picture or not?

Local authorities find themselves in an ambiguous position as to their role in tackling climate change and where they fit into a coherent national picture. Local authorities (in England and Northern Ireland) do not have a duty to deliver Net Zero nor to report emissions reductions, but in many cases are already delivering emissions reductions, or taking actions which affect how Net Zero might be achieved by other public bodies and businesses. The lack of any expectation or duty on local authorities to deliver emissions cuts through their activities and spending means that climate change has not always been prioritised by local councillors and local authorities.

In practice local authorities are a combination of public service delivery bodies (part of UK plc) and publicly owned enterprises operating for local benefit (like not-for-profit companies).

- **They are highly regulated organisations with nationally set statutory duties to deliver specific services**, to implement national policy and regulation and have to provide data⁷ reporting to government on a range of issues including schools, housing, social care and waste. According to the Local Government Association, local councils deliver over 800 services.
- **They are locally democratically accountable to their residents.** Local authorities know their local areas and believe they are best placed to devise solutions to problems. They do not generally seek more duties or burdens unless they are fully funded. They do not want to be performance managed by government.
- **They are often perceived to have more responsibilities and powers than they do.** Local authorities are where the public and businesses turn in emergency, hardship and when something nasty needs clearing up. When things go wrong, they are also the organisations the public tend to blame. The local council is often the target for campaigns, such as recent climate demonstrations.
- **They have a large degree of freedom to act, trade, innovate** and deliver additional services for the benefit of their communities.* For example, additional powers for borrowing and investment, and a duty to deliver Social Value, has enabled local authorities to provide mortgage support, home improvement loans, establish regeneration companies, housing corporations and energy suppliers and to invest in energy and property.

Unlike businesses, local authorities have to run balanced budgets and cannot borrow for day-to-day spending. However, they can undertake longer term borrowing at low rates, for example, for capital programmes. Around 40% of local authority income is from Council Tax, nearly half from government grants and the rest from business rates. Well over half of these resources are spent on education services and adult and children's social care much of which is allocated in ring-fenced grants.

Between 2010 and 2017 Local authorities saw central government funding halve and a real-terms reduction in spending power (government grant and council tax) of around 30% while demands on their services have risen.⁸

* Under the General Power of Competence introduced under the Localism Act of 2011 local authorities are permitted to do anything an individual may do, as long as it is legal and does not contradict previous laws.

The COVID-19 pandemic has made local authorities even more committed to tackling the Climate Emergency.

Surveyed local authorities use a very wide range of sources to inform their activities on climate change.

Significant time and expertise are spent extrapolating from national to local data, dealing with contradictory information and working out what they should do.

The COVID-19 health crisis has significantly changed the high street making reliance on premises business rates potentially unsustainable as a basis for council budgets into the future. Despite this, many local authorities are prioritising climate action, not only to tackle the climate emergency, but to realise the economic, health and local resilience benefits.

Surveyed local authorities use a very wide range of sources to inform their activities on climate change. They get information primarily from BEIS data, APSE, Ashden, the Local Government Association (LGA), SCATTER, The Carbon Trust, the CCC, the IPCC*, ADEPT, Salix, other local authorities, universities, consultants and sector specific sources, like WRAP. This pool of resources is constantly being added to. This means significant time and expertise is spent extrapolating from national to local data, dealing with contradictory information and working out what they should do. This can lead to a reliance on consultants for tasks like emissions reporting, which is costly and can hinder capacity development within the local authority. This duplication of effort and expense would be better spent on delivery. This particularly affects smaller local authorities with a small number of staff coordinating action on emissions reductions. Without strategic guidance from Government, as part of a dialogue about how local and national climate strategies fit together, local authorities may miss opportunities to co-ordinate actions with neighbouring local, and national, strategies towards Net Zero. A Government framework, outlining how local authorities fit into the national picture, and highlighting opportunities for coordination, could be an effective tool.

Government communications directly relating to local authorities on climate change tend to be from specific government departments on narrow policy areas and information made available through narrow sector specific datasets. Apart from the BEIS local area emissions data a joined-up picture is not provided. Local authorities have to search around in strategy documents to work out where they fit in. A role often left to those already focused on climate action. Government needs to put Net Zero at the foreground of strategies so that regional and local leaders and decision-makers do not see climate action as optional after economic development, but as a core part of it.

While local authorities are entirely free to develop their own targets, action plans, investments and solutions (and are doing so), the lack of an overall framework or cohesive approach could hinder the delivery of Net Zero by:

- Duplicating efforts and expense
- Creating diverging pathways which do not fit into a sustainable energy plan and which do not provide sufficiently strong signals to support investment in new skills and technologies from the supply chain
- Being dependent on very strong leadership and exceptional skills
- Risking a loss of confidence with senior leaders and Elected Members, wondering if they are doing the 'right thing'
- Exposing local authorities to unnecessary risk, because national policy may be about to undermine what they are planning to do
- Perpetuating policy uncertainty, making it hard to create an investment environment that is sufficiently de-risked to attract private investment
- Failing to scale investment opportunities to be of sufficient size for investors, particularly for smaller authorities.

* The Intergovernmental Panel on Climate Change (IPCC)

Box 1.3

CCC Progress Report to Parliament 2020

The CCC's Progress Report to government in June 2020 highlighted that decarbonisation is a cross-cutting issue and there are complex interactions between different sectors. As deeper decarbonisation continues, the buildings sector offers a good example of the wide range of departments that will need to be engaged and co-ordinated.

- The Department for Business Energy and Industrial Strategy (BEIS) will need to make national-level decisions on how to decarbonise the existing building stock (e.g. the future of the gas grid) and design mechanisms to drive a major scale-up in low-carbon heat and energy efficiency. BEIS will also have a key legislative role in gas sector legal requirements, energy network company licence obligations, gas or electricity market reforms and the legal status of interconnectors.
- HM Treasury will need to determine how these measures will be financed, balancing the financing of costs between taxpayers, billpayers and building owners (e.g. landlords).
- The Department for Education and the Institute of Apprenticeships, along with BEIS, will need to consider how to build the skills in the workforce required to deliver a low-carbon housing stock.
- Devolved Governments and the Ministry of Housing Communities and Local Government will need to implement building standards and energy efficiency policy, ensuring that these take into account safety, climate resilience and indoor environmental factors at the same time, so that an improvement in one is not to the detriment of another.
- Local authorities will need to enforce regulations, deliver low-carbon public housing and ensure the impacts of any new developments on wider local services (e.g. public transport) are considered. They should also have a key role in local area energy planning. Ofgem and the network operators will also have important roles to play.

Local authorities have underpinned the local response to the COVID-19 health crisis and are at the forefront of calls for a resilient, green recovery.

Box 1.4

Local authority response to the COVID-19 pandemic

The COVID-19 pandemic has impacted society and the economy severely, lives have been lost and the fall-out is not yet fully understood.

Local authorities have underpinned the response at a local level, supporting local people and businesses while endeavouring to deliver services under severe restrictions. They have also been heavily impacted financially and are facing a shortfall on their budgets for the coming years.

The sector is at the forefront of calls for a resilient, green recovery to ensure measures to support the economy align with Net Zero. They are seeking to maintain some of the low-carbon behaviours that have resulted, such as cleaner air and increased home working, reduced food waste and greater levels of recycling, while investing in the green spaces and woodlands that people valued so much under lockdown. Local authorities are devising ways to increase the supply chain jobs and skills for home energy efficiency retrofit across the country and for land-based skills in forestry, land management and farming. They are also looking at supporting market development through tackling barriers to uptake in home energy efficiency and barriers to people transferring from declining sectors to new jobs, through work in housing, education and business support.

The commitment to tackle climate change remains stronger than ever, as climate is firmly on the priority list with public and local authorities. A poll of ADEPT's members in July 2020 showed that most aimed to deliver on their climate plans at the same rate or faster than before the pandemic. Though welcome, some of the funding provided in response to the pandemic was made available at short notice, leaving some councils struggling to implement schemes for walking and cycling routes or energy efficiency because capacity was under strain.

It is clear that longer-term strategic funding is needed to allow project development, planning and engagement followed up by work with the supply chain to deliver the long-term benefits for local areas.

This should not put HMT off spending on these important measures. However, it demonstrates that councils must either have projects and schemes ready for when funding is available. And it highlights that local authorities need more capacity to develop and deliver projects. The Government should understand that longer-term strategic funding enables much higher quality project development, planning and engagement. It also leverages in greater benefits and private investment as it can be accompanied by supply chain support and investment in skills over the longer term.

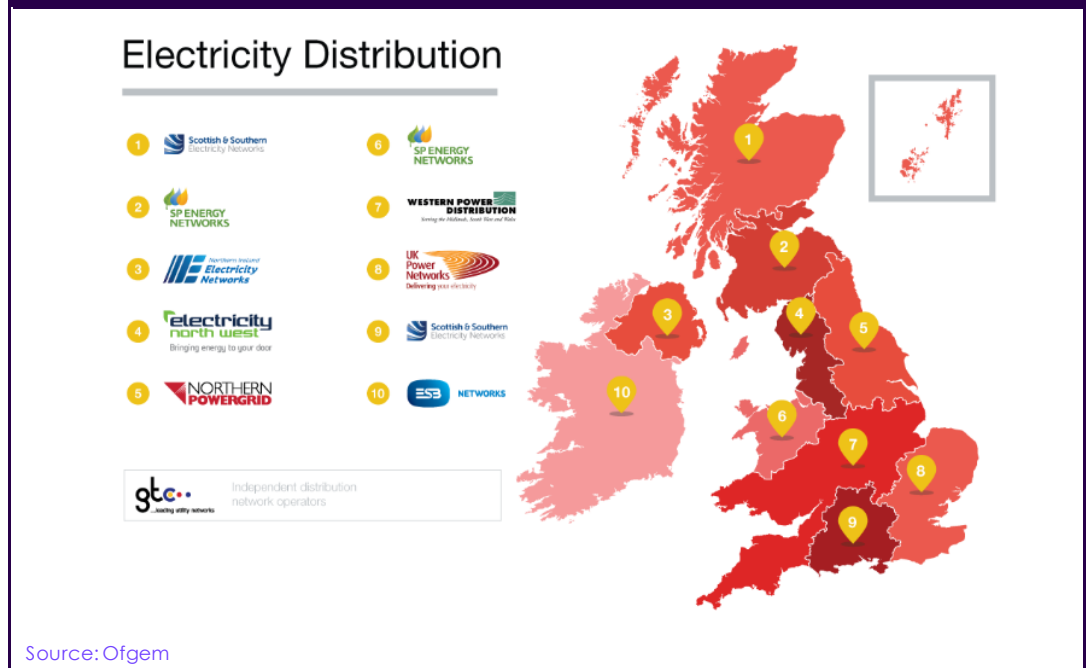
C) How do regional organisations fit into the picture?

Regional organisations also have a key role in delivering Net Zero and adaptation. They cover a large number of local authority areas, so engaging with all of the local authorities individually is not always straightforward, this can be a missed opportunity to deliver emissions cuts. The critical cross-cutting organisations are the electricity Distribution Network Operators (DNOs), District Gas Distribution Networks and Local Enterprise Partnerships (LEPs) in influencing the transition and partnering with local authorities to deliver their Net Zero plans.

Electricity Distribution network operators (DNOs) operate across 14 areas (some DNOs cover more than one area). DNOs are developing Net Zero targets, scenarios and investment plans for their next regulated investment period. This will dictate permitted levels of investment in the electricity grid to deliver the additional demands of increased renewable generation, electric vehicle charging and heat decarbonisation. DNOs are key partners in local area energy planning, and are innovating for smarter, flexible, low-carbon local energy markets and grids.

Fig. 1.1

Map of Electricity Distribution Network Operators (DNOs)



The CCC's policy report notes that delivering a mix of solutions to displace gas heating - and in particular any regional role for hydrogen in the gas grid - will not be achievable without a strategic, coordinated and planned approach. Institutional frameworks will need to evolve, and national, regional and local decision-making frameworks will need to be determined in order to deliver this.

Regional and local area energy planning and engagement can also minimise disruption and inform timely network investment.

DNOs providing evidence to the CCC for the Sixth Carbon Budget stressed the need for careful coordination and forward planning if this is to be achievable – and to control costs. It was noted that significant cost savings could be achieved where EV and electric heat rollout is planned and coordinated such that streets only need to be dug once for cable upgrades, with one DNO quoting 85% of the costs of low voltage upgrades being excavations.

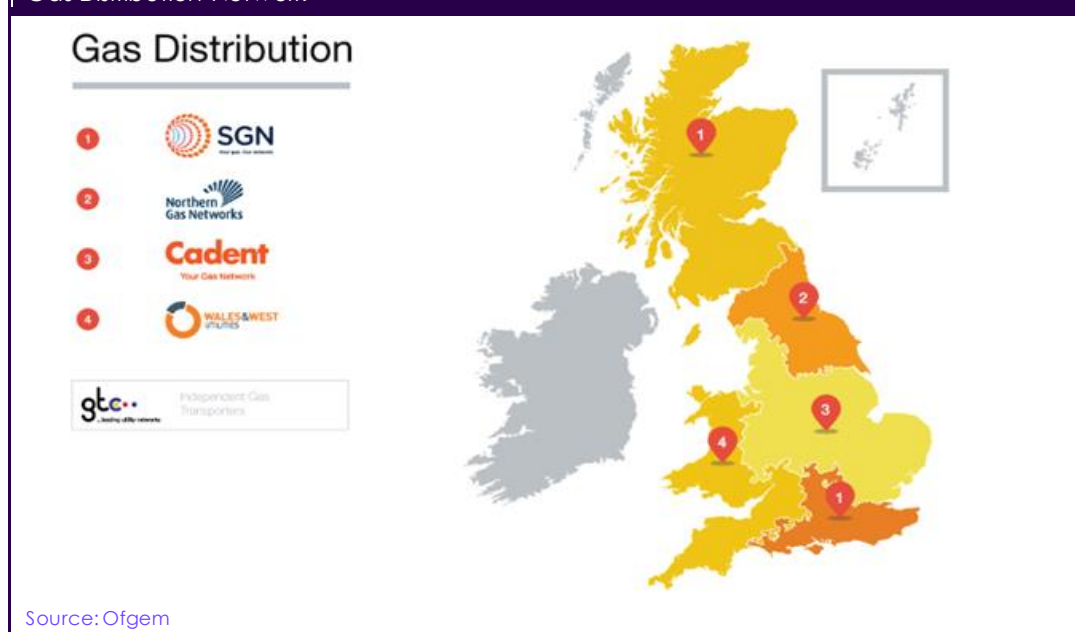
Electrification of vehicles and heat in homes in businesses in the CCC's scenarios is likely to substantially increase demands on the UK's electricity system. In particular, this is likely to require upgrades to electricity distribution networks to allow for increased capacity. It is vital that local authorities and DNOs work effectively together to plan for this. Local area energy planning and changes in energy governance are expected in the decarbonisation of heat in particular (See Chapter 3, Buildings).

DNOs play an important role on innovation projects, often partnering with local authorities through their Innovation Network Allowance scheme and Competition. Some DNOs have a separate enterprise business, separate from the regulated business, such as SSE Enterprise which has greater freedom to partner with local authorities on commercial energy market projects, such as the smart energy system projects with Peterborough City Council and in Greater Manchester.

Ofgem will need to continue to support DNOs in innovating with local areas to deliver a grid fit for Net Zero, with flexibility and storage on the system. This will include investing in areas to get them ready for Heat Pumps, especially on retrofit schemes, new large-scale housing sites and commercial developments.

DNOs have improved their customer and stakeholder engagement activities significantly over the last few years and carry out regular meetings and events to involve customers and generators in their future plans.

Fig 1.2
Gas Distribution Network



The Gas Distribution Network is operated by four companies. While biogas and hydrogen is being introduced to the gas grid, it is likely that gas will continue to be used either directly, or as a back up to hybrid heat pumps in the medium term, and that some areas of the grid may see reduced usage in favour of electrified heat. Some parts of the gas grid may also be converted to use low-carbon hydrogen, instead of natural gas.

Though the CCC doesn't recommend a full conversion of the gas grid to supply all heat in buildings, the CCC Policy report calls, in the immediate term, for a better understanding at a national level of suitable candidate areas for hydrogen – together with areas which are clearly unsuitable – to help target investment in the gas grid better and enable targeted progress on electrification. It suggests that BEIS and Ofgem would be well-placed to collaborate on a major study to identify prime candidate areas for hydrogen or full electrification, with input from networks on current capacity.⁹

Local Enterprise Partnerships (LEPs) are an underused driver for delivering Net Zero.

England's 38 LEPs all cover several local authority areas, or single Combined Authority areas. They are not statutory bodies but are business-led partnerships between local authorities and local private sector businesses. Their role is to deliver economic growth across the local area and decide what the priorities for roads, buildings and facilities should be.

LEPs receive significant funding from government; £9.1 billion in Growth Deals from 2010 to 2019. The Ministry of Housing, Communities and Local Government is accountable for most of the Local Growth Funds, but LEPs have a large degree of freedom in deciding where to focus spending. MHCLG has introduced a green principle which stipulates that, where possible, funds should not contradict the government's climate change efforts.

In 2018 each LEP received funding from BEIS to develop an energy strategy, these enabled LEPs to consider the role of energy and to inform the clean growth elements of their Local Industrial Strategies. However, they were not detailed enough to deliver the level of change needed in the energy system for Net Zero. LEPs operate Growth Hubs, and fund universities and local authorities to provide support to businesses, including resource and energy efficiency advice to businesses and growth support to the low-carbon and environmental sector. LEPs vary in size, resource and priorities, with some putting much stronger focus on Net Zero and clean growth than others. LEPs and local authorities could work in greater alignment to realise low-carbon economic development, and foster greater opportunities for investment, including in heat decarbonisation, rather than simply clean energy.

Box 1.5

LEPs using the Getting Building Fund for low-carbon projects

£900 million Getting Building Fund projects are expected to save 65,000 tCO₂/year through investment in developing brownfield sites, group repairs for housing retrofits and transport infrastructure investment such as park and ride, cycle infrastructure and greening public realm. However, a significant number of funded projects are not carbon-saving and have the potential to lock in emissions in the longer run.

3. Local authority powers, levers & blocks to delivering Net Zero

Local authorities directly contribute between 2 - 5% of their local area emissions and their place-shaping powers and actions potentially influence around a third of UK emissions principally in the buildings, transport, waste and land-use sectors (See Chapter 2). Depending on their policies, priorities and resources, they can either accelerate or slow the Net Zero transition.

Table 1		
Councils in England	Number	Responsibility
District Council	192	Building Regulations, Council tax and business rates, Planning, Housing, Parking, Waste collection, Environmental Health, Economic Development, Sports centres, parks and playing fields
County Council	26	Highways, street lighting, traffic management, Passenger transport and transport planning, Strategic Planning, Waste disposal, Parking, Emergency Planning, Trading Standards (including Energy Performance Certificates), Education, Economic development, Public Health, Social Services
Unitary & Metropolitan	55 & 36	All of the above
London Boroughs & City	32	All of the above
Scottish Councils	32	All of the above
Welsh Councils	22	All of the above
Northern Ireland	11	Housing, Planning, Improving & maintaining regional & local roads, Libraries, Environmental Protection, Waste collection
Combined Authorities	10 plus GLA	Varies due to devolution deals but can include: Transport, Spatial Planning, Environment Strategy, Employment and business development, Mayoral Development Corporations, Further Education & Skills

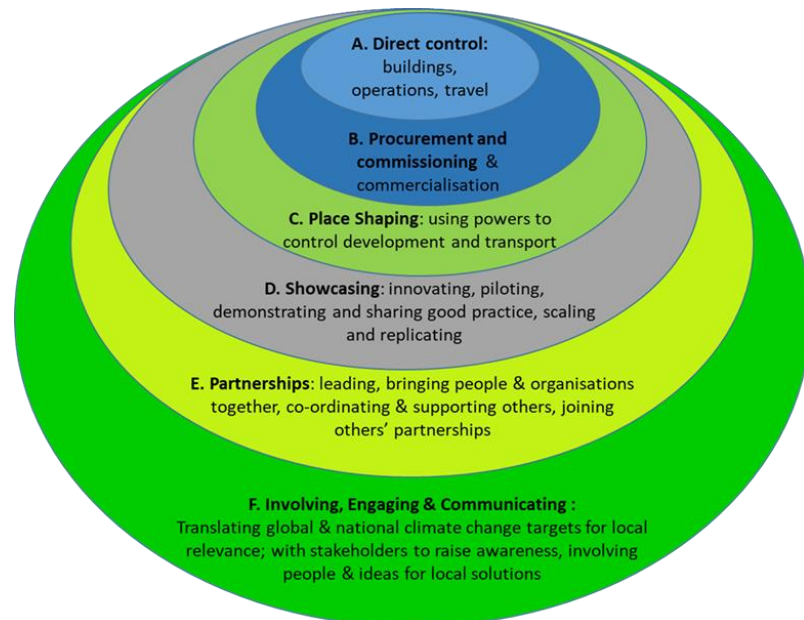
Local authority control, leverage and influence spreads out from direct services and contracts through its policy and enforcement duties to its leadership and convening role in the wider area. As ability to control emissions reduces further away from its own operations, the quantity of emissions increases, so the enabling and influencing role of a local authority has an important impact on a significant proportion of UK emissions.

Local authorities also play a wider enabling and communications role, engaging communities, public sector and business partners in area-wide conversations and about climate change and the route to Net Zero. This impacts on the delivery of skills and jobs which are needed to be ready to tackle the transformation. This wider leadership role can influence local people and businesses to take action themselves.

Figure 1.3* and corresponding sections below explore the powers and influence local authorities have to reduce emissions and the blocks that impede them. Removing these blocks and putting in place policy to maximise local delivery is a key recommendation from this report.

* Based on internal Centre for Sustainability model and amended for this report.

Figure 1.3 How local authorities control and influence emissions



Source: Coxcoon, R. & Roberts, S. (2020) *Climate Action Planning Tool for Local Authorities*, Centre for Sustainable Energy. <https://www.cse.org.uk/news/view/2541>

A) Direct control over buildings, estate and fleet

Local authorities have direct control over emissions resulting directly from energy used in council operations, buildings, fleet and electricity purchased. This is about 2 – 5% of local area emissions.

Local authorities have direct control over emissions resulting directly from energy used in council operations, buildings, fleet and electricity purchased.

The emissions profile for different types of local authorities vary by the functions they provide. Some own large estates, some directly provide services such as waste collection, some own housing stock, and others have contracted out most services. The way local authorities deliver their functions and services has a direct impact on their level of emissions, and their ability to reduce them.

- The density, location and types of buildings dictates the viability of heat networks.
- The distances staff and customers have to travel impacts emissions from vehicles and travel distances for waste collection vehicles affects the options for low collection vehicles.
- The type and quantities of waste generated affects what can be viably collected for recycling and the local landscape and land use dictates the potential to deliver emissions savings through trees, greenspace and woodlands.

Electricity purchased by Local Authorities was, on average, around one third of a local authority's total direct emissions in 2018, however this proportion will decline in line with the decarbonisation of the electricity grid.

What can local authorities do about direct emissions?

Local authorities can deliver energy efficiency improvements and install renewable energy on their own estate.

Local authorities have taken actions to reduce emissions including improving building energy efficiency, procuring 'clean' or renewable electricity, installing renewable energy systems, upgrading street lighting to LEDs and switching vehicle fleets to EVs.

Installing energy efficiency projects requires sufficient staff to devise and manage projects, and funding availability, often delivered through invest to save schemes that repay into a capital pot from the savings made. The Government has recognised the capacity issue in local authorities in its Public Sector Decarbonisation Skills fund.

Local authorities can borrow and invest and under the General Power of Competence can establish companies such as housing and energy schemes.

Underpinning many local authority activities to tackle emissions is the General Power of Competence, provided under the 2012 Localism Act, which permits local authorities to undertake any activity an individual can take as long as it is legal and does not contravene existing legislation and regulation. Alongside their Borrowing and Investment powers, the General Power of Competence means authorities can establish companies, and this enables them to deliver energy and housing investments. Additionally, local authorities are permitted to generate and sell energy. Some local authorities own, or part own, airports, many own business property and all will hold pension funds (see below).

Local authorities have Levy raising powers, and can hold a referendum to raise Council Tax for an increase of more than 3%. For example, Warwickshire County Council was due to hold such a referendum in May 2020 (postponed due to the COVID-19 pandemic) to establish an annual £3 million ring-fenced Climate Action Fund, created through a progressive increase in Council Tax, which would see a Band D household contributing an additional £1 per week. Had it taken place, this would have been the first of its kind. See Chapter 3, Transport, for a similar example of Nottingham City Council's Workplace Parking Levy.

Local authorities have other levers such as Council Tax or Business Rate discounts to incentivise energy efficiency investments by households and businesses, however, these have not been used to incentivise energy efficiency take up, possibly because budget-constrained local authorities would lose income from such schemes. They may be perceived to be unfair because they reward those already able to pay. Through the five Local Energy Hubs, BEIS provided grant funding to eight local authorities to test fiscal means of encouraging homeowners to improve the energy efficiency of their houses and is currently analysing the findings of these studies.

B) Procurement, commissioning and commercialisation

Procurement is a key power that local authorities can use to deliver Net Zero, particularly in larger contracts and purchases as they have a duty to deliver best value and social value. In 2017 47% of local government spending was in procurement. Procured goods and services can make up 70-80% of a council's total carbon footprint, due to the use of contractors for waste collection, construction, social services and facilities management.

The length of time of local government contracts may also be a factor in the extent to which emissions reductions can be delivered in procurement. In 2016/17 over half of local government contracts were for under one to two years meaning that it is not worth the supplier making investments to deliver carbon savings; while more than 30% of the contracts were for between four years or more and 5% were for more than five years – making investment in savings worthwhile perhaps, but also risking locking in emissions if climate change is not considered at the procurement scoping stage. In light of the economic downturn and severe impact on local authority budgets, it may be less likely that multi-year commitments are made, but it may be more likely that existing contracts with an option to renew are extended to reduce procurement costs – either way there is a risk of locking in emissions and missing opportunities to oblige suppliers to make emissions cuts.

A survey conducted for this report showed that most local authorities are either taking account of carbon impacts in decision-making or plan to do so. County Councils were the least likely to account of carbon impacts but are starting to do so. Hampshire County Council and Cambridgeshire County Council are developing approaches, with Cambridgeshire currently using a 'shadow' carbon price. Most respondents were also taking account of co-benefits such as air quality, health and biodiversity when thinking about climate action, and are taking this into account more and more in their decision-making. For example, Manchester City Council has recently added a 10% weight for carbon reduction alongside a 20% for social value its procurement assessment criteria, while all projects coming forward for capital investment have to include an assessment of their carbon impact as part of the financial approval process.

Local authorities are identifying opportunities for innovation in procurement and commissioning, and an increasing number of local authorities are integrating climate action with community wealth-building approaches, for example through local food networks, community renewable energy schemes on public buildings and social housing and through creating smaller procurement lots for energy efficiency works to enable local suppliers to bid for contracts. Barriers to increasing low-carbon procurement in local authorities include insufficient resources in procurement teams, and the fact that many small businesses that supply local authorities and councils may not report, or invest in reducing their emissions.

Box 1.6

ECO Help to Heat Flexible Eligibility

Energy Company Obligation (ECO) Help to Heat Flexible Eligibility means that local authorities can develop Statements of Intent allowing them to identify people on low incomes or who are vulnerable to cold conditions for ECO energy efficiency measures. 25% of ECO can be accessed in this way. Local authorities then work with the energy companies to refer people for measures. YES Energy Solutions is a community interest company that span out of Kirklees Council in the 2000s. It now works nationally with local authorities, housing providers and energy companies to deliver ECO. It supports local suppliers in becoming compliant to deliver ECO and other nationally funded schemes to retain local spend in local areas.

Local authorities are increasingly turning to commercial opportunities to deliver the levels of investment needed to transform their local areas for Net Zero. This requires high levels of leadership support, skills and capacity and knowledge of investments and increasingly are moving beyond PWLB loans towards social investors and Green Finance. UK 100's July 2020 report Accelerating the Rate of Investment in Local Energy Projects identified the potential to unlock over £100 billion of investment in local energy systems by 2030 through partnership approaches enabling industry and private capital to work with UK local authorities to scale up investment initiatives. This requires £5 billion development funding and increased capacity along with consistent policy support and market clarity.

The role of local authorities in driving economic development and attracting private investment aligns with the identified need for significant private sector investment into delivering Net Zero. Leading local authorities, especially members of Core Cities and the Resilient Taskforce are calling for greater powers to deliver this change.

Local authorities are delivering carbon savings whilst generating revenue, and others are delivering carbon savings alongside housing, energy efficiency and heat schemes working in partnership with investors and developers. Many authorities invested in renewable energy generation over the past decade. New examples are:

- West Berkshire Council issued the first Community Municipal Investment through a Bond offer raising over £1 million from 600 investors, a fifth from the local area, to finance solar, LED lighting, cycling routes and environmental investments.
- Bristol City LEAP will establish a joint venture between the City Council and a strategic partner to deliver more than £1 billion of investment towards Bristol becoming a zero-carbon, smart energy city by 2030.
- Seventy-eight local authorities have established housing corporations to build homes for rental and sale.
- Greater Manchester's Environment Fund will support the development, scale and verification for carbon and habitat banking, aiming for a £5 million annual turnover to finance new habitats, tree planting and peat restoration.

Where local authorities can align commercial ventures and investments with their net zero ambitions, this has the knock-on effect of fostering a local supply chain and skills, informing planning teams of what is possible and proving that low-carbon developments can be viable in a local area.

For local authorities with airport investments see Chapter 3.3 Transport.

Box 1.7

Pension Fund Divestment

Pension funds are under increasing pressure to divest from fossil fuels and carbon intensive investments, to both tackle climate change and to address climate risk exposure. 2017 research for Friends of the Earth¹⁰ found that UK councils are investing more than £16 billion of pension funds in fossil fuel companies. Southwark, Islington, Lambeth and Waltham Forest Council pension funds have divested from fossil fuels and Southwark Pension Fund in 2019 invested £65 million¹¹ in renewable energy funds.

In 2020 the Department for Work and Pensions consulted on policy proposals¹² to require trustees of larger occupational pension schemes and authorised schemes to have effective governance, strategy, risk management and accompanying metrics and targets for the assessment and management of climate risks and opportunities. It also invites responses on proposals to disclose these in line with the recommendations of the international industry-led Task Force on Climate-related Financial Disclosures (TCFD).

Local authority and public sector pension funds should consider applying these principles or should consider investing in net zero aligned schemes within their legal duties.

C) Place-shaping

The Local Authority role in delivering Net Zero through place shaping is crucial. Local authorities have a long list of statutory duties and powers that shape the local area and its economy through its buildings, travel patterns and transport systems, what happens to waste and recycling and natural environment.

Many local authorities are using their powers creatively to deliver despite blocks from other policies or gaps in powers.

Local authorities are wary of the threat of legal challenge, this means to make confident use of their powers, they have to undertake rigorous legal checks, which slows delivery, adds expense and makes some of them risk averse. Where there are powers, for example in the National Planning Policy Framework for sustainable development or in going beyond part L, requiring Sustainable Urban Drainage or low-carbon heating in developments, there are often counter policies on housing targets and viability that prevent their use and leave the authority open to appeal or challenge. Even changes to parking charges can attract legal challenge.

Strong, clear policy and underpinning regulations from government, such as Building Regulations can make action less open to challenge at a local level. Similarly, austerity has impacted local authority abilities to use their powers in many areas, particularly in smaller authorities as staff are cut back, and specialist staff are lost. They are also likely to be risk averse, not wanting to go through costly legal procedures.

This section covers the powers, levers and blocks that local authorities have in place-shaping role including:

- i) Spatial Planning
- ii) Planning new buildings
- iii) Existing buildings
- iv) Transport
- v) Land use

i) Place-shaping: Spatial Planning

Local planning authorities have the potential to secure sustainable, well-adapted, low emissions developments that are well-connected to bus routes and walking and cycling networks. Yet there is a policy intention and delivery gap. The survey conducted for this report suggested that Spatial Planning was one of the biggest opportunities that local authorities have to deliver Net Zero, but that the National Planning Policy Framework, the method of calculating housing targets and viability rules undermine local authorities' ability to require developers to build high quality low-carbon developments in sustainable locations. This is particularly acute in areas with low land values. The expansion of permitted development rights by passes the role of local planning authorities to secure low-carbon or good quality housing.

Energy planning and spatial planning need to become integrated. Spatial planning and energy planning are not integrated. Indeed, there is no national approach to energy planning and different strategies and methods are used in England, Wales and Northern Ireland. Scotland is introducing Local Energy Efficiency and Heat Strategies. There are growing calls to increase local authority powers to enable systems-thinking and holistic delivery of energy systems, low emissions developments and smart energy systems, particularly in cities.

Most local plans do not acknowledge the extent of the challenge of delivering Net Zero¹³ and need significant revision. CSE/TCPI analysis of Local Plans has found that only a third of Local Plans had binding carbon policies or objective standards for energy efficiency or emissions reductions. All the Core Cities plans contained such provisions. In terms of heat decarbonisation, some Local Plans include heat maps and policies favouring district heating or heat electrification but do not include site allocation or require evidence of energy planning concurrent with masterplanning on new developments.

Evaluation of heat network projects funded by the Heat Networks Delivery Unit found that local authorities with potential heat network projects find developers to be extremely hard to engage with on district heat, meaning that in new developments opportunities to install low-carbon heat are missed.

The CCC's Policy Report states that delivering a mix of solutions to displace gas heating, and in particular any regional role for hydrogen in the gas grid, will not be achievable without a strategic, coordinated and planned approach. Institutional frameworks will need to evolve, and national, regional and local decision-making frameworks will need to be determined in order to deliver this. Regional and local area energy planning and engagement can also minimise disruption and inform timely network investment. In the immediate term, a better understanding of areas suitable and clearly unsuitable for hydrogen will help target investment in the gas grid better and enable targeted progress on electrification. BEIS and Ofgem are encouraged to collaborate on a major study to identify prime candidate areas for hydrogen or full electrification with input from networks on current capacity. This would help local areas to deliver heat decarbonisation in a managed way.

Area-based Energy Planning is not the whole solution, but underpinned by a robust methodology, it can provide better information to facilitate the process and is a hook to engage the public. A coordinated and planned rollout will also ensure that electricity network upgrades can be delivered in time and at reasonable cost.

The CCC Policy Report outlines options to address the governance gap over the 2020s and facilitate decisions on the future of the gas grid in different parts of the UK include Pathfinder Cities and other regional and local demonstrators, a new body for Heat Delivery and heat zoning.

- **Local planning authorities have powers to support and determine renewable energy generation in their areas.** In England, since 2015 when the Written Ministerial Statement on wind was made, local and/or neighbourhood plans have to identify sites suitable for wind generation, something many plans do not include, this is holding back new onshore wind generation. (See Chapter 3, Power).
- **Planning powers can reduce or increase transport emissions.** Local Planning Authorities have powers to decide where to site new developments and regeneration. This directly influences the levels of car use, including deciding sites for commercial developments and consolidation centres (See Chapter 3.3 Transport). Despite these powers, the focus on delivering housing can lead to car dependent estates, the leverage planners have to make these more sustainable and aligned with Net Zero in terms of transport but also building emissions and green space is relatively weak.
- **Combined Authorities and County Councils can influence emissions through wider spatial planning policies and guidance** (e.g. the London Plan, Greater Manchester Spatial Framework, Local Transport Plans). Some Combined Authorities and Mayoral Authorities have devolved powers and can set their own higher standards as the London Authority has done with its zero carbon buildings standard, its carbon pricing and policies put in place at the Greater London scale. This enables London Boroughs to deliver local plans that are equally ambitious. Spatial frameworks also influence emissions through the provision of green space and transport networks. They remove the need for the duplication that takes place in evidence gathering for smaller Local Plans, and give developers a clear signal of what is required area wide.

Area spatial plans and standards can align with wider transport and energy planning to create places for Net Zero, and would avoid all the planning authorities from developing an array of different standards.

Box 1.8

Transport for New Homes

Transport for New Homes' 2020 research¹⁴ into 20 garden villages and towns found that they are creating up to 200,000 car dependent households.

"Most are planned in the wrong locations, far from town centres and rail stations. They lack local facilities and their streets are designed around car use. Funding for walking, cycling and public transport is missing."

-Transport for New Homes (2020)

Box 1.9

Power Shift, UK100

Power Shift, UK100's analysis* of the powers local authorities have to act on the climate emergency outlines the powers required by local planning authorities to deliver systems-based area wide planning for Net Zero:

- Strategic Planning role for larger areas not covered by Combined Authorities to share resources and evidence.
- Local Area Energy Plans: Powers or regulation to co-ordinate the delivery of net zero heat zones and Planning powers or a regulation code to insist on certain types of technologies (and ban others) in new and existing buildings in the net zero heat zones.
- Powers to require buildings to connect to district heating schemes in identified district heating zones and to require existing developments to connect.

ii) Place-shaping: Planning New Buildings

Local Planning Authorities set the policies that define the need for development and acceptable standards, provided these can be justified within the national policy context. They have to include mitigation and adaptation in Local Plans, yet the National Planning Policy Framework and Guidance does not enable them to secure developments fit for the future. Current powers in place mean they can set higher energy efficiency standards than current building standards (up to 19% above current Part L) and requirements for renewable energy. Some local authorities require larger developments to meet conditions on energy consumption and emissions, however some Local Plans seeking to secure zero carbon developments have been weakened by viability clauses at inspection.

Using building regulations rather than planning negotiations with developers would be the most effective way to deliver development compatible with the Net Zero transformation. Even where planners can require near to, or Net Zero, developments, clearer definitions of Zero Carbon design are needed, as planners are not clear on this. The LETI Climate Emergency Design Guide¹⁵ is a good example of an area taking the initiative on zero carbon design.

A fundamental obstacle to delivering carbon savings is that new buildings are built to the Building Standards of the time planning consent was granted, leading to homes being built on out-dated standards. For example, in 2019 over 14,000 new homes (6%) achieved an EPC rating of D-G¹⁶.

* Power Shift will be published in January 2021 by UK100

Local authorities have a duty to enforce Building Regulations through Building Control. Building Standards provide the minimum enforceable standard of energy performance at the building design stage and Building Control surveyors have a practical role in the delivery and enforcement of standards including closing the as-built energy efficiency performance gap. The Building Control function has been deregulated, so private accredited building inspectors also operate. Stronger resourcing and training are needed in the sector so that Building Control officers can enforce standards. Post-occupation energy performance is also needed in new buildings to close the design-performance gap and make developers more accountable.

Local authorities have increasingly been building their own housing¹⁷, leveraging land owned and regenerating areas of towns and cities. Local authorities have a suite of powers enabling them to become developers. This is motivated by the drive to meet local housing needs, particularly social, affordable, lifelong housing and to improve standards. In building their own homes, local authorities can gather evidence on viability which can be shared with planners in a bid to improve standards in the private building sector. RTPI research¹⁸ by UCL in 2019 found that 42% of authorities reported having a local housing company. 83% of authorities with a company had a wholly owned housing company whilst 34% of authorities with a company had a joint venture housing company (with 7% having both).

They are often building to higher standards including up to Passivhaus standard and demonstrating that at scale, this can be done at minimal or no additional cost. Councils with their own wholly owned housing development companies can deliver low-carbon heating systems before they are required by national policy. Zero carbon council housing projects and finance teams should help planning teams to understand the full cost saving implications of zero carbon homes so they can share learning with developers, and use this evidence in Local Plans. Local authorities therefore have a key role in driving up standards to deliver Net Zero homes.

Box 1.10

Local authorities build a small proportion of new dwellings, but at higher standards

In 2018-19, it is estimated that Private Enterprise delivered 77%, Housing Associations 21% and Local Authorities 2% of new build dwellings¹⁹.

Box 1.11

Council developers building to low-carbon standards

Shropshire Council's HECA return gave the reason for establishing its own housing company as providing homes with higher energy efficiency standards. Other examples of low-carbon innovation include:

- Nottingham's Trent Basin, which has a 2MW community battery and urban solar farm; RIBA award-winning Passivhaus developments in Norwich and Bristol
- Design competition run by Croydon's housing arm, Brick by Brick, committed to One Planet Living²⁰ which sought designs for affordable zero carbon homes to regenerate and form inclusive local communities.
- Exeter City Council's housing company, Exeter City Living is providing that for over 100 units, PassivHaus is at parity with current building standard costs
- Swansea Council²¹ has developed its own 'Swansea Standard' for its own building projects and retrofit.

iii) Place-shaping: Existing Buildings

Local authorities have power or strong influence over a small proportion of homes and commercial property, directly over council housing (7% of homes in England), and indirectly over social housing (10% of homes in England). Local authorities and social housing providers are active in delivering improvements, but installing energy efficiency and low-carbon heating in these homes is subject to funding constraints. Additionally, regulations around service charges and rents make it difficult to recoup investment costs from residents' energy savings.

Improving energy efficiency in private rented homes will be important in delivering Net Zero. Local authorities have powers to enforce Minimum Energy Efficiency Standards (MEES) in the private rented sector which makes up 19% of housing in England and 15% in Scotland, a sector traditionally performing poorly on energy efficiency standards. However, in England conditions to impact emissions are too weak and Trading Standards staff are under-resourced to tackle these issues²². Tenants rarely complain due to fears of being evicted. The Government is currently consulting on increasing the spending cap for landlords from £3,500 to £10,000. Local authorities can also enforce Minimum Energy Efficiency standards in commercial property.

In Scotland The Energy Efficiency (Domestic Private Rented Property) (Scotland) Regulations 2020 will apply from October, with a higher spending cap of £10,000 from 2022 for landlords, and interest free loans for smaller landlords.

Standards for private as well as rented homes do not relate to energy efficiency, but to health and safety. The Housing Health and Safety Rating System (HHSRS) includes health hazards relating to damp and excess cold, enforcement is usually in the form of Improvement Notices. The system is 12 years old and considered out of date, it is under review by the Government. The HHSRS is a potential tool available to local authorities delivering block improvements to homes in an area, for example external wall insulation, and could be used as a last resort to include reluctant homeowners in very cold houses in schemes.

As with so many powers available to local authorities, resource constraints caused by funding cuts affects their ability to use these powers to improve energy efficiency standards. It is also a challenge to identify properties in the private rented sector. Local authority trading standards are responsible for ensuring that homes being sold have Energy Performance Certificates. In two tier authorities, Trading Standards is a County Council role, while Environmental Health and Housing functions are carried out by District Councils. This means that using EPCs to identify low standard private rented properties and associated hazards is difficult.

iv) Place-shaping – Transport

Changing transport infrastructure and travel habits can not only reduce emissions, but also lead to other co-benefits such as improved air quality and health. In turn, this can reduce costs that would otherwise fall on the health system. Councils have significant leverage over emissions from the UK's car, vans and heavy goods vehicles. County Councils are the Transport Authority and hold the funding and decision making power for transport planning, roads and public transport. District councils are responsible for parking and development planning. Unitary authorities combine the powers of County and District Councils.*

* A large number of unitary, county and metropolitan council responding to the survey listed transport as an opportunity to deliver Net Zero, but only one district council did so. Districts cited the lack of funding for public transport and active travel options and the two-tier system as barriers.

Box 1.12**London transport – the benefits of a whole-systems approach**

London is the only area of the country with control over nearly all aspects of its transport system including its buses and is able to raise funds and cross-subsidise services. This meant it was able to transform the public transport system as a whole, introducing integrated ticketing, substantially increasing bus capacity and journeys (journeys made by bus increased by 71% between 2000 and 2016²³), alongside reducing car use and investing in walking and cycling infrastructure.

Most of the UK's largest city regions outside London also have Passenger Transport Executives, such as Transport for Greater Manchester and West Yorkshire Combined Authority, which combine the transport functions of a local authority with strategic decisions made at a regional level. This makes investments in rapid mass transit, such as trams or guided busways more possible, although these take a very long time to develop.

Local authorities have a range of powers under the Highways and various Transport and Traffic Acts including:

- Highways improvements including walking and cycling routes
- Air Quality Management Areas
- Clean Air Zones – requiring drivers of polluting vehicles to pay a charge
- Imposing speed limits (e.g. 20 mph zones)
- Traffic violations
- Parking charges including workplace parking levy
- The ability to restrict traffic in certain areas or at certain times (Traffic Regulation Orders*)
- Taxi Licencing – which can be used to support electric taxis and private hire vehicles
- Potential to re-regulate buses.

Barriers to local authorities delivering holistic sustainable and viable transport systems include:

- Lack of control over Highways England investments which can undermine efforts to deliver clean air or traffic reductions by increasing traffic
- Lack of control or influence over bus routes, despite devolution in some Combined Authority areas, and the use of quality bus partnerships, it is challenging to create an integrated system as has been possible in London; in rural areas bus provision and use has fallen²⁴ and District Councils struggle to get County Council budgets to stretch to rural bus provision, leading to higher proportions of emissions from car travel. Rural bus routes generally require subsidies, so the National Bus Strategy should provide ongoing support for rural bus services and demand responsive services.
- Costs of Clean Air Zones; local authorities are calling for additional funding to implement CAZ and support scrappage schemes for the most polluting vehicles

* Traffic Management Orders in London

- Local authorities have no control over train services
- Delivering business cases for low-carbon transport within the Government's current policy appraisal tools (e.g. the Green Book, DfT's WebTAGs system) biases decisions towards increased car use and traffic flow without sufficiently capturing the negative effects of this. Authorities are increasingly exploring the use of other tools (see Chapter 3, Transport).

v) Place-shaping – Land use

Local authorities are a key stakeholder in the management of land, impacting emissions from land-use, land-use change, forestry and agriculture. Peatland restoration, planting trees and low-carbon farming methods can all help reduce emissions, and often have co-benefits, such as making areas more resilient to flooding. Local authorities work closely with farming communities and landowners on a range of land management issues, carrying out around 170 statutory duties. Local planning authority policy affects land-use related emissions, encompassing development, protection of the green belt, public access to green space and tree-cover. Local authority duties and powers cover environment and wildlife protection, land use and land-use change planning, archaeology heritage, public access and rights of way. Additionally, as part of the Data Transparency Code²⁵, local authorities must publish information of all land and building assets.

Local authorities have range of powers, levers and influence over land use and related emissions through:

- Ownership of 4% of England's land²⁶, 1% of which is held in County Farms, the rest in parks, nature reserves, highways, moorland, foreshore, downland, golf courses, allotments, Green Belt land and council buildings, schools and council housing.
- Highways functions which include tree maintenance, street trees, verge and grass cutting; and their Parks and Leisure services; most authorities will have a Tree and Woodland Strategy.
- Development planning which can protect and promote tree cover, and green space including the Green Belt. The planning role also includes conservation and archaeology which can play an important role in land use and land use change decisions, particularly for woodland and forestry creation. Policies that require Biodiversity net gain are key to protecting important habitats.

A barrier to the extensive land-use change towards forestry and woodlands is to the perceived conflict between biodiversity and climate change. Woodland creation schemes need to be planned to ensure the ongoing protection of species rich grassland and fauna and heritage landscapes shaped over decades by extensive agriculture. These concerns can be addressed by local area partnerships integrating plans for increasing afforestation with Biodiversity Net Gain policies, new Nature Recovery Networks and assessing Landscape Character areas. Land-use and development should also address Natural Flood Management, cooling and climate adaptation priorities. (See Chapter 3, Land use)

Forty-four local authorities have county farms or smallholding assets covering 200,000 acres (~81,000 ha). The area of county farms has halved in size in the last forty years, with three quarters of councils owning farms or smallholdings selling land.²⁷

Box 1.13

Cambridgeshire County & Cornwall County Council – County Farms

- Cambridgeshire County Council has bought land, making it the third largest landowner in the county with 13,200 ha and 200 tenants; has the largest county farm estate nationally bringing in £5 million rent annually, £50 million since 1993 through sales of surplus property, supporting new entrants to farming, local jobs, and woodland and hedge creation²⁸.
- Cornwall Council's Climate Change Action Plan commits the council to making Council Farms exemplars in low-carbon and regenerative farming. Including piloting anaerobic digesters (AD) on six, with a view to rolling AD out on all 58 dairy farms. It also includes a plan to plant A Forest for Cornwall and establish a Woodland Carbon Units scheme to enable other organisations to fund tree planting through offset funds.

D) Showcasing: Innovating, piloting, demonstrating and rewarding good practice, scaling and replicating.

"We've had more pilots than the air force"

- Dr Carolyn Wilkins OBE, Chief Executive, Oldham Council *

Local authorities play an important role in working out how to deliver Net Zero at a local level. Innovation projects, often on the public estate, are seen as a means to de-risk, develop new business models, test new technologies and monitor results.

Over the past decade pathfinders and pilots have been popular in government policy, with funding available from national government, the EU, and academic institutions. However, the same projects have also been criticised due to their short term, fragmented funding, lack of scale and are the cause of a commonly expressed frustration that even successful pilot projects rarely develop into mass rollouts before policies change again, or a new technology needs trialling. Pilots are also only really available to local authorities with sufficient capacity to devise or apply for funding and manage it, leading to a concentration of projects in certain places. LED street lighting is a clear exception to this and was given as an example of success in the survey by 30% of respondents.

Delivering Net Zero will require moving beyond pilots and towards mass rollout of low-carbon solutions such as electrified heating in buildings, and electric vehicles.

However, there is still a role for pilot projects in demonstrating how these solutions may interact together in an efficient system. Demonstrating this, at sufficient scale, can provide valuable lessons for a national transition to Net-Zero. Tens of local authorities are partners in innovation projects doing just this, alongside DNOs, universities, private and community sector organisations, often supported by government department funding, UK Research and Innovation funding and Network Innovation Allowances or Competitions.

Policy advice to the CCC this year suggested the need to demonstrate Net-Zero in practice by funding and developing *multiple* net-zero pathfinder towns, where transport, buildings and energy supply are switched to low-carbon energy.²⁹ This could enhance understanding of low-carbon solutions and attitudes, before a wider rollout of these technologies.[†]

* Dr Carolyn Wilkins OBE, Chief Executive, Oldham Council: Growing the Economy conference, February 2020.

† For example, the roll out of renewable energy schemes is an example of how leading local authorities such as Swindon, Warrington, Plymouth and Oxford City Council paved the way for many others to follow.

Local authorities need staffing and capacity to develop new ideas and share what works, without sufficient staffing, and wider support it is very difficult to pilot ideas and spin them out for wider delivery. Partnership working may help here, but capacity is required in the council.

Once solutions have been identified and trialled through pilots and pathfinders, it is vital that this quickly transfers to national policy to keep up the scale and pace of delivery.

Box 1.14

What worked in the past? Regional climate hubs

Regional climate hubs³⁰ supporting local authorities with relevant information, networking and training events were very effective at supporting climate action across all local authority service areas, and to elected members, during the early to mid-2010s. Funding something similar would make information finding and translation to delivery easier. Also, in the 2010s the Energy Saving Trust provided an excellent service called Practical Help, providing four hours' research support to local authorities and producing a tailored briefing with relevant case studies, technical resources, local contacts and information on funding to support delivery.

E) Place based partnerships

Local authorities can have a catalytic role in bringing together the businesses, academic, public and community and voluntary sectors together to tackle Net Zero in their local area

Local authorities can have a catalytic role in bringing together the businesses, academic, public and community and voluntary sectors together to tackle Net Zero in their local area. The survey conducted for this report showed that local authorities saw their leadership and influencing role combined with their role as a partnership builder and co-ordinator as fundamental to delivering Net Zero.

Local authorities are cornerstones in delivering and enabling local economic benefit, including bringing together colleges and training providers, key employers and potential apprentices and people who want to reskill for new roles. This role will be particularly important in delivering resilient growth and recovery and in helping people who have lost jobs in one sector successfully transfer to other growth sectors. As ever, additional funding and capacity will be needed to secure these jobs and enable local areas to capitalise on the opportunities.

There could be 700,000 direct total jobs in England's low-carbon and renewable energy economy by 2030

A recent report by Ecuity Consulting for the LGA, estimates that there could be 700,000 direct total jobs in England's low-carbon and renewable energy economy by 2030 and more than 1.2 million by 2050.³¹ Nearly half could be in clean electricity generation and providing low-carbon heat for homes and businesses (manufacturing wind turbines, installing solar panels and installing heat pumps). Around 40% of jobs will be involved in installing energy efficiency products, such as insulation, lighting and control systems; providing low-carbon services, including financial, legal and IT; and producing alternative fuels, such as bioenergy and hydrogen. The remainder will be directly involved in manufacturing low-emission vehicles and the associated infrastructure.

These jobs are also projected to be generated across England's local authorities and regions. More than 420,000 of these are forecast in the North; nearly 200,000 in the Midlands; almost 120,000 in the East; and nearly 450,000 in London and the South. Local authorities and their partner organisations have a common interest in delivering the wide range of benefits from climate actions, encompassing clean air, mental and physical health and wellbeing, sustainable jobs and skills in low-carbon and environmental sectors, high quality housing, reduced fuel poverty and improved access to nature and green space.

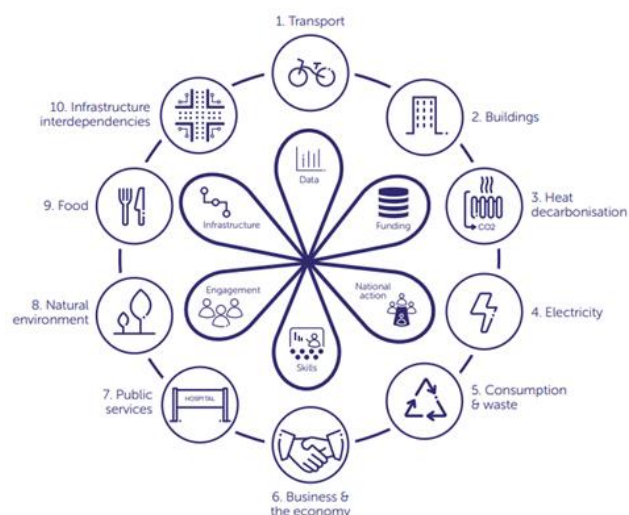
Building partnerships serves several purposes:

- **Access to expertise, skills and evidence**, for example, universities which help to develop science-based targets and pathways and community and residents' groups that can help co-design delivery projects
- **Buy-in and support from organisations that are part of the local system** and need to take action on their own estate, services or fleets, for example building heat network or retrofit delivery projects
- **A wider mix of people, ideas and challenge** and a range of partners to conduct outreach and engagement with target groups and communities
- **A shared story for the area that can inspire** and draw in others, including investors
- **Share experience and lessons**, and help develop local expertise and supply chains.

Box 1.15

Partnerships for delivering climate action at different scales

- **P-CAN Place-based Climate Action Network** supports the establishment of Climate Commissions, bringing together Higher Education, private, public and third sector organisations to inform and support local authorities.
- At a combined authority scale, **Greater Manchester's Green City Board** is made up of Councillors from its constituent local authorities with responsibility for Waste and Recycling, Transport, Planning and Housing, the Chief Executive of Electricity Northwest (ENWL), Chief Executive of the Wildlife Trust, universities, BBC, Cooler Projects, Environment Agency, Homes England, Siemens and Arup. The board brings together chairs of the Taskforces working on sectoral, infrastructure and communications and engagement. It also has a representative from BEIS. This is an example of national, regional and local organisations working together to deliver on Net Zero and adaptation. The alignment of the city-region's target has influenced ENWL's net zero investment plans for its own operations, but also opened the debate on investment to meet targets earlier than the UK 2050 target.
- At a city-scale, **Bristol One City Partnership**, a wide range of public, private, voluntary and third sector partners, has endorsed the Bristol One City Climate Strategy and aims to deliver action across the range of sectors supported by an advisory committee on climate change.



It is not just cities that can attract regional and university support. At the county or LEP scale, these regional organisations can work at the interface with multiple smaller District Councils. **Devon's Climate Emergency Response Group** mobilises the county's 38 councils, National Farmers Union, network operators, two universities, The Met Office, businesses and nature partnerships, emergency and health services.

F) Involving, Engaging and Communicating – Putting People at the Heart of the transformation to Net Zero

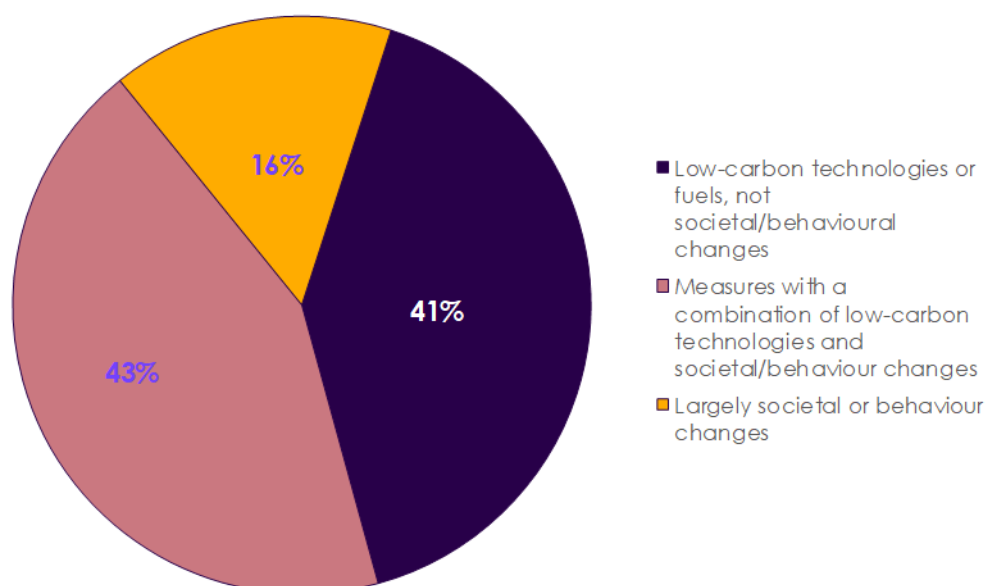
Local authorities have a longstanding role in local communications and engagement for different purposes. Types of engagement range from providing information on recycling collections and public health, to consulting on local plans or road closures, through to co-creating local solutions for homelessness.

Table 2 shows the range of types of engagement and methods of engagement used by local authorities.

Table 2				
Informing	Consulting	Involving	Co-design	Empowering
One way, information provision	Statutory consultations on already developed plans and proposals	Directly working with people to understand their views and needs e.g. Climate Commissions	Working together with people at a local level or interest groups to design solutions and projects	Handing over the power and co-creating schemes to tackle a problem or deliver a solution

People have to be fully engaged and empowered to achieve Net Zero. Figure 1.4 shows that nearly 60% of the changes in the CCC's Sixth Carbon Budget Balanced pathway rely on societal or behavioural changes. This is particularly the case in delivering decarbonised transport, buildings and waste as well as important in planning for renewable energy and changes to land-use and agriculture that affect the local landscape.

Figure 1.4 Role of societal and behavioural changes in the Balanced pathway (2035)



Source: CCC (2020) The Sixth Carbon Budget.

Local authorities and local partners have a role in making climate change and Net Zero relevant to everyone locally; to inform and engage communities and businesses for the coming changes and opportunities. In June 2020 the BEIS Public Attitudes Tracker³² found that:

- 63% of the public are aware of the concept of Net Zero, but only around 41% know much about it
- There is growing concern about climate change: 81% of people are concerned about climate change
- 80% of the public support renewable energy, with 44% strongly supporting it, and 2% opposing it
- Public trust in consumer bodies is high for Citizens Advice, Consumer Groups and Trading Standards at ~80% but low for energy suppliers with 41% of people trusting them very much.
- Trust in trading standards, a local authority function, was high at ~80% in comparison with low levels of trust in energy suppliers. This reinforces the crucial role of local authorities as trusted enablers in the energy transition.

Climate justice is central to policymaking and engagement is key to designing policies and programmes that are inclusive and do not inadvertently leave people behind, facing higher costs. People on low incomes and from disadvantaged groups are more exposed to risks and less able to prepare for, respond to and recover from hazards such as flooding and heatwaves. Local authorities have a role in making sure no one is left behind or disadvantaged in the Net Zero transition. Local authorities lobbied hard to secure the 25% of ECO funding now available through Eco-flex to enable people on low incomes or suffering from health problems exacerbated by cold homes to be able to access ECO funded measures in their homes.

Box 1.15

Just Transition Initiatives

The Scottish Government has established a Just Transition Commission³³ to advise the government on applying just transition principles to Scotland. The Banking on a Just Transition³⁴ pilot in Yorkshire and Humber highlights the need for new forms of dialogue such as Citizens Assemblies. The IPPR Environmental Justice Commission will be holding citizens juries in communities that will face unique challenges as a result of the transition, starting in the Tees Valley and County Durham and moving on to South Wales Valleys, then to rural area and a commuter town.

Deliberative democracy and co-production³⁵ are becoming more mainstream as ways to involve people in policy making and designing solutions to challenges

Deliberative democracy and co-production³⁵ are becoming more mainstream methods to involve people in policy making and designing their own solutions to challenges based on lived experience. Recent examples of different types of climate engagement include:

- **Climate Assemblies³⁶** were commissioned by local authorities as a direct result of their climate emergency declarations by Brent, Camden, Newham and Oxford City Council and by Leeds Climate Commission. This approach brings together 40 – 150 people from a representative sample of the local population to hear evidence from experts, advocates and people with lived experience. The assembly members are facilitated in deliberating and developing policy recommendations. The impact of these assemblies has been to provide a mandate to councillors to be ambitious in their climate plans.

- **Climate Assembly UK**, commissioned by six select committees of the House of Commons, sat during 2020 and published its recommendations in September 2020. These included underpinning principles as well as their views on policy actions relating to travel, heat and energy, land-use, what we buy and eat, electricity generation and Carbon Capture and Storage. The report³⁷ provides useful insights relevant to local authorities in policymaking and planning local engagement events.
- **Co-production** is being used to bring together a more diverse range of people and build on existing knowledge to devise fairer solutions to critical issues. Co-production practices underpinned the engagement behind the Greater Manchester Green Summit, making it more collaborative; while Energy Walks around the city helped citizens engage with the history of the energy system. Citizen-led projects could be the bottom-up action that helps the technologies or data driven business models deliver in reality. Organisations such as Regen, Carbon Co-op and Urbed are working on the interface of energy systems and communities to make such links.
- **Community-led delivery** has an important local role in education and raising awareness of climate change, delivering energy saving and renewable energy often funded through charitable funds, crowdfunding or community shares and developing low cost innovative projects. South East London Community Energy (SELCE) is a not-for-profit group owning solar generation on seven primary schools and currently providing energy audits to people who want to retrofit their homes and fit PV and heat pumps. The CHEESE project in Bristol similarly provides paid for energy audits to homes in Bristol, but free audits for people on low incomes, to kick start their retrofit journeys. Carbon Co-op and Urbed in Greater Manchester have set up People Powered Retrofit to support people through the retrofit process with a focus on service delivery and supplier training and quality assurance.

Box 1.16

London Borough of Hounslow – Green Recovery

Hounslow is predicted to be the second worst economically impacted London borough from the COVID-19 crisis. It is using co-design techniques to create a Green Recovery strategy³⁸ focused on innovation and practical action. Through a set of innovation labs, the Green Recovery Board is set to listen, learn, collaborate and innovate to bring forward the best possible green recovery programme for Hounslow's communities and residents. The borough is working with a range of academics, business leaders, partners and think tanks to do this, with resident engagement at the core.

Current Local Authority climate ambitions

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1. Climate Emergency Declarations

Catalysed by the wave of climate awareness stemming from the October 2018 Intergovernmental Panel on Climate Change Special Report on Global Warming of 1.5°C, school strikes and Extinction Rebellion protests, local authorities began declaring climate emergencies. During 2019 these grew, galvanised by the Government's adoption of the Net Zero target in June 2019. By November 2020 a total of 308 out of 408 combined and local authorities had declared climate emergencies. This figure does not include local authorities making climate commitments and plans but choosing not to label them as an emergency.

The CCC encourages local authorities to develop plans consistent with the Sixth Carbon Budget and the local pathway towards Net Zero. But it does not recommend setting local carbon budgets due to multiple drivers of emissions beyond local control.

In 2012 the CCC called for local authorities to draw up low-carbon plans which include a high-level ambition for emissions reduction by focusing on drivers of emissions over which they have influence (e.g. number of homes insulated, car miles travelled). At the time, the CCC recommended that it would not be appropriate for local authorities to set (or be set) binding carbon budgets given the multiple drivers of emissions, many of which are beyond their control. This is still the case.

Climate emergency declarations are another step on a long pathway of climate action by local authorities, not a new starting point. Cities were putting in place carbon neutrality targets well before the urgent reality of the climate emergency took hold. But the declarations show that climate change has been pushed back onto the public and political agenda adding impetus to existing local delivery or kick-starting authorities that had stalled. December 2019 analysis of 237 Climate Emergency Declarations by IGov at The University of Exeter³⁹ found that they:

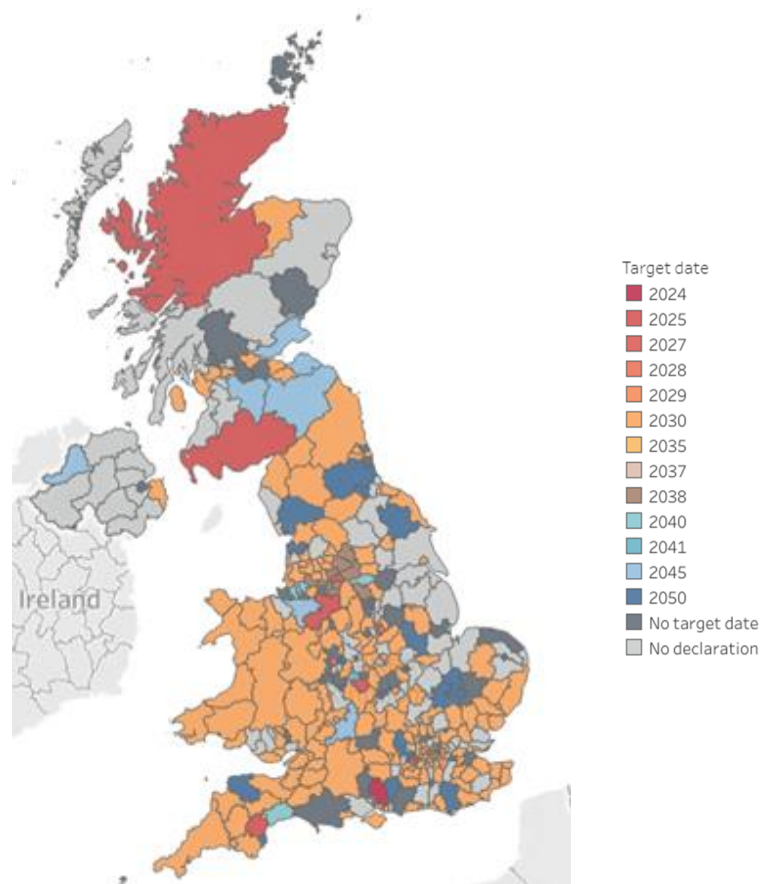
- Set new accelerated dates for a local carbon reduction target
- Established new Climate Action Plans
- Used local authority 'soft power' to engage with communities on decarbonisation
- Called on government to provide power and resources to act locally.
- As well as a carbon target, local authorities want to deliver wider social, ecological, adaptation and economic benefits. So, some declarations also include targets and ambitions for these aspects, which use different datasets for measurement, alongside the carbon data.

2. Target setting – dates & scope

The range and scope of local authority targets varies (Figure 2.1). Over 60% have a target date of 2030 while some have not set dates, and others have dates after 2030 including 2050 in line with the UK target.

Some targets state dates for becoming Net Zero, zero carbon or carbon neutral. Some local authorities have set an early target date for their own estate to become net zero, with a separate later date for the wider area. *

Figure 2.1 Local Authority climate emergency declarations



Source: Map by Aether (2020) *Progress towards UK local climate emergency targets based on Climate Emergencies declared as at October 2020.*

Notes: dates shown are earliest targets, some relate to council emissions rather than area-wide emissions.

* At least 27 local authorities, including combined authorities have used the Tyndall Carbon Budget Tool which sets a science-based target date for carbon neutrality based on the 'remaining budget' for that area. It is based on the fair proportion of energy-related emissions from the local area and is aligned to Paris targets. It excludes aviation and shipping, non-CO2 emissions and land-use, land-use change and forestry. It recommends that land-use changes be monitored and carbon saved be offset against agricultural emissions. In short, it will give an earlier date for zero carbon than the national target.

3. Monitoring and Reporting Emissions

Local authorities do not currently have to monitor or report reductions in their own or area emissions. Feedback from local authorities, support associations and consultants indicates that that since the requirement for reporting emissions through National Indicators was dropped and became voluntary, reporting has been inconsistent so there is no sector overview. Local authorities said in the survey and interviews that guidance and standardisation of reporting is needed. The LGA and Local Partnerships are developing tools to assist such reporting (Box 2.1).

Box 2.1
Local Government Authority GHG Reporting Tool

The Local Government Association, with Local Partnerships and CDP have recently launched a free GHG Accounting Tool⁴⁰ for Scope 1 and 2 emissions and basic Scope 3 emissions. This links to the government's conversion figures for GHGs reducing the burden of doing the calculations. Submissions made annually by 31 October will be benchmarked and available on LGI Inform.

Local authority officers report that 'what gets measured gets done'. While removing the burden of reporting was intended to lighten the load in local authorities, it served to push climate down the political agenda in areas without strong commitments on climate change. Currently:

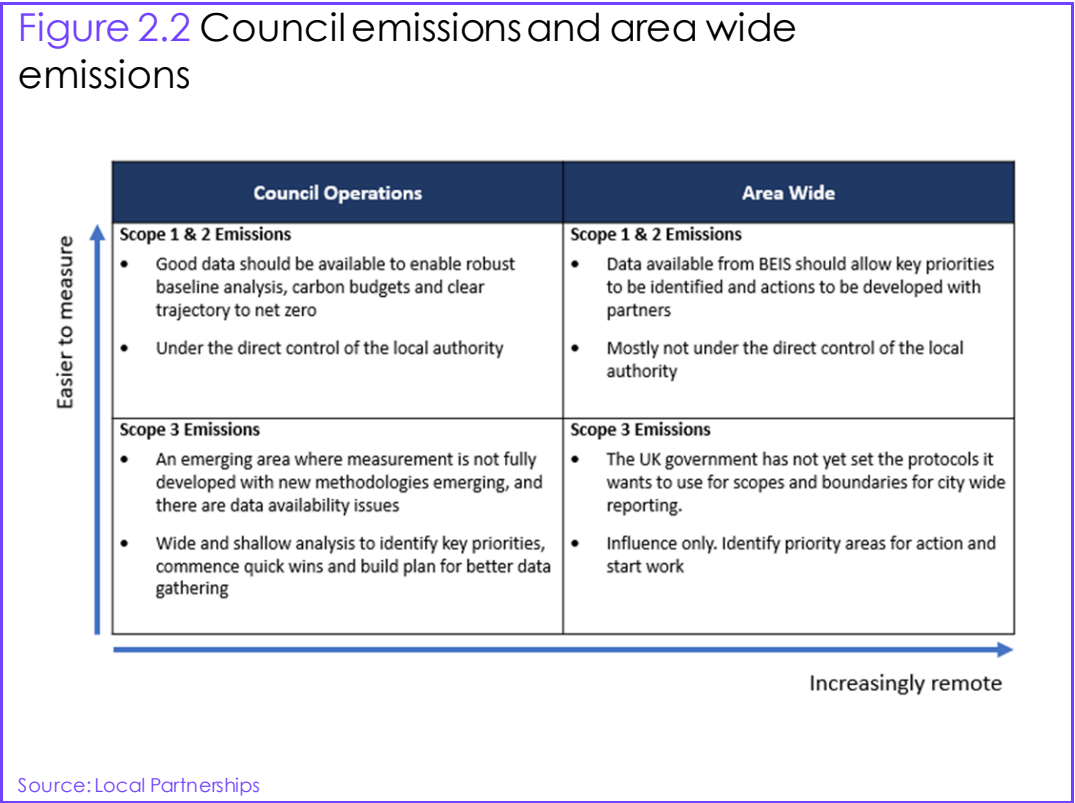
- **Some authorities only report on emissions in Scopes 1 and 2** (Table 2.1) and others take a wider approach actively choosing to include Scope 3 emissions from contracted out services and leased buildings and fleet.
- **Some have not been monitoring or reporting emissions and need to resume** the process from a new baseline. A survey of 219 local authorities showed that 91 did not measure all energy use across their estate (housing, facilities, offices etc.) and did not monitor their emissions.⁴¹
- **Local authorities are using a range of tools for reporting or are contracting out monitoring and reporting to consultants.** A minority of local authorities report using CDP (which includes area-wide emissions), others use the government's Emissions Reduction Pledge 2020 format.

Table 2.1 An explanation of the Greenhouse Gas Protocol reporting scopes		
Scope 1: Direct	Scope 2: Energy Indirect	Scope 3: Other Indirect
Direct emissions from fuel combustion (gas/oil boilers), council vehicles (trucks, cars, buses owned by the local authority and not contracted out), process emissions (from waste processing if not contracted out) and fugitive emissions (such as air conditioning leaks)	Indirect emissions from purchased electricity, heat, steam and cooling	Purchased goods and services Business travel, commuting, grey fleet (employee-owned cars claiming mileage back by expenses*) Waste disposal for contracted out waste processing Use of sold products and services (emissions related to local people's use of local authority services) Investments Leased assets, franchises and outsourcing (all contractor emissions)

* 'Grey fleet' is a key emissions area for Adult Social Care but low-paid care staff rely on mileage expenses and are less likely to be able to afford a new low emissions or electric vehicle.

Some local authority targets have been set based on a good understanding of their own and their area's emissions and the scale of actions to reduce these.

Some local authority targets are based on a sophisticated understanding of the sources of emissions in the local area and roughly what actions would be needed to reduce these, however other ambitious climate emergency and net zero targets have been set without a full understanding of how to achieve the rapid emissions reductions required to meet these targets. Figure 2.2 below shows the differences between managing and reporting emissions within council operations which requires internal management and the much greater leadership role to tackle area wide emissions.



The UK Local Authority and Regional Carbon Dioxide Emissions National Statistics* provide the basis for local authorities to track their area emissions

The UK Local Authority and Regional Carbon Dioxide Emissions National Statistics⁴² provide the basis for local authorities to track their area emissions*. This data lags by two years, so today the most recent figures available are for 2018. These provide an annual breakdown of CO₂ emissions, using nationally available data sets going back to 2005. They exclude emissions from motorways, EU ETS sites, diesel trains and land use, land-use change and forestry, although the latter has been provided for the first time for 2018. Only CO₂ emissions, rather than the full set of Greenhouse Gas emissions are included which is why the UK's overall figure is higher.

Local authorities are estimated to have significant scope to influence around a third of local area emissions through service delivery, policies, enabling activities and investments and their wider leadership role.

- Local authorities have relatively little influence over some types of emissions, such as emissions from large industrial facilities. Changes in these industries can have a big impact on the decrease of area emissions, simply through the closure of a large plant in an area.
- Local authorities are estimated to have significant scope to influence around a third of local area emissions through service delivery, policies, enabling activities and investments and their wider leadership role. But to realise this fully will require coherent policy, coordination between Government departments, sufficient funding and resources and greater attention to regional and local delivery.

* Local authorities do not actually have influence over the full 70% of emissions listed in these data sets as 'under local influence', as these include the effects of nationally set policy, regulations and incentives, actions by national and regional agencies, and the decisions and habits of businesses and individuals

- This level of influence is in line with The Coalition for Urban Transitions review of global urban opportunities to address the climate emergency and reduce emissions found that “Local governments have primary authority or influence over 28%, including compact urban form, travel demand management and waste disposal. 37% of the identified mitigation potential depends on collaborative climate action among national, regional and local governments, including building codes, decentralised renewables and mass transit infrastructure.”⁴³
- The Sixth Carbon budget will reduce the UK's annual per capita emission by 2035 to under 3 tCO₂e per person, in line with global pathways consistent with meeting the Paris 1.5°C goal. But Box 2.2 below shows how areas with heavy carbon intensive industry affects per capita emissions for example, with London, the South East and South West of England showing much lower figures than Wales and the North.

Box 2.2

Example emissions data provided at the regional and local levels

Table 6: End-user carbon dioxide emissions and carbon dioxide emissions per capita by region, 2005 and 2018

Region / country	2005		2018		Mt CO ₂ , t CO ₂ , percentage	
	Total emissions (Mt CO ₂)	Per capita (t CO ₂)	Total emissions (Mt CO ₂)	Per capita (t CO ₂)	Percentage change between 2005 and 2018 total emissions	Difference between 2005 and 2018 per capita
UK	527	8.7	345	5.2	-35%	-3.5
Wales	33	11.2	24	7.5	-29%	-3.6
Scotland	44	8.6	29	5.3	-35%	-3.3
Northern Ireland	16	9.3	13	6.7	-22%	-2.6
England	430	8.5	280	5.0	-35%	-3.5
North East	33	13.1	15	5.7	-55%	-7.4
North West	60	8.7	38	5.3	-36%	-3.5
Yorkshire and the Humber	53	10.4	36	6.5	-32%	-3.8
East Midlands	41	9.5	29	6.1	-29%	-3.4
West Midlands	44	8.3	31	5.2	-30%	-3.0
East of England	45	8.2	32	5.2	-29%	-2.9
London	47	6.3	29	3.2	-39%	-3.0
South East	65	8.0	43	4.7	-35%	-3.3
South West	40	7.9	27	4.8	-34%	-3.2

Source: UK local authority carbon dioxide emissions estimates 2018

The UK Local Authority and Regional Carbon Dioxide Emissions National Statistics are broken down into a range of useful charts and maps (Boxes 2.2 and 2.3), per capita emissions and show the rates of change in different areas by sectors.

It is not surprising therefore that local authorities use different tools and models to understand their emissions at a more granular level and to inform target setting and action-planning.

Box. 2.3

Example of sector emissions provided at local authority level

Figure 11: Transport CO₂ emissions per capita by Local Authority (tonnes CO₂ per capita) for 2018



Source: Ordnance Survey data © Crown Copyright and database right 2020; from UK local authority carbon dioxide emissions estimates 2018

The UK Local Authority and Regional Carbon Dioxide Emissions National Statistics form the basis of most of the local authority climate emergency action plans or carbon reduction plans and are a key source for consultants and support organisations. Most of the tools used to help inform local areas about their emissions are based on these datasets along with other sources.

The tools often used are SCATTER (Box 2.4), Tyndall Centre Local Authority Carbon Budgets and P-CAN's Place Profiles.

The P-CAN (Place-Based Climate Action Network) helps assess some of the co-benefits with its Carbon Accounts and the Scope for Low Carbon Development. Ready-to-go reports are available on the website⁴⁴ showing production (Scope 1 and 2) emissions and consumption emissions (Scope 3) and presenting actions that provide the most carbon savings and co-benefits such as fuel cost savings to different sectors and employment creation benefits. These do not suggest a target, and take projections as far as the mid-2030s. As with the Tyndall Carbon Budget Tool it provides useful evidence to make a persuasive case to begin action.

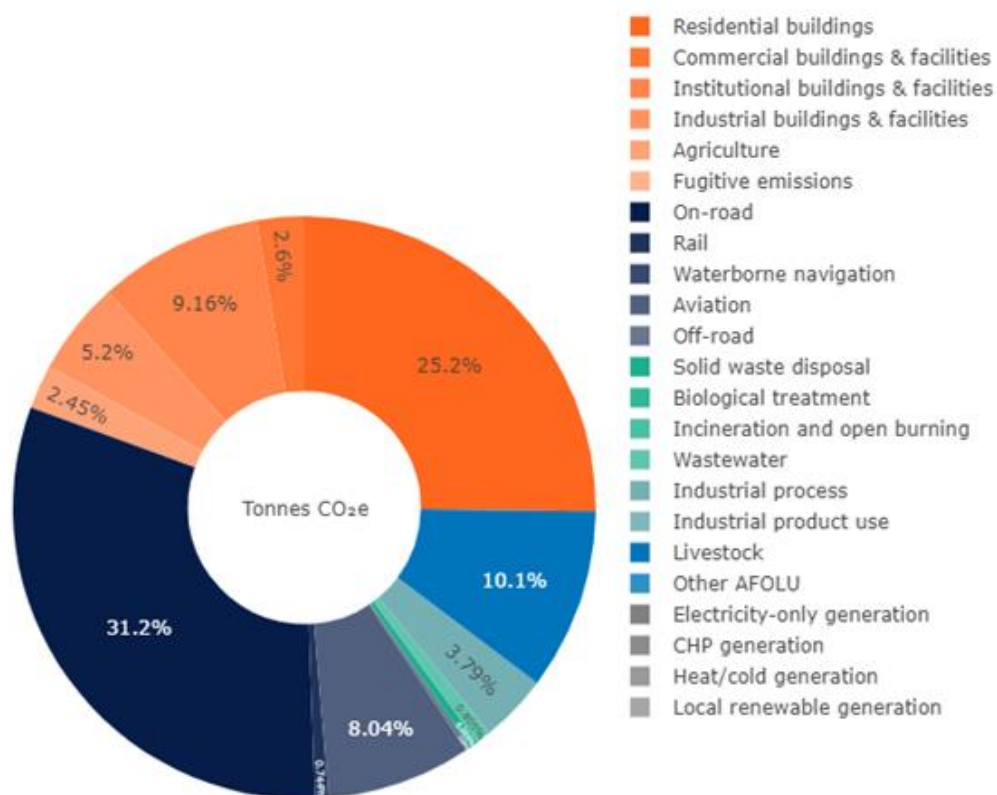
To assist prioritisation of actions, climate charity Ashden has developed list of 31 climate actions for councils with associated carbon savings, cost and co-benefits along with a Co-benefits toolkit⁴⁵ which considers climate action co-benefits across four areas – health, economy and jobs, resilience and equity/social cohesion.

Box 2.4

The SCATTER tool

The SCATTER⁴⁶ tool has been developed with BEIS support by Anthesis with the Tyndall Centre working with Greater Manchester Combined Authority and it has now been further developed at Nottingham City Council to create an on-line tool which is free to use by local authorities*. It produces a Global Covenant of Mayors compliant greenhouse gas inventory for the area, so it sets the scene for the extent and sources of emissions for a local area. It has been used by over 200 local authorities. See example in Figure below.

Subsector inventory summary for East Devon with Total



It then provides decarbonisation pathways to 2050 covering 30 interventions which can be set at different ambition levels, enabling areas to understand the contribution different actions will make and the scale of what is needed. **Importantly it shows where to focus action.** The tool helps local authorities answer the question "what do we need to do to get to Net Zero?" and carry out engagement with different stakeholders. Data is pre-loaded for local authorities and instructions are provided on the website.

Source: SCATTER cities <https://scattercities.com/>

4. Which emissions should local authorities monitor and report?

Setting the scope

Monitoring and reporting of emissions is useful for the following reasons:

1. to track progress
2. to enable target setting
3. to help focus action in the key emissions areas
4. to support and influence decision making within the authority and with suppliers and partners
5. to demonstrate accountability through transparent reporting.

For sub-national entities such as local authorities and businesses, emissions reporting is carried out across three categories, or scopes of emissions. Common systems are in place in Scotland and Wales, but English and Northern Irish local authorities do not have a common reporting framework may take different approaches. This will make benchmarking and working out the responsibility and cost of action challenging.

Guidance is being developed by various organisations to help local authorities to understand and manage emissions from a range of their service areas, including property, social care, waste and highways. Additionally, universities and local authorities are working together to assess the impact of different interventions to aid decision making.

There are challenges to GHG accounting because common-sense actions do not always get 'rewarded' as savings. For example, calculating carbon using intensity ratios* based on spending fails to reflect low-carbon initiatives which cost money, so low-carbon initiatives like electric generators do not show as a carbon saving, using this type of methodology.

General guiding principles are:

- **Measure and report Scopes 1 and 2 as a minimum.** Scope 1 is direct GHG emissions from sources owned or controlled by the local authority, for example emissions from boilers and vehicles. Scope 2 accounts for emissions of purchased electricity consumed by the local authority. Ideally within Scope 2, local authorities should be purchasing renewable electricity that pays for new low-carbon generation to be installed, rather than just purchasing existing renewables (See: CCC Corporate Renewables Procurement Briefing Note).
- **Define and report on Scope 3 as actively as possible.** Scope 3 includes indirect emissions from wider supply chains (often reaching international jurisdictions), emissions from the use of local authority services, contracted out services and investments. Local authorities assess the significance of emissions and level of control they have over different types of Scope 3 emissions and focus on the areas with the most emissions over which they have the most control or influence.

* https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/850130/Env-reporting-guidance-inc_SECR_31March.pdf

Outsourced contracts and joint ventures are particularly important as these can represent as between 50 – 80% of emissions, and local authorities have a strong level of control over them. They also 'look like the council' and have the council logo on them, even if they are delivered by another contractor. Some local authorities, such as the City of London, are including investment funds in their Scope 3 reporting. As guidance develops across the sector, local authorities can broaden the types of emissions they aim to include in Scope 3.

- **Take into account the wider benefits:** not everything can be captured in emissions reporting. If it makes the area better in other ways, such as improving health, tackling fuel poverty, supporting decarbonisation of another organisation's activities, generates revenue to spend on emissions reductions or supports biodiversity and flood resilience it is worth doing even if the local authority cannot count the emissions reductions in its formal reporting. Investment in partnerships, communications and business support may not be measurable immediately but is important to delivering and enabling area wide emissions reductions. Local authorities should not let the drive for emissions data dictate their actions. Using the best data available is all that is possible, and it is important for local authorities to improving good practice through sharing lessons and outcomes. (See Section F below for other ways local authorities are assessing the impact of decisions and projects.)
- **Limit the use of offsets.** The Committee has recommended that the UK should aim to meet its Net Zero target and the Sixth Carbon Budget without use of carbon/emissions credits or 'offsets' (see Chapter 10 of the Advice Report). Longer term that should also be the goal for local authorities, although there may be value in using carbon credits during the transition in addition to taking all possible actions to reduce emissions. All local authorities should prioritise emissions reductions over the use of emissions offsets so that by 2030, offsets should only be used for areas where emissions are not avoidable due to a lack of technical alternatives. Beyond 2030, offsets should transition to permanent removals, which must demonstrate additionality and promote sustainable development.

Box 2.5

Cheshire East Council – setting a carbon neutrality target for the council estate that maximises wider influences across the area's emissions

Cheshire East Council has defined its own carbon footprint by Scope and by Operational Control⁴⁷. Operational Control is ranked by the level of control the council has over the emissions.

- **Direct Control:** all of Scope 1 & 2, which is 15,447 tCO₂e
- It defines some of its Scope 3 emissions as under Stronger and Medium control and includes them in its carbon neutrality target:
 - **Stronger Control:** schools, waste, business travel and employee commuting; 39,516 tCO₂e
 - Medium Control:** academy schools, waste and procurement activities which then nearly trebles the emissions footprint to 155,103 tCO₂e.

Together this is 3% of the area's emissions, of which 93% is from procurement. Commercial estate has not been accounted for within Scope 3 due to limitations in data availability. The Council Members agreed that if emissions are caused by procured activities delivered by contractors, but are core services that the public associate with the council, then they should include these in their targets and act to cut such emissions. This includes the bin waggons and Highways services which are delivered by Ringway Jacobs.

With a carbon neutrality target of 2025 the council will need to install renewable energy and deliver or support 'insetting', local tree planting as a measure to balance emissions until deeper emissions cuts can be made as vehicles and heating systems are replaced. The reason for 'insetting' is to retain co-benefits within the local area. Obviously not all local authorities, particularly urban ones will have the opportunities or land availability to take this approach.

Local authorities have used different terminology that affects the scope of the target and size of the challenge (Box 2.6).

Box 2.6

Zero carbon, net zero and carbon neutral – Terminology

- **Zero carbon** means that no carbon dioxide emissions are being produced from a product/service e.g. zero-carbon electricity could be provided by a 100% renewable energy supplier.
- **Carbon neutral** means that while some carbon dioxide emissions are still being generated by a building/process these emissions are being offset somewhere else making the overall net carbon dioxide emissions zero. This is also termed net-zero carbon dioxide emissions.
- **Net Zero greenhouse gas emissions** means that while some greenhouse gas emissions (not only CO₂) are still being generated by a process, these emissions are being balanced by forestry or removed by technologies making the overall net emissions zero.

The Scottish Government is requiring all Public Bodies, including local authorities, from 2022 to set a date by which their direct emissions will be Net Zero, and how they will align spending to this target. Local authorities will also be asked to set out a target date for the extent to which they aim to use their influence to reduce area-wide emissions, recognising this is a national pathway that requires action from all parts of society. Current reporting arrangements will be streamlined to simplify reporting duties on Scottish local authorities.

The Welsh Government has set a target to achieve a Net Zero carbon public sector by 2030 which includes ensuring that all local authorities have robust evidence-based Net Zero Action Plans in place as living documents by March 2021. The Welsh Government is offering technical, commercial and financial support to Public Bodies to implement action, and have developed a Net Zero Carbon Reporting Guide to support consistent, transparent reporting. The Welsh Local Government Association is providing training, expertise and ensuring good practice is shared across the sector.

Standardising and collating data from local authorities will help the sector to build a consistent evidence base and demonstrate to policy makers the impact it has in delivering Net Zero.

The range of targets, scopes and reporting is a cause of confusion to local authorities, and makes it harder for government and others to assess their progress and the significance of their overall contribution to the Net Zero target. It also makes it harder for the sector to build up an evidence base and produce data that supports policy makers in understanding the local impact. Standardising and collating the monitoring data centrally would help address this problem. The local government sector resists having to provide additional reporting to government, so needs to address this itself. The LGA and Local Partnerships GHG monitoring tool and benchmarking is a good starting point. Government needs to be open to receiving and making use of such data, which should be shared with MHCLG, BEIS and Defra (See Chapter 4. Recommendations).

5. Strategies and actions plans

Ninety-nine of the 308 local authorities that have declared climate emergencies have now published a strategy or action plan while others are developing plans or have not set a date to produce one. The plans vary; many set out actions for the local authority's own estate and operations alongside actions to cut emissions in the wider area. Some are co-designed with the wider community, businesses, public sector and universities as well as Natural England and the Environment Agency in the region, including sometimes incorporating climate adaptation and biodiversity actions. Some simply invite feedback through a consultation process.

Some take the form of a strategy leading to a costed and prioritised action plan. Other local authorities have taken action for the first 100 days following their climate emergency declaration, and made immediate changes and put in place new delivery projects, while developing longer term plans.

The key challenge is to turn the good intentions of a climate emergency declaration and target into a plan and then to deliver it. The sector pages in Chapter 3. show the actions that need be taken by local authorities during the 2020s and early 2030s to be on track for Net Zero.

Putting in place milestones is helpful for progress monitoring and to target early emissions cuts. Greater Manchester has produced a detailed Five Year Environment Plan, taking a Mission Based Approach developed by UCL (Box 2.7). This approach enables the Environment Team to monitor progress by groups in each sector to keep moving through the research and development phase towards delivery.

Box 2.7

Greater Manchester's Mission Based Approach: keeping the eye on delivery and not getting stuck in the cycle of research and development

Example of work in progress in the key activities in the Buildings sector as part of the Low Carbon Buildings Group.

Focus areas	Enabling activity	Delivery	2024 opportunity	Currently in development	Delivered	Lead
Delivery and Business Models	Retrofit Accelerator	In Progress	Research has identified 5 market segments	10 new services and models deployed	3	GMCA
Domestic	Accelerator Cities, social landlord programme	In Progress	LAEP, ECO, Warm Homes Fund, HAES, Green Homes Grant, SLDF	300,000 retrofits completed	2307	GMCA /RPs
Commercial	EPC Ratings	Delayed	NABERS UK launched shortly with GM reviewing as early adopters	10% reduction in heating and cooling		
Public Estate	Standardised data across the 10 LA's with individual plans	In progress	Salix Public Sector Decarbonisation Scheme	LAs - average DEC rating D or better by 2024	154	GMCA/ DISTRICTS
Skills and Supply chain	Action Plan Development	In progress	Continuously reviewing skills needs, alongside activity to meet our low carbon targets.	People supported		
	Required interventions to be completed complete by end of 2024/5					

Source: Greater Manchester Environment Team, GMCA

Most climate action plans identify where more funding, policy support and devolved powers are required from government.

Climate action plans and strategies can help identify areas where authorities can take immediate action, as well as areas where local powers are restricted, or additional funding may be required – potentially from central government – in order to deliver. This are to identify a timeline of delivery, and lobby for additional support.

Most established plans call for policy and resource support from government, often outlining where new powers are needed in the transport, planning, waste and energy sectors. Action plans should state how progress will be monitored and reported back to partnerships and residents, along with methods of ongoing engagement.

Box 2.8**Dorset Council's Action Plan**

Dorset Council's costed plan includes 187 actions to make the council's own operations net zero by 2040 and those of the whole area by 2050. 95 actions will require additional funding of £127m over the next 20 – 30 years. Actions range from installing renewable energy to trialling hydrogen in heating, installing heat pumps, reducing fertiliser use, working with County Farm tenants to introduce low-carbon farming practices, requiring zero carbon buildings, considering sustainable transport for developments, conserving biodiversity, planting woodland and installing EV charge points. This plan will be consulted on with the community. A RAG system has been used to assess CO₂ reduction/ecological enhancement, Value for money £/tCO₂, urgency and deliverability.

6. Delivering Plans: Resourcing and Mainstreaming for Net Zero

Despite their commitment to action local authorities need more resources, funding, capacity and skills to deliver the scale of action needed.

Research for this report showed that in most local authorities capacity to tackle emissions reductions, apply for funding and manage schemes is very limited. Climate Action Plans cannot be delivered by one person alone, nor just the environment team. In order to deliver Net Zero, local authorities need to embed climate actions across all functions, policies and service areas. To achieve this effectively local authorities, which have experienced such deep funding cuts will need to be properly resourced and supported.

"A lack of consistent, coherent political and corporate leadership on climate change within local authorities has long been an issue. Although we are seeing a shift, more still needs to be done to escalate climate action within council priorities. Unless climate action is mainstreamed at cabinet-level, support can drain away quickly."

-Carbon Trust⁴⁸

Political Leadership: most leading authorities on climate change have strong political leadership that underpins the ambition and supports action, and that is supported by the wider Cabinet, examined in scrutiny committees.

Box 2.9
Climate Change & Resilience Cabinet Post

As a result of declaring their Climate Emergency in January 2019 Calderdale Council created a new cabinet post for Climate Change & Resilience. This cross-cutting post entails meeting all Service Directors every two weeks to keep climate delivery on track.

Senior Leadership: Senior directors are taking a stronger role in embedding emissions reductions across their services areas. ADEPT has adopted climate as a priority for their members, providing webinars and materials. They have worked with a range of partners to produce a Blueprint⁴⁹ for delivery outlining to government the additional policies, powers and funding needed to scale up action. Treasurers and Financial Directors are increasingly aware of the transition to Net Zero. Their trade body, CIPFA is now beginning to include carbon and climate as an issue in its professional training programme.

Training and capacity building: In order to embed climate action across all areas local authorities are training their staff using Carbon Literacy and other specialist sources of training. Nearly 200 local authorities have undertaken Carbon Literacy training and are rolling it out across the workforce and elected Members. Council staff need to be carbon literate, particularly those in planning, housing advice and taking financial decisions. London Councils and the London Environment Directors' Network (LEDNet) have established climate capability training open to all relevant Directors and elected members in London boroughs.

Procurement: Local authorities are using The Social Value Act 2012 to deliver emissions reductions through procurement (Box 2.10). This is backed up by the government's new Social Value Procurement Model⁵⁰ which comes into effect in January 2021 support government departments to go beyond 'considering' social value in procurement, to explicitly evaluating it in contracts, this includes 'fighting climate change and waste'. As long as it is relevant to the contract, carbon, environmental benefits, local jobs and skills can be incorporated into contract specifications.

In particular local authorities should specify net zero pathways early into contracts for new building developments, waste, facilities and IT contracts and highways investments to avoid locking in emissions in the medium and long term. Where zero carbon is not possible, or is too costly, no-regrets options should be chosen so that schemes can be retrofitted to lower emissions and lock them out further down the line. An example of this would be the planned replacement of gas CHP plant for district heating schemes, which can be replaced by electric heat pumps in the future.

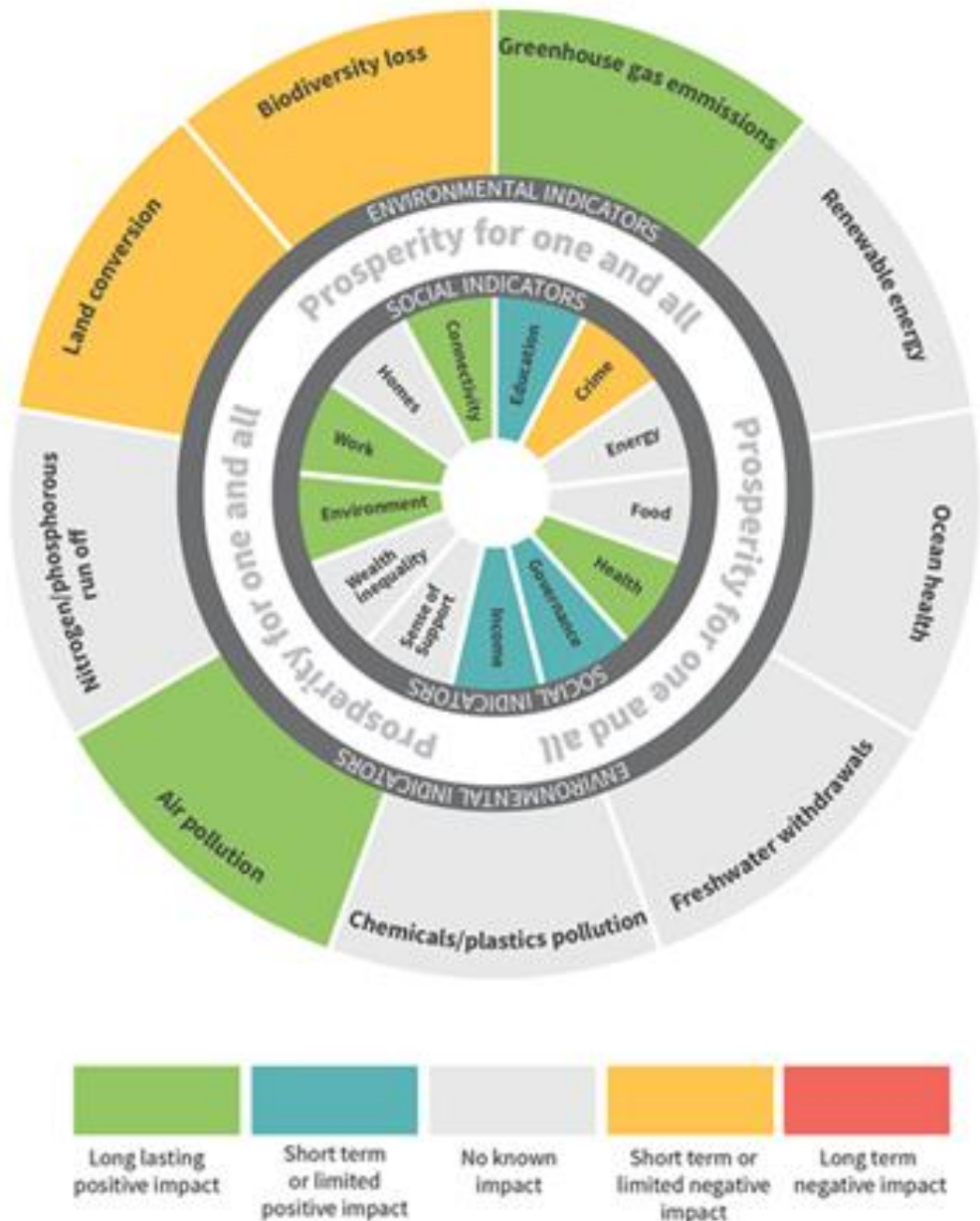
Box 2.10

The Social Value Act enables procurement to cut emissions

Nottingham City Council's Procurement Policy references the Social Value Act and its Strategic Procurement Objectives for the Environment aim to minimise the environmental impact of goods, services and works procured including reducing emissions; improve air quality; promote resource efficiency, waste reduction and recycling and source innovative and sustainable green solutions.

Decision making and financial appraisal: Some local authorities are developing tools and methods for decision-making and financial appraisal. Cornwall Council has developed a decision-making wheel, (Box 2.11) based on the concept of Doughnut Economics developed by Kate Raworth that balances climate action against social justice. It has been used in all Cabinet decisions since September 2019 and work is underway to embed the tool across a broader range of processes including investment boards, budget setting, commissioning and lower level decision-making committees.

Box 2.11
Doughnut Economics



Source: Cornwall Council

Incorporating climate indicators in the corporate performance framework makes action on climate visible and accountable within the everyday business of the local authority, and allows performance to be tracked consistently and transparently (Box 2.12). Embedding climate-related indicators in this way makes it less likely that climate actions slip off the agenda in light of other inevitable pressures from statutory duties, there is a growing consensus that climate action needs to be as embedded as health and safety or equality considerations.

Putting climate and biodiversity indicators into corporate performance frameworks is more likely to make it business as usual.

Sharing plans, impacts and evidence including data across regions and with the LGA and membership bodies helps get evidence back up to policymakers.

Box 2.12

Embedding climate data in core corporate key performance indicators

Calderdale Council has introduced climate and biodiversity key performance indicators to its mainstream performance framework. It will help establish mechanisms for accountability and will be published quarterly on the website, and reporting formally twice-annually to councillors. This reflects the climate emergency as a core corporate priority. The indicators will evolve as more data becomes available.

Sharing information and evidence: Delivering climate action is an iterative approach, and local authorities are right to assess what is best for their local areas when considering climate plans. Sharing data, plans and lessons with neighbouring councils can foster a shared sense of understanding for the wider area. Making other organisations, such as the LGA and APSE, and relevant Government departments aware can provide insight to what works, and where the barriers lie. Collectively sharing information can also strengthen the sector in demonstrating its impact on delivering Net Zero, which supports national policy makers in making better and more enabling policy.

Endnotes

- ¹ See CCC (2020) *The Sixth Carbon Budget and Policies for the Sixth Carbon Budget and Net Zero*
- ² <https://www.climateemergency.uk/blog/list-of-councils/>
- ³ CCC (2020) *The Sixth Carbon Budget*
- ⁴ CCC (2020) *Policies for the Sixth Carbon Budget and Net Zero*
- ⁵ UK100 (2021) *Power Shift: Local Authority Powers to Deliver on the Climate Emergency report*
- ⁶ <https://gov.wales/sites/default/files/publications/2019-05/sustainable-development-legislation-diagram.pdf>
- ⁷ [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/883901/Single Data List of central government data requirements from local government 2020-21.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/883901/Single_Data_List_of_central_government_data_requirements_from_local_government_2020-21.pdf)
- ⁸ <https://www.nao.org.uk/wp-content/uploads/2019/01/Local-authority-governance-Summary.pdf>
- ⁹ CCC (2020) *Policies for the Sixth Carbon Budget and Net Zero*
- ¹⁰ <https://friendsoftheearth.uk/climate-change/divestment>
- ¹¹ <https://www.southwark.gov.uk/news/2019/jul/in-a-climate-emergency-southwark-pension-fund-commits-to-investing-65m-in-blackrock-real-assets-and-temporis-funds>
- ¹² <https://www.gov.uk/government/consultations/taking-action-on-climate-risk-improving-governance-and-reporting-by-occupational-pension-schemes>
- ¹³ <https://www.cse.org.uk/news/view/2484>
- ¹⁴ <https://www.transportfornewhomes.org.uk/wp-content/uploads/2020/06/garden-village-visions.pdf>
- ¹⁵ <https://www.leti.london/>
- ¹⁶ <https://www.gov.uk/government/collections/energy-performance-of-buildings-certificates>
- ¹⁷ <https://www.theguardian.com/cities/2019/oct/28/meet-the-councils-quietly-building-a-housing-revolution>
- ¹⁸ <https://www.rtpi.org.uk/media/1976/localauthoritydirectdeliveryofhousingsummary2019.pdf>
- ¹⁹ [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/922911/Housing Supply Indicators Release June 2020.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/922911/Housing_Supply_Indicators_Release_June_2020.pdf)
- ²⁰ <https://wearebrickbybrick.com/our-projects/housing-for-a-better-world/>
- ²¹ https://www.apse.org.uk/apse/assets/File/2_%20Apse%20Energy%202020%20final.pdf
- ²² Power Shift report, UK100 November 2020
- ²³ <http://content.tfl.gov.uk/mts-supporting-evidence-challenges-opportunities.pdf>
- ²⁴ <https://bettertransport.org.uk/sites/default/files/research-files/The-Future-of-Rural-Bus-Services.pdf>
- ²⁵ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/408386/150227_PUBLICATION_Final_LGTC_2015.pdf
- ²⁶ <https://whoownsengland.org/2020/05/04/what-land-is-owned-by-councils/>
- ²⁷ CPRE (2019) *Reviving County Farms*
- ²⁸ <https://www.cambridgeshire.gov.uk/business/business-with-the-council/rural-business-opportunities>
- ²⁹ Advisory group on cross-cutting policy for the CCC (2020) *Sensitive intervention points to achieve net-zero emissions.*
- ³⁰ <http://claspinfo.org/>
- ³¹ Ecuity (2020) *Local green jobs – accelerating a sustainable economic recovery*

- [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/906452/BEIS_PAT_W34 - Key findings.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/906452/BEIS_PAT_W34_-_Key_findings.pdf)
- ³³ <https://www.gov.scot/groups/just-transition-commission/>
- ³⁴ <https://www.lse.ac.uk/granthaminstitute/wp-content/uploads/2019/10/Banking-the-just-transition-in-the-UK-2.pdf>
- ³⁵ <https://jamandjustice-rjc.org/news/report-out-today-how-can-we-govern-cities-differently>
- ³⁶ <https://www.involve.org.uk/resources/blog/news/when-citizens-assembly-not-citizens-assembly-towards-some-standards>
- ³⁷ <https://www.climateassembly.uk/>
- ³⁸ https://www.hounslow.gov.uk/info/20006/environment/2180/hounslow_green_recovery_board_-_blog
- ³⁹ <http://projects.exeter.ac.uk/igov/new-thinking-climate-emergency-declarations-accelerating-decarbonisation/>
- ⁴⁰ <https://localpartnerships.org.uk/greenhouse-gas-accounting-tool/>
- ⁴¹ <https://www.eca.co.uk/energyfoi>
- ⁴² [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/894785/2005-18-local-authority-CO₂-emissions-statistical-release.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/894785/2005-18-local-authority-CO2-emissions-statistical-release.pdf)
- ⁴³ <https://urbantransitions.global/wp-content/uploads/2019/09/Climate-Emergency-Urban-Opportunity-report.pdf>
- ⁴⁴ <https://pcancities.org.uk/find-your-place>
- ⁴⁵ <https://ashden.org/climate-action-co-benefits-toolkit/>
- ⁴⁶ <https://scattercities.com/>
- ⁴⁷ <https://www.cheshireeast.gov.uk/pdf/environment/carbon-neutral/cheshire-east-supplementary-annex-v5-13.02.20.pdf>
- ⁴⁸ <https://www.carbontrust.com/news-and-events/news/local-authority-climate-emergency-whats-next>
- ⁴⁹ <https://www.adeptnet.org.uk/documents/summary-document-blueprint-accelerating-climate-action-and-green-recovery-local-level>
- ⁵⁰ <https://www.gov.uk/government/news/new-measures-to-deliver-value-to-society-through-public-procurement>

Local Delivery: what needs doing

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1. Delivering the Sixth Carbon Budget

Meeting the Sixth Carbon Budget requires action across four key areas in line with the CCC's Balanced Pathway. (Table 3.2 below provides the key metrics for this)

Lower-carbon choices and efficiency can make a material contribution to meeting the budget.

Reducing demand for carbon-intensive activities.

- *Reduced demand.* Around 10% of the emissions saving come from changes that reduce demand for carbon-intensive activity. Particularly important are an accelerated shift in diets away from meat and dairy products, reductions in waste, slower growth in flights and reductions in travel demand. While changes are needed, these can happen over time and overall can be positive for health and well-being.
- *Improved efficiency.* A further 5% comes from improving energy and resource efficiency, especially by better insulation of buildings, improving vehicle efficiency and improving efficiency in industry.

Take-up of low-carbon solutions. Over half the emissions saving is from people and businesses adopting low-carbon solutions as high-carbon options are phased out (Table 4). By the early 2030s all new cars and vans and all boiler replacements in homes and other buildings must be low-carbon – expected to be largely electric. By 2040 all new heavy goods vehicles should be low-carbon. Industry must either adopt technologies that use electricity or hydrogen instead of fossil fuels, or install carbon capture and storage.

The largest contribution is from mass take-up of low-carbon solutions, powered by a major expansion of low-carbon electricity and hydrogen supplies.

Expansion of low-carbon energy supplies.

- **Low-carbon electricity.** Low-carbon electricity can now be produced more cheaply than high-carbon electricity in the UK and globally. The low-carbon share increases from 50% now to 100% by 2035, cutting UK emissions by 18% compared to our baseline. New demands from transport, buildings and industry (moderated by improving energy efficiency) mean electricity demand rises 50% to 2035, doubling or even trebling by 2050. The largest contribution is from offshore wind, reaching the Government's goal of 40 GW in 2030, on a path to 65-125 GW by 2050.
- **Low-carbon hydrogen** scales up to 90 TWh by 2035 (i.e. nearly a third of the size of the current power sector), produced using electricity or from natural gas or biomass with carbon capture and storage. It is used in areas less suited to electrification, particularly shipping and parts of industry, and is vital in providing flexibility to deal with intermittency in the power system. It may also have a material longer-term role in buildings and other transport, such as heavy goods vehicles.

Changes in the UK's land use are also needed.

Land (and removals). A transformation is needed in the UK's land while supporting UK farmers. By 2035 CCC scenarios involve planting 440,000 hectares of mixed woodland to remove CO₂ from the atmosphere as they grow, with a further 260,000 hectares of agricultural land shifting to bioenergy production (including short rotation forestry). This would see UK woodland cover growing from 13% now to 15% by 2035. Peatlands must be restored widely and managed sustainably. Low-carbon farming practices must be adopted widely, while raising farm productivity. Alongside the nature-based removals, by 2035 the UK should be using bioenergy (largely grown in the UK) with CCS to deliver engineered removals of CO₂ at scale.

Phasing out high-carbon assets

At the same time as reducing demand, increasing efficiency and enabling the take up of low-carbon solutions, high-carbon assets need to be phased out.

Boiler lifetimes of 15 years imply a phase-out date for the installation of fossil fuel boilers in advance of 2035, in order for uptake of low-carbon heat to be sufficient to decarbonise buildings by 2050. The CCC's scenarios involve sales of oil boilers phased out by 2028, and gas boilers by 2033 in residential homes, with the exception of hydrogen-ready gas boilers in areas where the gas grid is set to convert to low-carbon hydrogen*.

By the early 2030s every new purchase (e.g. vehicle, boiler etc) needs to be the zero-carbon option to allow time to phase out remaining high carbon assets

Where possible, new equipment should be designed to allow retrofit of low-carbon technologies like CCS or hydrogen.

- **Sales of new fossil fuel cars, vans and motorbikes phased out by 2032** at the latest.
- **Building on the phase-out of coal-fired power generation by 2024, no new unabated gas plants should be built after 2030**, and the burning of unabated natural gas for electricity generation should be phased out entirely by 2035. Any gas plant built before 2030 should be made ready for a switch to CCS or hydrogen (i.e. this should be both technically feasible and the plant should be located in a part of the country that will be served by the necessary infrastructure).
- **Emissions from the UK's growing fleet of energy-from-waste plants will need to be captured in order for energy-from-waste to be sufficiently low-carbon by 2050.** Waste should be minimised, and any new plants should be built with CCS or CCS ready.

Table 3.1

Phase-out dates of high-carbon activities under the Balanced Pathway

Technology/behaviour	Phase out date (sales)	Backstop date (operation)
New fossil-fuelled cars and vans	2032 (including plug-in hybrids)	2050
Gas boilers	2033 (in homes) 2030-33 (in commercial properties)	2050
Oil boilers	2028 (in homes) 2025-26 (in commercial properties)	2050
Gas power generation (unabated)	2030 (no new build of unabated gas plants)	2035
HGVs	2040	Beyond 2050
Biodegradable waste sent to landfill	N/A	2025 ban on all municipal & non-municipal biodegradable waste going to landfill
Unabated energy-from-waste plants	From today, new plants and extensions should be built with CCS or CCS ready	2050

* See the CCC's Policy Report which recommends early action by Government and Ofgem to identify key areas for hydrogen and for electrification of heat.

Table 3.2

Key metrics for actions in the Balanced Pathway to meet the Sixth Carbon Budget

		2019	2025	2030	2035	2050	Trend
UK greenhouse gas emissions	UK greenhouse gas emissions (MtCO ₂ e)	522	445	316	191	0	
	UK greenhouse gas emissions per person (tCO ₂ e/capita)	7.8	6.5	4.5	2.7	0	
Demand reduction	Weekly meat consumption (g) (includes fresh and processed meat)	960	880	770	730	630	
	Weekly dairy consumption (g)	2,020	1,840	1,620	1,620	1,620	
	Plane-km per person	11,700	11,000	11,000	11,400	13,700	
	Car-km per driver	12,900	12,600	12,400	12,200	11,700	
	Remaining waste per person, after prevention & recycling (kg)	490	400	310	280	300	
Efficiency	Carbon-intensity of a new HGV (gCO ₂ /km)	680	580	420	20	0	
	Increase in longevity of electronics	0%	30%	80%	120%	120%	
Electrification, hydrogen and carbon capture and storage	Carbon intensity of UK electricity (gCO ₂ e/kWhe)	220	125	45	10	2	
	Offshore wind (GW e)	10	25	40	50	95	
	Share of BEVs in new car sales	2%	48%	97%	100%	100%	
	Heat pump installations (thousand per year)	26	415	1,070	1,430	1,480	
	Manufacturing energy use from electricity or hydrogen	27%	27%	37%	52%	76%	
	Low-carbon hydrogen (TWh)	<1	1	30	105	225	
	CCS in manufacturing (MtCO ₂)	0	0.2	2	5	8	
	CCS in rest of the economy (MtCO ₂)	0	0.1	20	48	96	
Land	UK woodland area	13%	14%	14%	15%	18%	
	Energy crops (kha)	10	23	115	266	720	
	Peat area restored	25%	36%	47%	58%	79%	
	Land-based carbon sinks (MtCO ₂)	18	18	20	23	39	
Removals	Greenhouse gas removals (MtCO ₂)	0	<1	5	23	58	

The role of local authorities

By 2030 a whole new low/zero carbon approach to costing, procuring, commissioning and devising services will be in place.

Meeting the Sixth Carbon Budget, or reaching Net Zero earlier, in line with many climate emergency targets will mean a whole new zero carbon approach to managing, funding, procuring, commissioning and devising services across local authorities. Chapter 2 outlined the spheres of influence to deliver Net Zero and many of the powers and levers available to local authorities to deliver.

It will mean taking as many enabling actions as possible to help people and businesses take up the low-carbon solutions needed to deliver over half of the required emissions savings. Local authorities as well as the Government will need to review and change policies that prevent or impede low-carbon choices.

Local authorities, combined authorities and regional organisations will need to cooperate and lead on designing and planning places that are Zero Carbon, green and healthy. They will need to boost their skills and capacity to deliver investment in heat decarbonisation and transport systems that are efficient and that work for local people. Building a strong evidence base to back up decisions, supported by national policies will be critical to make sure that developers step up. Net Zero housing and commercial developments, connected to sustainable transport infrastructure, walking and cycling and public transport need to become the norm, not the exception.

Underpinning Net Zero economic development and a resilient recovery will be the business models, private sector investment, skills training, job creation and support to grow the local supply chains to install home energy efficiency measures and low-carbon heating, low-carbon farming skills, sustainable food production, tree planting and land-based jobs.

But as Chapters 1 and 2 of this report outlined, the powers, levers and influence available to local authorities have to deliver the required actions fully are constrained by significant funding and resource challenges. Gaps and contradictions in policies and powers are compounded by the lack of a duty or clear framework that drives the system-change holistic transformation needed across local authorities, regional organisations and national policy. If a framework can be developed to provide a clear route and strong funding and policy backing to local authorities, it will be possible to deliver these changes.

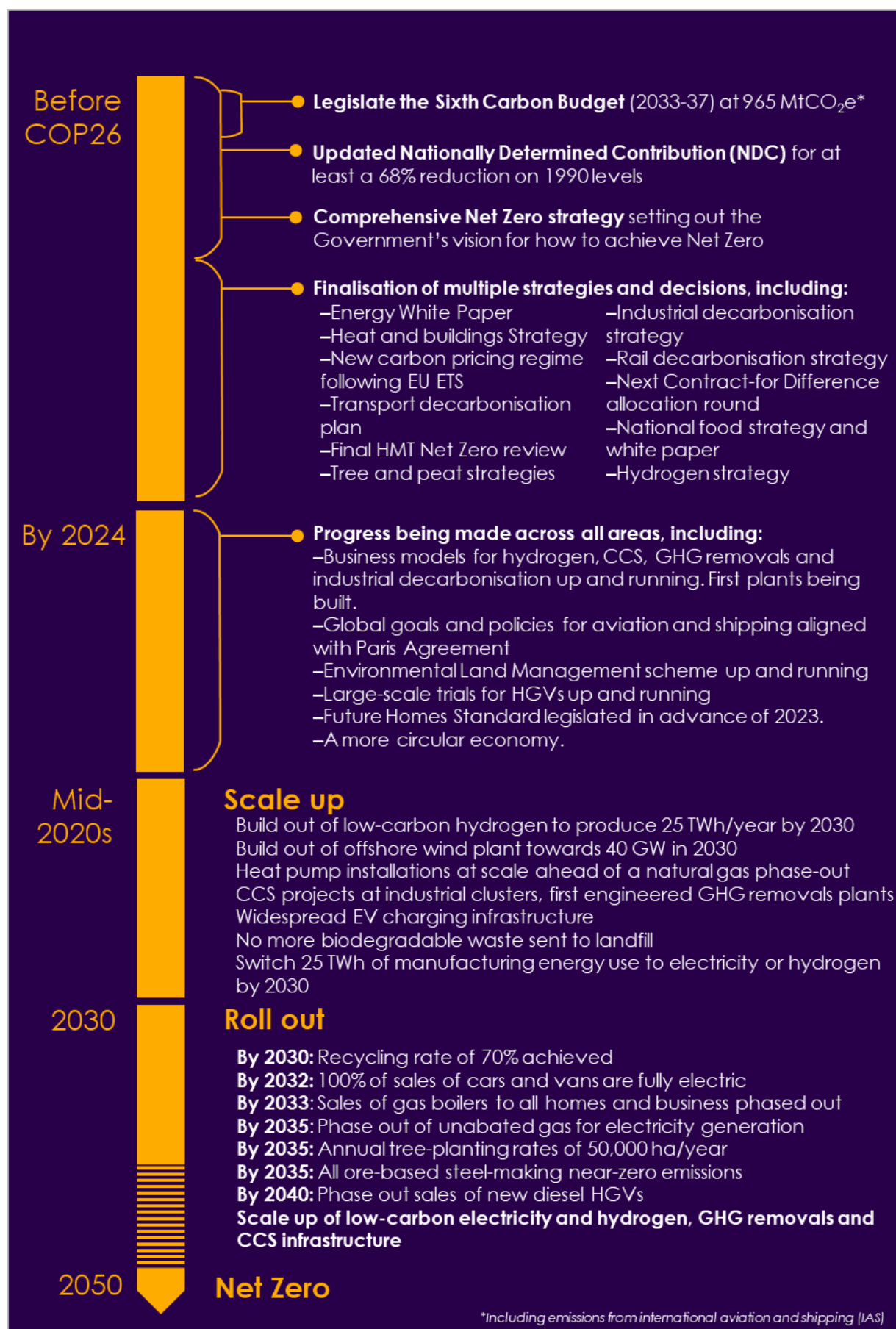
Figure 3.1 below shows the national policy and delivery timeline towards 2050.

The following sections on the Buildings, Transport (including a note on airports and aviation), Waste, Power (including a note on industry) and Land Use sectors outline:

- What needs to happen to deliver the Sixth Carbon Budget
- What government has committed to and what is still needed
- The key actions local authorities should take to deliver emissions reductions

This report cannot be exhaustive. Some local authorities are well on the way in planning their delivery actions and will find the information below simply confirms what they are doing. Others may find the information helpful in making their plans. Experts in particular sectors may find this overview too superficial and can refer to The Sixth Carbon Budget advice report and policy report for more details.

Figure 3.1 The national policy and delivery timeline for Net Zero



Source: CCC (2020) Policies for the Sixth Carbon Budget and Net Zero

2. Buildings

The buildings sector has not decarbonised at the pace of the rest of the economy and has remained relatively flat over the latter half of the 2010s. Building sector emissions are 87 MtCO₂, 17% of UK emissions. Between 2010 and 2017 heating and hot water for UK homes made up 25% of total energy use and 15% of our emissions. A further 4% of emissions are the result of electricity used homes for appliances and lighting¹. There are now more homes requiring zero-carbon retrofit than there were when the Climate Change Act was passed, with 1.8 million additional homes since 2007 now needing to be fitted with low-carbon heat.

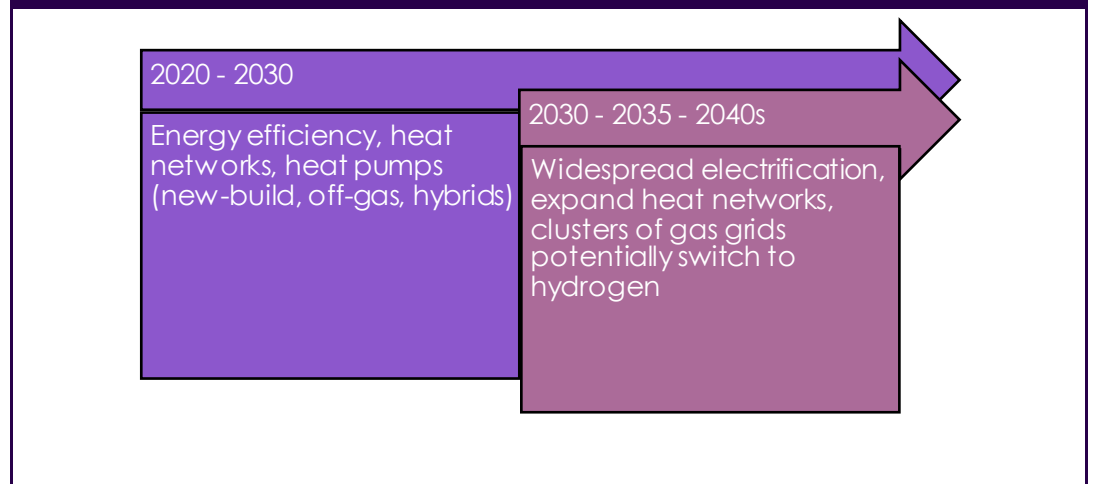
"Heat is the biggest challenge, it's the one that keeps me awake at night, in terms of decarbonisation"

-Martin Budd, Climate Change Manager, Hull City Council²

For local authorities with ambitious climate change targets, decarbonising the building sector is one of the biggest challenges because powers and funding schemes do not extend to the able-to-pay owner occupier sector, 15.5 million homes.

Box 3.1

What needs to happen to deliver The Sixth Carbon Budget and be on track for Net Zero?



A) How can the Sixth Carbon Budget be achieved?

Full hydrogen supply for heating is too unwieldy due to low system efficiency. As a worked example, 800 TWh of hydrogen would require 100-150GW of gas reforming with CCS; or 300 GW offshore wind capacity if just using electrolyzers.

The CCC does not recommend that all buildings in the UK switch to hydrogen for heating, due to concerns over emissions and deliverability of a full hydrogen scenario.* Instead, the CCC recommends that hydrogen play a more selective role, alongside extensive electrification through low-carbon heat networks, heat pumps and hybrid systems.³

- **A significant increase in installed home energy efficiency measures is needed.** All practicable lofts and cavity walls should be insulated (including loft top-up to current standards). Installations of solid wall insulation needs to rise in each local area from tens to hundreds of homes each year. By 2028 social and private rented homes and by 2030 all homes need to achieve EPC C rating where practical and affordable.

* See Chapter 3 of the CCC Advice Report for further details on the CCC's scenarios for buildings.

- **The CCC recommends that no new gas boilers should be sold beyond 2033.** Supply chains for heat pumps will need to scale up to replace this, with over a million heat pumps being installed each year by 2030, up from around 20,000 per year today. No new gas boilers will be installed in new homes from 2025.
- **From 2028 onwards no new fossil-fuel boilers should be installed in off-gas grid areas;** and remaining rural oil boilers will phase out by around 2050.
- **Public and commercial buildings will phase out gas with no new boilers installed from 2030 and no new oil boilers in 2025/26.** Energy efficiency programmes will support in-use performance standards. Public buildings should achieve an EPC C rating from 2028.
- **Existing district heating networks will switch to low-carbon sources** (electric heat pumps/hydrogen) in the 2030s. Heat networks will be developed in areas of dense heat demand, cities and towns.
- **By 2025 at the latest all new homes will be genuinely zero carbon using electric heat pumps or low-carbon district heating,** and the energy performance gap will be closed through post-occupation monitoring. Embodied emissions in construction can be reduced through the use of more UK sourced wood in construction.
- **Energy demand in buildings will reduce and become flexible,** batteries and smart appliances will enable a shift in consumption from peak demand times to periods when renewable energy is available.
- **Co-benefits will be warmer, healthier homes that are affordable to heat.** Jobs in the home energy efficiency and installer supply chain spread across the whole country including customer service, installation and maintenance. Homes will not overheat and will be well-adapted for climate impacts.

B) What has Government committed to and what remains to be decided?

Zero Carbon Homes were supposed to come into force in 2016 but the policy was scrapped. That means there is little certainty on the route for buildings decarbonisation in England. On the positive side, the government recognises that the building retrofit sector can support significant levels of jobs, evenly spread across the country, and the Buildings and Heat Strategy is awaited.

Existing buildings: The UK's 2017 Clean Growth Strategy recommended that all owner-occupied domestic properties be brought up to EPC band C by 2035, and by 2030 for rented homes (where practical, cost-effective & affordable) and for non-domestic rented buildings to be EPC Band B by 2030.

- Phase out high carbon fossil fuel heating off the gas grid in the 2020s
- Aspiration for public estate to halve emissions by 2032.
- **Minimum Energy Efficiency Standards:** the government is currently consulting on requiring properties with new tenancies to achieve EPC C from 2025 and all tenancies from 2028⁴. The spending cap for landlords would be raised from £3,500 to £10,000 to install measures and fines for non-compliance would rise. Local authorities have a role in enforcing these standards.

- **Buildings and Heat Strategy** due in 2020 should outline policies the government will take through the 2020s on building energy efficiency and decarbonising heat, including the role of heat networks, heat pumps, hydrogen and biogas. A decision on the role and locations for hydrogen in heating is needed early in the 2020s. Local areas are currently facing inaction or confusion on whether hydrogen is a viable option to decarbonise heat via the gas grid, or whether to focus on district heat networks and heat pumps. In fact, either option will require energy efficiency measures to be installed in homes at scale.

Current support for reducing emissions in existing buildings/decarbonising heat: funding until 2022 – this falls a long way short of the scale needed to deliver emissions cuts over the next decade, and makes forward planning demand and supply difficult.

- **The Third Phase of the Energy Company Obligation (ECO 3)** funding (~ £640 million annually) is in place until March 2022 targeting low income, vulnerable and fuel poor households. Local authorities ECO flex can direct 25% of this. ECO targets fuel poverty rather than emissions reductions and it is significantly less than previous supplier obligation schemes such as CESP and CERT. It is also costly to administer in higher cost areas or areas with more varied types and tenures of homes, such as those in London which therefore misses out on funding.
- **Local Authority Green Homes Grants** £500 million: Phase 1 had £200 million to be spent by March 2021. Of this, just £76 million was allocated to 56 local authorities for ~11,000 homes for low income households⁵. Phase 2 £300 million from March 2021 – 2022.
- **Green Homes Grants:** Up to £10,000 for householders and £5,000 for private and social landlords to install energy saving measures and low-carbon heating system through to March 2021. An extension of the scheme for a further year was announced in November 2020.
- **Social Housing Decarbonisation Demonstrator** £50 million for local authorities and social housing providers to treat homes with an EPC rating D or below. This is a welcome scale up from the three projects funded in the initial Whole-house Retrofit Grant scheme for the sector, however the completion date of December 2021 is a short window for delivery.
- **Domestic Renewable Heat Incentive (RHI)** supporting renewable heating systems, has been extended to March 2022. It will then be replaced by a single Clean Heat Grant scheme of £4,000 until 2024. The **Non-domestic RHI** scheme expires in March 2021, after which only large schemes commissioned by 31 March 2022 can be claimed. It is not clear what will replace the scheme in after that date.
- **£1 billion Public Sector Decarbonisation Fund for energy efficiency and low-carbon heating in public buildings**, including local authorities, schools and hospitals. Administered by Salix. Recognising the resource and capacity restraints in the sector, an accompanying £32 million Public Sector Low Carbon Skills Fund has been provided to support organisations to bring in staff with the skills to design and deliver projects.
- **The Heat Network Delivery Unit** was established in 2013 and is now in its tenth round providing support for local authorities in England and Wales for the early stages of heat network development. 65% of eligible costs are funded. 250 projects in 150 local authorities have been funded, with four going forward to Heat Network Investment Project finance.

- **Ongoing support for innovation:** A range of BEIS and URKI funded innovation projects are ongoing, covering housing, heat, smart systems research, demonstrators and pilot projects including the £16.5 million Electrification of Heat project, the DEEP Project, Prospering from the Energy Revolution, Energy Innovation Zones, Industrial Strategy Challenge fund schemes. (See Chapter 2 for concerns about competitive, fragmented funding, pilot schemes, and failure to replicate and roll-out to deliver scale).

Box 2.2

Heat and Buildings Strategy

The Heat and Buildings Strategy is urgently needed to provide a longer-term pathway in delivering buildings and heat decarbonisation. Current policy and funding fall short of what is required, despite the recent short-term funding announcements set to support a resilient recovery. Clarity on who delivers what in building heat decarbonisation is critical. Past schemes were led or co-ordinated by local authority teams who built up area wide delivery partnerships, led householder engagement, forged trust and supported local jobs.

Incentives to support investment in energy efficiency and low-carbon heat are needed; in 2017 Scotland invested £35 on energy efficiency, Northern Ireland £23, Wales spent £17 and England £8 per person on average.⁶ The price differential between electricity and gas needs to change as this has an effect on the viability of district heating schemes and costs of running heat pumps that replace gas boilers. The CCC's Policy Report finds that public funding towards social housing and households in fuel poverty is well targeted but that there are gaps in funding to scale up heat pumps and to develop heat networks that leverage in private finance.

Meanwhile, short term funding and lack of policy means that local areas are all forging their own solutions and as a consequence there is a risk that local authorities and their partners may be investing in projects that are derailed, or stranded by subsequent government policy, such as an end to incentives (such as the RHI), subsidies or price signals.

Box 2.3

Devolved Administrations

Devolved Administrations: Scotland:

The Fuel Poverty (Targets, Definition and Strategy) (Scotland) Act 2019 and the Climate Change (Emissions Reduction Targets) (Scotland) Act 2019 each set ambitious targets - to eliminate poor energy efficiency as a driver of fuel poverty, and to end Scotland's contribution to climate change by reaching net zero emissions by 2045. The Scottish Government consultation Improving energy efficiency in owner occupied homes⁷ looks to mandate homeowners to increase their EPCs to minimum C after 2024 when selling or making certain renovations. Meanwhile it has set a target for socially rented homes to achieve EPC B by the end of 2032.

Private rental landlords must currently meet minimum EPC E for new tenancies and EPC D after April 2022, by March 2025 all private rented properties must be EPC D. Local Heat and Energy Efficiency Strategies have been piloted in 23 local authorities with a view to making LHEES a statutory duty to deliver emissions cuts and eradicate fuel poverty. Each strategy will importantly, have a Delivery Plan. Local authorities in Scotland are integrated into the delivery of energy efficiency and heat decarbonisation in homes and businesses through area based schemes which fit into and complement national schemes, and which provide short term actions and long-term strategy⁸. A building standards review is due in 2021.

Wales:

The Welsh Government has developed four regional energy strategies, including an energy vision, energy modelling and an economic assessment identifying regionally relevant opportunities. Each strategy will be supported by a delivery plan. It is devising governance arrangements to ensure the strategies result in action.

Northern Ireland:

The Northern Ireland Executive is currently developing an Energy Strategy to include energy efficiency minimum standards, targets, investment and development of the skills and capacity of the sector. Central Government aims to reduce its own energy consumption by 30% by 2030 (from a 2016/17 baseline year)⁹. The Northern Ireland Sustainable Energy Programme¹⁰, administered by the Energy Savings Trust provides £8 million for domestic and commercial energy efficiency and heating schemes with a focus on fuel poverty.

New buildings: Current Building Regulations and Planning Policies are not sufficient to deliver the net zero compliant buildings that are required by 2050 and before. Part One of this report outlined some of the challenges local planning authorities face in trying to deliver low-carbon buildings, going above of national building standards and in engaging housing developers on low-carbon heating, particularly heat networks. Proposed planning policy changes limit the ability of local planning authorities to deliver emissions cuts faster than the national trajectory by setting higher energy performance standards in homes or requiring low-carbon heating or heat networks to be installed.

- **The Future Homes Standard** only envisages carbon reductions of 75-80% on the current (2013) building regulations for homes by 2025. The Building Regulations Part L and F (Ventilation) are under review, with a view to reducing CO₂ emissions by either 20% or 31%. It may remove the Fabric Energy Efficiency Standards (FEES) and does nothing to address non-domestic buildings. Removing FEES while the grid decarbonises allows energy inefficient homes to be built, creating a long-term increased demand for energy. It also proposes to remove a Local Planning Authority's ability to require higher standards. This is due to come into action in 2025. In light of the CCC's letter on the Future Homes Standard, the government has stated that it will review its roadmap to ensure that implementation takes place in the shortest possible timeline.
- **The Planning White Paper** proposes a move from locally developed plans and policies to a centralised approach. This will see areas divided into three types of zones (Growth, Renewal and Protection) with assumptions for outline permission and permitted development in the Growth and Renewal zones simply using local design codes and pattern books. The spatial planning role of the local authority is reduced but a stronger enforcement role in planning standards and building regulations envisaged. There is little detail behind the ambition that homes built under the new planning system will not need retrofitting in the future, and the proposals are vague on delivering holistic design for low-carbon energy and transport systems, amenities and places that function effectively.
- **New planning policy needs to align more widely with spatial planning for sustainable transport and energy systems** – to support decarbonised heat as a norm – based on appropriately sited, highly energy efficient buildings, and needs to support building retrofit across whole areas.

The role local authorities and government should play delivering a planning system that leads to Net Zero been outlined in the Town and Country Planning Association and Centre for Sustainable Energy's response¹¹ to the Planning White Paper Consultation, incorporating views from the Green Building Council and Client Earth. Meanwhile the role of standards and planning is included in two July 2020 publications: Regen's Local Leadership to Transform our Energy System¹² and the Blueprint for Accelerating Climate Action and a Green Recovery at the Local Level¹³.

Box 3.4

The need for energy planning – governance and delivery

As the governance around the move from gas heating and the discussions about where hydrogen will play a role takes place. Local areas, cities in particular, are already carrying out Local Area Energy Planning in various forms. In Bristol this has already catalysed Bristol City Leap. Whilst Local Area Energy Planning is not the whole solution, where underpinned by a robust methodology, it can provide better information to facilitate the process and is a hook to engage the public. BEIS and Ofgem should support a coordinated and planned approach to ensure that electricity network upgrades can be delivered in time and at reasonable cost. This is particularly urgent in areas off the gas grid.

Local authorities or partnerships commissioning local area energy plans should focus on what they will enable. Using a robust methodology that includes modelling as well as public engagement and consideration of governance and most importantly delivery actions resulting from the plan is vital. There are too many energy strategies and plans gathering dust on shelves.

C) What are the key actions for local authorities on buildings emissions?

Existing buildings including low-carbon heat and energy efficiency

- **Maximise opportunities to deliver energy efficiency in buildings.** Before anything else, ramping up delivery of energy efficiency measures as a step on the way to decarbonising heat more fully, is something all local authorities with housing duties should do. This should be carried out in tandem with work on building safety. Regardless of the future heat decarbonisation route for the local area high quality energy efficiency measures in housing is a no-regrets activity. Information from ECO, ECO Flexible Heat, Warmer Homes and Central Heating Fund experience can be combined with EPC data to indicate the numbers and locations of priority homes. Key partners are: ECO delivery partners, LEP, Social Housing Sector, Community/NGOs working on retrofit and energy, Energy Advisors & Council Staff.
- **Develop an energy efficiency and decarbonised heat strategy and action plans for delivery in the 2020s** to bring housing up to EPC C for council housing, social housing (working with local registered providers), private rented sector and owner occupiers. Getting homes and buildings ready for decarbonised heat is more than a matter of installing loft or cavity wall insulation. Solid wall insulation, new windows and doors, air tightness, ventilation and heat recovery and heat pumps with a water tank and larger sized radiators are a much more disruptive, complex, technically challenging and risky proposition for a householder. Energy efficiency or retrofit strategies should assess the building stock, tenure and suitability for the low-carbon heating.

Local authorities and their partners should start to increase delivery of energy efficiency measures as soon as possible. Heat pumps should be installed where appropriate¹⁴.

- **Most local authorities will have carbon reduction plans for the council estate.** Update these to bring them in line with Net Zero. Public buildings can form anchor loads for heat network investments or to trial and demonstrate new technologies. The government's recent announcement on public estate decarbonisation provides funding for staff to develop energy efficiency projects.
- **Keep communicating:** Provide advice and information for residents and businesses on energy efficiency and low-carbon heating options. Raising awareness of the transition needs to be undertaken in sequence with practical support and options for action, so that people are supported. Working with delivery partners and community-based organisations to promote what works locally through Green Buildings Week.

Box 3.5

Rolling out energy efficiency lessons from social housing to the wider housing stock

Local authorities should support Registered Providers in energy efficiency and low-carbon heat schemes, and use the evidence and learning from these schemes to support the development of the wider market and local supply chains. About 2.5 million homes, 10% of homes in England, are rented from housing associations and registered providers. These homes are required to have an EPC E minimum and meet the Decent Homes Standard. Often social housing stock is well-maintained and tends to track above the national average. For example, 91% of Stockport Homes housing stock is at EPC rating C or above compared to the borough average of 70% D or below¹⁵. However, 1% (34,000) of England's social rented stock has an EPC of F or G¹⁶.

- **Areas outside of industrial clusters should not assume that hydrogen will provide an answer to heat decarbonisation.** The CCC advises that energy efficiency and heat electrification are low regrets options on the path to Net Zero. Hydrogen could be a viable option in some areas, and where it is available, is likely to be best used alongside heat pumps as a heat top up through hybrid systems. As stated above, energy efficiency measures to reduce demand, combined with electrification of heat through efficient heat pumps and heat networks is likely to be a preferred solution to displacing gas heating in most areas.
- **Identify areas suitable for heat networks which are effective in providing low-carbon heat to dense areas,** particularly those with a baseload heat demand such as municipal buildings. The government's Heat Network Delivery Unit¹⁷ (HNDU) provides 67% of costs for early stage development such as heat mapping, energy masterplanning and techno-economic feasibility. Local authorities with schemes in mind should now apply as heat networks take a long time to develop. Existing district heating networks will need to switch to low-carbon sources (electric heat pumps/hydrogen) in the 2030s, while networks provided by Energy from Waste facilities will need to install CCS from the mid-2030s. Housing teams and Development Management Masterplanners may need training in order to specify desired outcomes in masterplanning. Key partners DNO, Heat Network Development Unit, Local Energy Hub, public sector estate.

- **Plan for trench sharing in zones identified for heat networks and in zones identified for electrification of heat, through heat pumps.** If street works are scheduled it saves cost and disruption to use trench sharing to lay pipework for heat networks, grid reinforcement for heat pumps and fibre cable for broadband and smart energy or data systems. Key partners DNO, Heat Network Development Unit, Local Energy Hub, New buildings and developments.
- **The 5% of homes in areas off the gas-grid currently using high carbon fossil fuels** are a priority for energy planning, as high carbon fossil fuel heating will be phased out during the 2020s in favour of low-carbon heating, such as electrified heating through heat pumps.
- **Support the smart meter roll out.** Smart meters give people a better idea of energy use in their homes and in future will provide opportunities to join energy schemes that provide time of day tariffs or energy services that aggregate demand reduction in communities and reward or incentivise this.

New Buildings

- **Local authorities should recognise the economic and skills opportunities of Net Zero planning policy.** Local Planning Authorities should continue to develop and implement planning policies that lay the foundations towards net zero. Zero carbon developments avoid future retrofit costs for councils, landlords and residents. Use of standards such as Passivhaus can provide certainty around the need to uplift construction skills and can address the as built performance gap. Such policies should link to local colleges and promote modern methods of construction to develop the future skilled construction workforce needed.
- **Local planning authorities currently developing Local Plans should gather evidence to support policies that require developments to exceed current building standards.** This should include evidence that shows that higher energy performance and low-carbon heating systems will add value to the sale or rental price and reduce energy costs for householders. This evidence can feed into the determination of the value of the development. Developers may be required therefore to take these into account when determining the land value of a scheme and may be assumed to have included these costs in their own viability assessment. Stockport Council has commissioned studies into this for its Local Plan development.
- **Specify high standards for new buildings on council's own land.** Local authorities can require that new homes or commercial buildings are built to Passivhaus or equivalent low emissions standards, or BREEAM Excellent. Councils with their own wholly owned housing development companies are building to higher standards, incorporating low-carbon heating systems before they are required by national policy (See Chapter 2). Zero carbon council housing projects and finance teams should help planning teams to understand the full cost saving implications of zero carbon homes so they can share learning with developers, and use this evidence in Local Plans.

Skills and awareness raising

- **Invest in energy, housing and environment staff and skills** to work on area-wide planning for domestic and commercial building energy efficiency and heat schemes, a focus on off-gas grid home and social housing.

They will need to co-ordinate funding bids and delivery projects that build up demand and supply chain skills. This would include delivering Local Authorities Green Homes Grants, Heat Network Delivery Unit bids, Salix finance and developing innovation projects and partnerships. Smaller District Councils should continue to collaborate on wider area schemes, supported by County Councils who hold EPC data. Key partners in this delivery will be housing providers, private sector landlords, DNO, ECO delivery partners and supply chains.

- **Raise awareness and engage key staff across the entire council**, including Building Control, Planning and Conservation teams, Housing officers, Housing partnerships, Finance and Elected Members about the buildings and heat transition. This may form part of wider climate or carbon training. As technologies develop, regulation emerges and plans progress, regular updates may be helpful to keep people up to date. There will be information from innovation projects, new business cases and success stories, so myth busting, updating and reviewing will be part of the process during the 2020s. Train new staff and newly Elected Members.

Box 3.6

Maximising ECO-flex impact through staff training

Walsall Council's Eco-flex aims to tackle fuel poverty by broadening out ECO to people earning £28,000 or less living in homes that are expensive to heat or with health conditions exacerbated by living in a cold home. Over 800 homes have received energy efficiency measures 23% of which are private rented homes. Staff trained in NEA City and Guilds Energy Awareness aim to make 'every contact count' in promoting Eco-flex to people applying for disabled facility grants and to private landlords¹⁸.

- **Housing and Economic Development teams should collaborate to provide support to the local supply chain in the building and installer sectors**, a key economic driver of the transition. Provide business support to construction, energy efficiency and heating installer businesses in becoming PAS 2030 (2017) compliant, Trustmark or Microgeneration Certification Scheme (MCS) accredited. Publicise training schemes, visits and toolkit talks from experienced installers particularly in retrofit, insulation and heat pump technologies.

Box 3.7

Supporting the retrofit supply chain

Greater Manchester's Growth Hub's Get Ready to become a Green Homes Grant Supplier events have provided support on trading standards and requirements of the Green Homes Grants to local businesses.

- **Build capacity to partner in research, demonstration, pilot and pathfinder projects.** Energy requirements from buildings, transport and industry coupled with distributed energy generation will change the way the electricity grid operates. Flexibility, batteries and smart appliances combined with price or carbon signals will shift consumption from peak demand times towards periods when renewable energy is available. New business and finance models need to be developed in ways that are fair and affordable, local authorities are useful partners for pilot projects because they have access to public estate and housing where schemes can be trialled and monitored. Any such schemes need to be sufficiently funded to enable and support and replication where models appear viable, and they need to focus on the people involved, and not just the technology.

Box 3.8**Delivering home retrofit – moving from funded pilots to mass roll-out**

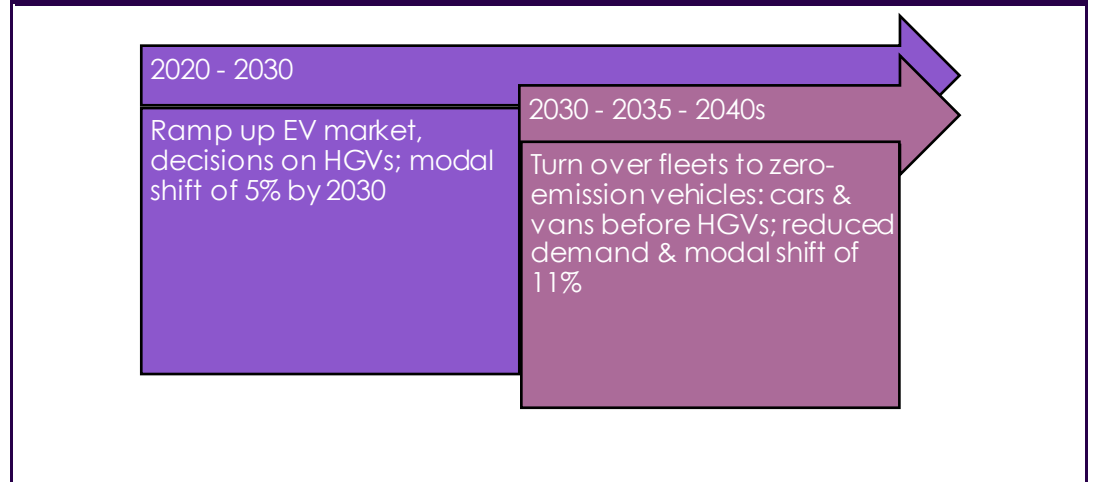
London Councils including Sutton and other areas such as Cornwall and Nottingham are delivering deep retrofit measures to homes to kick start the local supply chain, develop business cases and lower emissions under various Retrofit Accelerator¹⁹ or Whole House Retrofit²⁰ schemes. Bristol City Leap goes further, with its current Joint Venture procurement for a city-scale low-carbon, smart energy infrastructure programme. The New London Plan outlines heat requirements in new developments with a focus on low-carbon heat.

2. Transport

Surface transport is the highest emitting sector in the UK making up 22% of UK emissions in 2019. A 70% reduction in emissions between now and 2035 is needed. The number of kilometres driven has increased notably over the past decade and total road traffic was 530.6 billion vehicle-kms in 2019, an increase of 6% since 2008. Significant growth in SUVs from 6% market share in 2008 to 25% in 2019 has stalled progress in reducing new car CO₂ emissions.

Box 3.9

What needs to happen to deliver the sixth carbon budget and be on track for Net Zero?



A) How can this be achieved?

The CCC's recommended Sixth Carbon Budget pathway sees a rapid shift to electric vehicles over the 2020s and 2030s, alongside a shift away from car journeys wherever possible, and a shift to low-carbon HGVs. In particular:

- **By 2032 at the latest all sales of new cars and vans should be electric. This means that by 2030 over a third of all cars are likely to be electric vehicles (EVs)**, and the EV share of the fleet is expected to be nearly 90% by 2040. To deliver this change a steep scale up of chargers from current levels is needed across all UK regions. This will also require upgrades to the local electricity distribution network.
- **A third of the HGV fleet should be low-carbon in 2035**, though trials of low-carbon options will need to take place before then. The main HGV transition to battery, overhead wires and hydrogen fuel cells is expected to take place during the 2040s. Driver efficiency and logistics improvements such as urban consolidation centres are expected to reduce HGV and van kilometres driven during the 2020s.
- **Constraining the growth in vehicle mileage is vital to reducing emissions**, even as EVs replace petrol and diesel cars. Car and van mileage can be reduced by 7-16% by 2030 and 12-34% by 2050 against today's levels. There should be:
 - greater investment in resilient digital technologies mobile connectivity and fibre broadband to drive the societal and technological changes that reduce trips by home working and online conferencing

- Shifting 33 – 35% of trips to walking, cycling and public transport such as shorter trips, for cities this can be higher.
- increasing car occupancy rates through ride sharing and mobility as a service and car clubs
- van demand should reduce through a combination of last mile local deliveries by e-cargobike and on foot, mini-consolidation centres, a reduction in failed deliveries and experienced driver or routing technologies.
- **The bus fleet should become zero emission** through electrification or hydrogen.
- **All diesel trains should be replaced by 2040.** Rail freight fleet will also be renewed.
- **Local benefits of reduced traffic are better air quality** which improves health, physical and mental health benefits from active travel, health sector savings, improved public realm from lower traffic volumes, reduced congestion, safer roads for walking and cycling, economic benefits from public transport linkages and ease of access to work, services and job creation from micro-logistics. Car and van drivers will benefit from savings in fuel costs*.

B) What has Government committed to and what remains to be decided?

Current funding schemes prioritise road building. The government in 2020 announced a road-building programme of £27 billion. This is alongside a six-fold increase in funding to £2 billion for walking and cycling investments, and less than £1 billion per year of Government funding currently spent on electric vehicle grants and charging networks.

The Government has set an end date for the sale of petrol and diesel cars and vans of 2030 and 2035 for hybrids; grants and vehicle tax discounts for EVs are in place until 2025.

The Government is supporting the development of an EV charging network; however, some barriers remain.

- In May 2020 the Government published a vision for the rapid charging network. Funding examples include £20 million in 2020/21 for local authorities towards on-street charge points²¹. Round 2 of the Ultra-Low Emission Taxi Infrastructure²² scheme has provided over £20 million for 27 local authorities to install 557 rapid and 228 fast charge points for e-taxis. A longer-term EV charging strategy is yet to be developed.
- Local authorities using OLEV funding sometimes find that grid connection costs for proposed EV charge points are too high, so cannot install in some key locations. They also find that some private sector companies are not delivering at the speed they would like. Longer term energy plans for grid reinforcement (see Power) may assist in this challenge.

* Over the next 15 years the cost of buying and running an EV will be significantly lower than a fossil fuelled vehicle, due to lower operating costs. By 2030 the cost of buying an EV is likely to be cheaper than a fossil-fuelled equivalent.

Box 3.10
Office of Low Emissions Vehicles

The Office of Low Emissions Vehicles (OLEV) works across government to support the early market for ultra-low emissions vehicles (ULEV) and is part of the Department of Transport and the Department of Business, Energy & Industrial Strategy. It provides funding for the charging network, low-emissions taxis, buses and industry innovation. Usefully its web page²³ provides the full picture. [The Energy Savings Trust](#) is funded to give free support to local authorities on the EV transition, technical and funding support, fleet and logistics efficiencies and planning policy. See Useful Resources.

The Department of Transport needs to set out and implement a strategy to transition to zero-carbon freight, including stronger purchase incentives, infrastructure plans and clean air zones. Low-carbon HGV trials and a decision on how to shift HGVs is needed in the 2020s. It also needs to evaluate schemes to reduce HGV and van use in urban areas (e.g. e-cargo bikes and use of urban consolidation centres), to reduce traffic and improve the safety of active travel.

The Government has recognised that modal shift is a strategic priority for decarbonising transport emissions. It has fast-tracked emergency funding for active travel and public transport and announced changes to the Highway Code and parking enforcement powers for local authorities. It will establish Active Travel England to administer and support £2 billion for walking and cycling with a target of half of all trips in cities and towns by 2040 by walking or cycling.

Weighting funding towards active travel, public transport and digital infrastructure rather than road building would help to deliver the level of modal shift required to counteract the likely increase in car use due to the COVID-19 pandemic. Short term funding schemes make it harder for local areas to plan and deliver phased investments with sufficient local engagement and to plan transport systems aligned to net zero. A National Bus Strategy is due to be produced in 2020.

C) What are the key actions for local authorities on transport?

The vast majority of journeys over a mile are made in a car or van—even for distances of 1–2 miles over 60% of journeys were made by motor vehicle²⁴. Local authorities need to reduce transport demand, especially vehicle mileage, while supporting active travel and public transport; design out vehicle dependence and support the shift to low emissions vehicles running efficiently. Policy and funding support in this should be aligned by LEPs, sub-national transport bodies and Highways England to achieve this, alongside national policy.

Actions are listed in three sections: Strategy & Planning, Infrastructure and Communication & Enabling Actions.

Strategy & Planning

- **Ensure that policies and plans support walking, cycling and public transport:** Land use and Transport Planning (In the two-tier system District Councils are the Local Planning Authority and County Councils are Local Transport Authority) Local Plans and Transport Plans should deliver modal shift from cars to walking, cycling and public transport.
- **New developments should prioritise walking and cycling infrastructure at the masterplanning stage** and should be well-linked to viable public transport routes. Planning policy can set maximum (rather than minimum) car parking spaces for developments or even car-free development.

Box 3.11

One of its kind: Nottingham City Council Workplace Parking Levy

Nottingham City Council is renowned for its Workplace Parking Levy, which has raised funds for link buses and tram extensions in the city, promoting modal shift. However, it took 10 years to achieve and remains a unique example of the use of this power. Other local authorities are considering its use to raise additional funds for public transport and to reduce car use.

- **Local plans should identify sites for consolidation centres near road links, and micro-consolidation centres locally.** However, local authorities do not have powers to oblige delivery companies to use these. With increasing van use from on-line shopping, local authorities face a wicked problem in tackling this. The DfT's Scientific Advisory Council²⁵ met in 2019 to discuss the last mile challenge and potential Industrial Challenge funding, but enterprising local authorities could co-design and trial models with local climate change partnerships, low-carbon communities or businesses.

Box 3.12

Tackling transport at a city-scale system-wide

Greater Manchester 2040 Transport Strategy's Right Mix vision focuses on changing travel behaviour towards public transport, active travel, more local travel, and more travel to town and city centres in order to reduce car mode share from 61% of trips in 2017 to no more than 50% of trips in 2040. Its Bee Network Vision aims to be the first city-region with a fully joined up walking and cycling network totalling over 1,000 miles.

- Local authorities should have a Local Cycling and Walking Infrastructure Plan* that takes into account recommendations in the Gear Change report²⁶. A LCWIP will help identify schemes to deliver modal shift²⁷ and enable local authorities to attract funding such as the Active Travel England £2 billion funding for towns and cities. This funding is welcome, however, without funding to reduce incoming cars from the wider area, measures to promote modal shift can be undermined by incoming traffic.
- **Work jointly with bus operators** to provide a bus network that is rapid, reliable and affordable. This can be done through a bus strategy and bus quality partnership. However, improving bus services is more challenging because local authorities do not control routes, frequencies and fares. London is an exception to this, and Greater Manchester is exploring bus franchising under its devolution deal. Key partners: Bus operators and the Regional Transport Commissioner. Engage with LEPs and sub-national transport bodies to focus on public transport investment, integrated ticketing and a focus on Net Zero compliant transport investments over road junction and road investment.

Box 3.13

Introducing Electric buses in Warrington

Warrington Borough Council's wholly owned bus company, Warrington's Own Buses is replacing 140 buses with electric models and is building a new bus depot with charging infrastructure for an all-electric fleet. Bristol City Council is expanding its fleet of bio-gas bus services along with pedestrianisation of some city streets.

- **Work in partnership with LEPs and sub-national transport bodies** to improve train provision.

* Support was made available through the Local Authority Access Fund to resource this and build capacity in 46 local authorities, although 78 expressed interest in receiving support

Infrastructure

- **Use parking powers (Traffic Regulation Orders) to repurpose parking spaces** for car clubs, cycle parking and EV charging; scale parking charges to promote the use of public transport. Introduce solutions to on-street parking pressures and local resistance to changes in parking arrangements by identifying locations for communal community EV charging hubs. Key partner: DNO and private sector EV charge point operators.
- **Implement Low Emission and Clean air zones and Air Quality Management Areas to reduce polluting traffic.** Where areas link with the Strategic Roads Network, link up with Highways England. Highways England lacks a decarbonisation plan, but has funds to support bus and cycling infrastructure routes near the network.

Box 3.14

Highways England support for walking & cycling routes

Users and Community Fund: In the port area of Bristol, as part of the M49 Avonmouth scheme, Highways England are creating a network of walking and cycling routes. Working in partnership with Sustrans, Bristol City Council and South Gloucestershire Council.

- **Support schemes to improve broadband and mobile connectivity** across the local area. Rural broadband is being supported by additional funding from councils through the Gigabit Broadband Voucher Scheme²⁸.

Enabling Actions

- **Communications and conversations** with residents and businesses on their travel and transport needs is important to prepare the way for changes that are staged, with alternatives being available if car use is restricted. Transport and parking, along with changes to waste collection are two of the main political hot topics facing Elected Members.
- **In Rural authorities, County Councils in cooperation with District Councils, should aim to reduce car reliance, promote EV use and support innovations in rural bus services and shared transport** (car clubs, lift share and mobility as a service). Active England funding is targeted for cities and larger towns, so alternative funding support will be needed to provide safe routes in areas where distances are practical for walking and cycling.

Box 3.15

Demand responsive rural bus services

Rural government funding schemes catalysed entirely new approaches to the provision of rural public transport, such as the InterConnect network and CallConnect²⁹ demand responsive services in Lincolnshire, which are well established and continue to flourish. CallConnect is a service that can be booked one hour or one week in advance and uses routing technology to meet customer demand. In other areas, new services were withdrawn when project funding ran out.³⁰

- **Reducing business and customer travel to council services.** Review staff travel policies, roles requiring a vehicle, investing in EV pool cars and e-bikes, reviewing service provision (home carers) and location of customer-facing services to identify opportunities to reduce staff commute and business travel, emissions and costs from council operations.

- **Decarbonising transport – promoting electric vehicle uptake.** Install EV charge points (car parks, community charging hubs and on-street parking kerbside points); switch fleet to EV; develop an EV strategy; support EV car clubs and mobility as a service (MAAS); use taxi and private hire vehicle licencing powers and rapid charger installation to switch taxi fleet to EVs; update planning policies to include charge points on new developments or car clubs in car-free developments; consider Low Emissions Zones and Clean Air Zones (note EVs still produce fine particulate-matter); engage with businesses to support van switch over. Key partners: DNOs need to be fully supportive of the EV strategy in order to invest in the grid ready for increased demand.

Box 3.16

Try before you buy, Leeds City Council promoting e-vans

Leeds City Council is switching its fleet to EVs and is making 49 e-vans available for trial use by local businesses in a try before you buy scheme funded by Highways England and the Clean Air Zones Go Early grant.

- **Support logistics improvements to reduce HGV emissions using traffic powers;** restricting vehicle type, weight and delivery times in specific areas. New developments should support sustainable logistics, siting developments near transport connections. In partnership with businesses, review opportunities to develop consolidation centres and associated logistics innovations, including last mile. Local authorities do not have powers to require businesses to participate in consolidation schemes, so can only encourage or support innovation. In the mid-2020s engage with trials for HGV decarbonisation options (Hydrogen, electric battery, catenary (wires) or hybrid). Key partners: businesses, social enterprises, Freight Association, LEP.

Box 3.17

Reducing HGVs and delivery vans – micro-consolidation centres

The City of London has tackled last mile deliveries using three of its underused sites for micro-consolidation centres. It has also introduced a Freight and Servicing supplementary planning document for major new developments. Calderdale Council has supported a grassroots e-cargo bike initiative, Cargodale, set up to deliver during the COVID-19 crisis and now delivering for shops in three market towns, as a result a micro-consolidation centre with four e-cargo bikes is being established.

- **Keep communicating:** Local authorities have a convening and leadership role. Elected Members need to be on board. Ongoing dialogue with residents and businesses is vital to ensuring plans are practical, acceptable and can be monitored and adjusted. Willing residents, community and environmental groups and businesses will have ideas on transport solutions and can champion behaviour changes for modal shift, suggest places where EV charge points can be installed and set up car clubs and local delivery enterprises.

Box 3.18

Scaling on Street Charging and car clubs

Innovate UK is funding the Scaling On Street Charging Infrastructure (SOSCI) project, led by community owned Charge My Street, to install 200 22kW fast chargers where on-street charging is needed. Durham County Council, Carlisle City Council and South Lakes District Council are project partners. Durham is also trialling a rural EV car club in Weardale and has set up special deals with Renault for local people switching to EVs.

D) Aviation and airports

Aviation emissions are not counted in local area emissions. The Department for Transport (DfT) is responsible for deciding where airport capacity expansion is permitted. The CCC recommends that UK aviation needs to achieve net zero by 2050 (remaining emissions offset by GHG removals), with DfT setting a clear trajectory for achieving this goal. Demand management policies will need to put in place by ~2023, so there is the ability to constrain UK airport passenger numbers to stay on track. Our central estimates for efficiency, sustainable aviation fuels and GHG removals would only allow a 25% increase in passenger numbers between 2018 and 2050 (compared to a projected 64% increase). Furthermore, airport capacity should only expand if there are corresponding restrictions elsewhere in the UK (i.e. no net expansion), or the sector is projected to sufficiently out-perform DfT's emissions trajectory for at least the next 15 years.

Aviation emissions amount to 7% of UK emissions but are an increasingly important issue, because aviation is likely to be one of the largest emitting sectors by 2050. There are also non-CO₂ impacts from aviation that contribute to climate change. Local authorities can separate airport and aviation emissions, but should not ignore them in climate conversations.

Airports are a source of employment to local areas, a connection to other places for many people and are seen as vital to regional economic health by local authorities. But flying represents a social justice issue, with around 50% of the UK public not taking a flight in a given year, and 70% of flights being taken by 15%³¹ of the public (these figures include domestic flights). Climate Assembly UK discussed aviation and want to see solutions that allows people to continue to fly and travel the world, but not without limits.

Airport ground operations contribute to local area emissions and local authorities have little influence over them. Local authorities in their planning role have an influence over airport expansion, which can affect transport emissions, and installation of new fuel production and storage facilities; this could include facilities for sustainable aviation fuel production. Refusal to grant permission to expand an airport might be necessary to constrain passenger numbers in line with the requirements of the sector trajectory. In February 2020, North Somerset Councillors refused Bristol Airport's expansion stating that the economic benefits were outweighed by the environmental and social impacts.

Some local authorities own airports, which are an important revenue source. Luton Airport is wholly owned by its council, and Manchester Airports Group which runs Manchester, Stansted and East Midlands Airports is co-owned by Manchester City Council with a 35% share and the nine other Greater Manchester Authorities with 29%. Manchester City Council is thinking about how its airport fits with its climate target, settling on playing its full part in establishing Manchester Airport and the city as a national and international leader in sustainable aviation, on ensuring residents make choices about travel and flying with full information on carbon impacts and carrying out further work with the UK government on aligning development at the airport with Paris targets. Local authorities owning airports or with airports in their area should encourage these airports to make their Scope 1 and 2 emissions net zero, to connect to public transport services and participate in the Sustainable Aviation grouping.

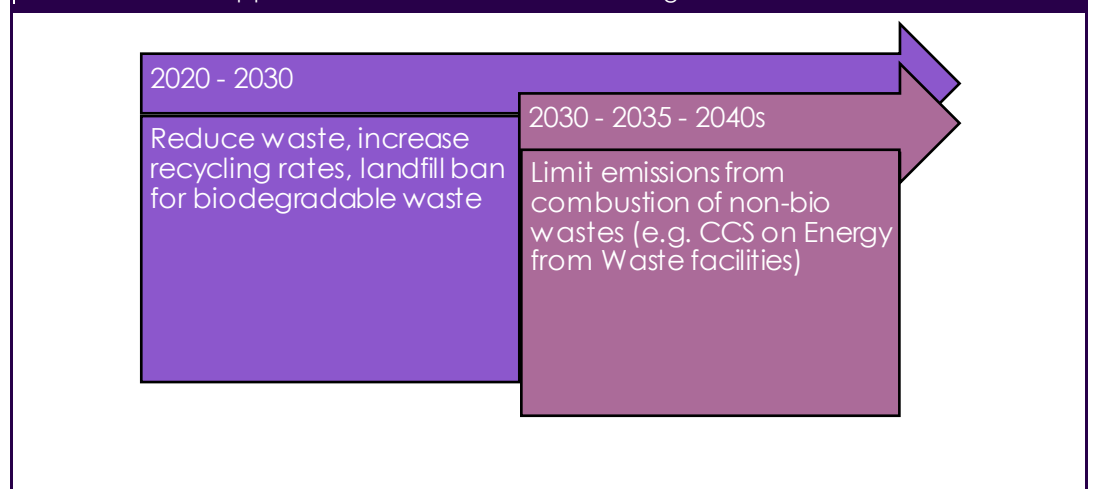
4. Waste

Emissions from waste were 27 MtCO₂e in 2019, 5% of total UK greenhouse gases. 70% of emissions from the waste sector in 2018 were methane from the decomposition of biodegradable waste in landfill. Waste emissions have fallen 46% between 2008 and 2018 due to reductions in landfilling of waste.

More local authority waste is now incinerated for energy than recycled or composted in England. In 2018 there were 6.8 MtCO₂e/year of emissions arising from the use of waste for power and heat (mostly energy from waste incineration plants), a doubling in emissions since 2013. Plants under construction and those granted planning permission could add a further 10 MtCO₂e/year.

Box 3.19

What needs to happen to deliver the sixth carbon budget and be on track for Net Zero?



A) What needs to happen to deliver the sixth carbon budget and be on track for Net Zero?

The CCC's recommended Sixth Carbon Budget pathway sees a reduction in waste due to improvements in recycling, a phase-out of biogenic waste going to landfill and carbon capture and storage installed on both new and existing energy-from-waste facilities. In particular:

- **Reductions in waste and ramping up recycling rates.** Recycling rates (recycling, anaerobic digestion (AD) and composting) need to rise to 70% across UK by 2030 (and by 2025 in Scotland and Wales). Total waste arisings should be reduced by up to 33% by 2037 from baseline projections, through improved product design, light-weighting & standards, asset sharing & repair, deposit return schemes and extended producer responsibilities. Household edible food waste should be reduced by 50% by 2030 (reaching 46kg per person) and 60% by 2050, compared to 2007 levels, and similar % reduction targets should be achieved by the commercial food sector.

- **Phase out wastes sent to landfill and improve landfill management.** Sending biodegradable waste to landfill should be banned by 2025, with a significant ramp-up in recycling, AD and composting. A complete ban on sending all waste to landfill should be considered by 2040, provided sufficient treatment facilities are available (and not just additional incineration). Further action is required to reduce landfill methane emissions, through methane capture and oxidation.
- **Improvements to reduce emissions from waste water treatment** need to start in the early 2020s, in order to reduce emissions by at least 20% by 2030. This is a role for the water utilities and Ofwat.
- **GHG emissions from compost should be reduced by over 20% by 2030**, and this can be achieved by approximately a third of composting facilities installing forced aeration technology. Local authorities should send more garden waste to compost (with this service provided free to households).
- **Carbon Capture and Storage is needed to ensure that Energy from Waste** facilities are close to zero carbon by 2050, starting with those in industrial clusters, and over time reaching smaller facilities further from CO₂ storage locations. Incineration and other forms of power/heat generation from waste will increasingly become the final step on the waste hierarchy, only used after materials have been recycled several times. In the CCC's scenarios, by 2050 all EFW plants have fitted with CCS starting from the 2030s.
- **Co-benefits:** food cost savings for residents and businesses, health benefits of diet and meal planning, reduced food poverty and cost savings for collection authorities. Emissions reduction, efficiency and increased competitiveness for UK industries using recycled rather than raw materials.

Box 3.20

Circular economy: recycling more glass makes the glass industry more resource efficient

Done right, local waste collection infrastructure can provide valuable alternatives to raw materials in manufacturing. Increasing the recycled glass content in glass manufacturing from the current level of 38.5% to 100% could reduce glass furnace energy demands by 15%³².

B) What has Government committed to and what remains to be decided?

The Environment Bill 2020 sets out a range of measures on waste including:

- Requiring producers to pay the full net cost of managing specified products and materials at end of life to incentivise more sustainable use of resources (known as extended producer responsibility)
- Establishing deposit return schemes for drinks containers
- Requiring local authorities in England to collect the same range of materials for recycling from households; and collect waste streams separately where possible
- Requiring local authorities to provide separate weekly food waste collection from households
- Introduce charges for single use plastics, such as plastic carrier bags.

The bill aims to achieve Defra's Waste and Resources Strategy target of a 65% municipal waste recycling rate by 2035 in England but falls short of the CCC target of achieving a 70% recycling rate by 2030.

The Waste and Resources Strategy also has a target to ban food waste from landfill by 2030, with an aspiration to ban other biodegradable waste, and an intention to work towards zero avoidable waste being landfilled by 2050. However, these ambitions are not in the Environment Bill, and fall short of CCC targets.

Secondary legislation will be needed before waste and resources measures in the Bill become mandatory. This creates uncertainty for local authorities wanting to act faster, or set up new collection and disposal contracts in the meantime. Therefore, the government needs to accelerate investment plans for local authorities to be able to put in place universal municipal waste recycling collections, rolled out across England in 2022–24 with the required recycling, composting and AD facilities. It needs to examine the impact of waste targets on the utilisation of energy from waste plants and issue guidance to local authorities.

Defra and UKRI funding is available to support the waste and recycling sectors and promote resource efficiency. WRAP runs the Resource Action Fund of £18 million to support resource efficiency projects in England providing grants with expert support on food, plastics, textiles, recycling infrastructure and litter. A Textiles Recycling and Re-use fund of £1.5m and various grants around food waste and behaviours are also available. WRAP provides free support to local authorities including benchmarking and guidance.

Box 3.21

Waste and Recycling in Scotland, Wales and Northern Ireland

The Welsh Government's 2019 Waste Strategy has an ambition of zero waste by 2050. It will halve food waste by 2025 against a baseline of 2007. Wales has also consulted on separate collection of recyclable materials from businesses and public bodies, and banning these materials going to incineration or landfill from late 2021. Under its Landfill Allowance Scheme, Wales has reduced the amount of biodegradable municipal waste sent to landfill in 2018/19 by 88% (against a 2005/06 baseline), but this scheme ended in March 2020, and Wales is yet to implement a complete ban by 2025. Their 2020 target is to landfill less than 10% of all wastes, and less than 5% by 2025. This shows that it is possible to minimise bio-degradable waste going to landfill, and significantly increase recycling, in 5–10 years.

Scotland's Zero Waste Plan supported a move to a circular economy with a ban on biodegradable municipal waste to landfill from 2021, but this has been delayed until 2025 due to a lack of local authority processing facilities. Its Climate Change Plan for 2025 targets 70% recycling for all wastes (with households achieving a 60% recycling rate), a 15% reduction in total waste (against 2011 levels), a 33% reduction in food waste (per capita against 2013 levels), and no more than 5% of all waste being sent to landfill.

Northern Ireland has not introduced new waste management policies in the past year, nor moved to ban all biodegradable wastes from landfill by 2025 (only separately collected food waste is currently banned). Like Wales, it reduced the amount of biodegradable municipal waste sent to landfill in 2018/19, by 73% under its Landfill Allowance Scheme, which has now ended.

C) What are the key actions for local authorities on waste emissions?

The main challenge for local authorities, waste collection and waste disposal authorities, is to implement plans to deliver 70% recycling rates within the next ten years, through consistent recycling collections and weekly separate food waste collections, and to also enable the banning of bio-degradable wastes from landfill from 2025. This will require a sharp increase on current average recycling rates of 45% in 2018. Many authorities feel we have reached 'peak recycling' rates in the last five years because of policy and target stagnation.

Strategy & Policy

- **Waste disposal** should follow the waste hierarchy; reduction, reuse, recycling, composting & anaerobic digestion, before incineration or finally landfill. AD is the best environmental outcome for food waste that cannot be prevented or redistributed. More garden waste should be sent to composting and composting sites should install forced aeration where technically possible (up to about a third of sites). Banning the landfill of bio-degradable wastes would be the biggest single action to cut waste sector emissions.
- **Planning ahead to cut emissions. Waste contracts have a long lead-in time, and 10-year contracts with renewal options are in place in many local authorities.** This means thinking ahead to ensure emissions are locked out rather than locked in at procurement. The introduction of deposit return schemes and extended producer responsibility (EPR) in 2023 will have implications for council waste collections, and could reduce some materials going into household recycling and see new materials and funds appearing due to EPR. Market churn is expected and could be unpredictable, making planning challenging. The government has stated that it will cover local authority costs for changes made by the Environment Bill's waste and resources policy and that it will provide lead-in time. The Local Government Association, together with ADEPT, LARAC*, London Councils and others, have outlined the implications of the bill for local authorities and raised concerns about costs and practicalities of separate waste stream collections.
- **Energy from Waste (EfW).** Local authorities should carefully consider the fossil emissions from EfW plants†. In a Net Zero world EfW facilities are likely to be significantly higher carbon than other forms of energy production. Many facilities will need to reduce their emissions to continue to operate. Local councils will need to consider how current and new EfW plants will fit carbon capture and storage (CCS) equipment in the future, plus the impact of waste reductions and improved recycling (which will remove high calorific value materials from the feedstock). The government needs to address this issue within the coming two years and provide guidance to local authorities.

* The Local Authority Recycling Advisory Committee

† Heat produced by unabated EfW plants (i.e. without CCS) is not particularly low-carbon – burning Municipal Solid Waste releases ~335gCO₂/kWh of input (of which ~163gCO₂/kWh is fossil CO₂), compared to burning natural gas at ~184gCO₂/kWh of input (all fossil CO₂), so EfW can be worse in terms of fossil emissions once lower EfW generation efficiencies are accounted for compared to a gas boiler (although there are also upstream gas emissions as well). This will already be the case for EfW electricity generation compared to gas-fired generation. Source: CCC analysis

Box 3.22

What does CCS ready mean?

"CCS-ready" means that the plant is built with land and buildings space set aside and with pipes and utilities available³³, so that a CO₂ capture plant can be installed and connected at a later date. In the CCC's scenarios, CCS infrastructure becomes widely available from the 2030s with pipelines in industrial clusters and potential transportation of CO₂ from sites remote from CCS infrastructure.

- **Procure electric or hydrogen fuelled waste and recycling vehicles** when vehicles need renewing. There is a limited availability of low-carbon vehicles available and the EV range for refuse collection trucks is currently limiting their use to denser urban areas. Several local authorities are investing in hydrogen powered vehicles, including connecting hydrogen production to on-site renewable energy generation, as in Cheshire East which has used Local Growth Fund money for the investment.
- **Collection authorities should prepare to provide or continue to provide separate collections** for recyclable/compostable materials including separate food and green waste collections from 2022-2024. Consider setting up AD and composting facilities.

Box 3.23

Stirling Council four-weekly bin collection

In a complete service reorganisation, Stirling Council introduced a four-weekly black bin collection and weekly food waste, garden waste and recycling. This entailed careful engagement with Elected Members, who were understandably cautious about the local reaction to these changes. In 2018 the recycling rate was 54%, with plans to increase it to 70% by 2025.

- **Commercial waste** is outside of direct local authority influence, however some local authorities provide commercial waste services. They should identify opportunities for greater engagement and efficiency in commercial waste and recycling collections and to reduce emissions from vehicles servicing multiple contracts for different businesses.

Enabling & Communicating

- **Include waste minimisation messages in climate emergency, public health and resilient recovery communications.** This should include information on packaging and product standards and choosing items that can be repaired in the future. Provide support for people to plan healthy meals and reduce food waste. Support organisations that redirect surplus food, including commissioning caterers that use surplus food stocks and vegetables in public sector catering. Support local veg box schemes that provide food with reduced packaging. Support community schemes for furniture re-use, clothes swaps, Repair Cafes, Re-Start Projects and Libraries of Things.

Box 3.24

Local authorities supporting community schemes for waste diversion

Share Oxford, supported by Oxfordshire County Council and Oxford City Council runs regular Repair Cafes and a Library of Things where people can borrow items which are only sometimes or occasionally needed, such as DIY tools, outdoors and sports equipment, domestic and cooking equipment. Food redistribution charity FareShare supported 924,000 people a week in 2018-19 redirecting 20,838 tonnes of food. This, however, only represents 7% of food surpluses in the UK.

- **Introduce a zero waste procurement policy that bans single-use plastics, excess packaging, specifies recycled content, favours appliances and goods that can be repairable and recyclable.** Check existing contracts and engage suppliers and contractors to innovate and reduce waste and emissions.
- **Local authorities should ensure their LEPs support the development of a circular economy**, including supporting resource efficiency and materials processing and reuse.

Box 3.25

Local Enterprise Partnerships supporting recycling and circular models

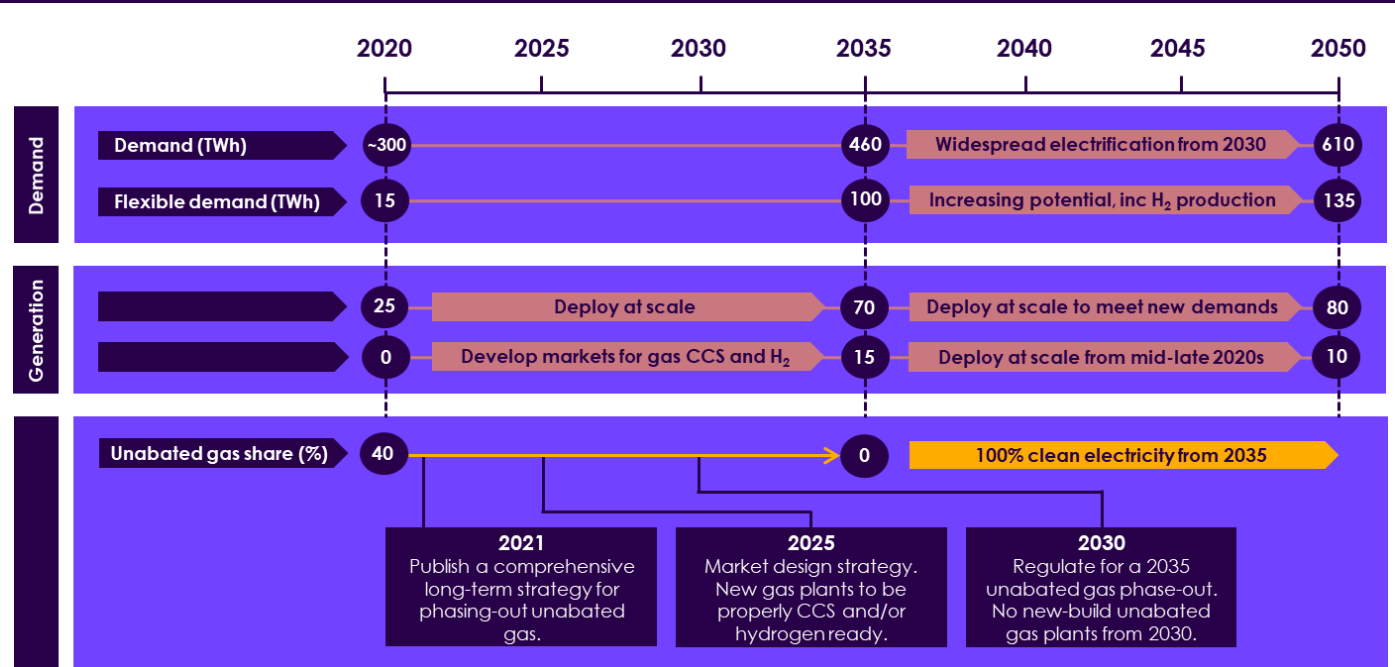
York & North Yorkshire LEP's Circular Yorkshire campaign targets food waste and is assisting businesses to adopt circular waste management practices³⁴. South East Midlands LEP has received Getting Building Funding to support Innovate Recycling in a new carpet recycling technology in East Northamptonshire.

5. Electricity Generation

Emissions from electricity have fallen by 50% since 2013 and 64% since 1990. Recent reductions have been achieved through the decrease in coal use for electricity generation as electricity demand has fallen and the supply from renewables has increased. Electricity generation now accounts for 12% of the UK's emissions.

Box 3.26

What needs to happen to deliver the sixth carbon budget and be on track for Net Zero?



Source: CCC

A) How can this be achieved?

The CCC's recommended Sixth Carbon Budget pathway sees a continued scale up in renewables and low-carbon generation. Electricity consumption is expected to double between 2020 and 2050 due to the increased electrification of heating and transport, and the use of electricity to produce low-carbon hydrogen. The carbon intensity of the grid is expected to decline to around 50 gCO₂/kWh by 2030 and around 1-2 gCO₂/kWh by 2050, from over 200 gCO₂/kWh today.

- **Deploying low-carbon generation**, including variable renewables and dispatchable low-carbon generation.
 - Under the CCC's Balanced Pathway, demand for electricity will increase by 50% by 2035 and 100% by 2050, reflecting increasing electrification of the economy (e.g. use of electric vehicles in transport).

- With offshore wind as the backbone of the energy system, renewables could contribute up to 90% of generation by 2050.* The aim should be for 75-140 GW of offshore wind capacity by 2050, up from 40 GW in 2030.
 - No single technology can deliver all the generation that is needed to meet new electricity demands, meaning that a portfolio of zero-carbon generation technologies will be needed, also including onshore wind, solar and nuclear. Bioenergy with carbon capture and storage (BECCS) could provide capacity and generation, while also delivering greenhouse gas removals (see section 2a).
 - To manage a system based largely on variable generation, there will need to be greater flexibility. That includes from demand (including demand-side response, and use of surplus generation for hydrogen production), from storage and interconnection, and from use of dispatchable low-carbon generation (e.g. hydrogen, gas with CCS).
- **Moving completely away from unabated fossil fuel generation.** After the end of coal generation by 2024, this will require phasing out the use of unabated gas for electricity generation. The Government should commit to achieving this by 2035, subject to ensuring security of supply.

B) What has Government committed to and what remains to be decided?

Government policy is in place to drive up renewable energy generation capacity through long-term contracts for renewables via auctions every two years. Costs of renewable generation is coming down. In terms of translating successful grid decarbonisation to the Building and Transport sectors, the Energy White Paper and the Building and Heat Strategy and Transport Decarbonisation Plan are awaited.

Without some certainty in the energy market it is very difficult for English local authorities, investors and energy markets to develop the project pipelines needed now for the complex interaction of power, building heat demand, hydrogen, biogas and the electrification of transport. These are the areas which need delivering on the ground to get to Net Zero. (See Buildings Section for local area energy planning).

Table 3.1			
National	Regional	Local Authorities	Ultra-local (Place)
	Local Area Energy Plans (LAEPs) done according to Ofgem-approved method		
Policy setting eg offshore wind auctions	Local Industrial Strategies (LEPs/CAs)	Consenting onshore wind re-powering	District Heating schemes (low-carbon generation)
Setting policy subsidies: CfD, RHI (Clean Heat Grant)	Regional Energy Strategies	Consenting onshore wind new (subject to Ministerial Statement in England and local plans)	Community renewable energy: generation, micro-grids, energy efficiency
Ofgem regulation	DNO investment plans for Net Zero	Consenting gas peaking plant and storage	Open data: markets for demand side response

* Including generation for hydrogen production.

Energy supply companies	District gas network operator investment plans	Leveraging land/assets for renewable generation	
Heat regulation	Local energy markets/energy transition regions	Planning for new Energy from Waste facilities with future CCS	Planning policy specifies heat type in new developments
Energy generators		Purchasing 100% additionality renewable electricity	
Flexibility and aggregation markets		Investment in renewable generation for on-site/PPA use	

Box 3.27

Local Energy Hubs (England) & Welsh Government Energy Services

BEIS established five **Local Energy Hubs** in England to support low-carbon energy investment and provide additional capacity to project delivery. They are supporting 273 projects at a total capital value of £1.29 billion, with a further £1.8 billion of identified potential. However, the five hubs are not sufficient to provide a sufficient level of support all that local authorities seek, for example, the Greater South East Hub serves 40% of England's population including London.

The **Welsh Government Energy Service** supports community and public sector organisations to develop energy efficiency and renewable energy projects, regional energy strategies and support for electric vehicle charging infrastructure.

C) What should local authorities do to deliver a Net Zero power sector during the 2020s?

Strategy & Policy

Local energy plans need a robust methodology to model energy demand, and a strong governance and social process to enable implementation and be designed with involvement of local people and businesses as the final energy users.

- **Local authorities should work with their DNOs, neighbouring authorities and across their wider climate and energy partnerships to prepare local energy plans for their area.** Some local authorities, combined authorities or LEPs have already carried out such studies. These will assess an area's energy demands for heat and electric vehicles, identify surplus heat sources and identify the best places for district heating, heat pumps, levels of energy efficiency measures needed and EV charging. Flexibility, smart demand management and energy storage should also be included. Such plans need a robust methodology to model future energy demand, and a strong governance and social process to enable implementation and be designed with involvement of local people and businesses as the final energy users. Technical studies alone are unlikely to result in local acceptance and delivery. The plans need to be material to the planning process, and should enable planning policy to require specific energy systems from developers.
- In the move to a system based on variable generation, local planning authorities will see applications for battery storage and are already receiving applications for flexible gas plants (gas peaking). **Any gas peaking plants consented will have to be decarbonised from 2035.**

Box 3.28

Local Energy Planning to deliver investment in Bristol

Bristol City LEAP used local area energy planning to identify investable schemes to decarbonise heat in areas of the city. The city is now procuring Joint Venture partners to deliver an investment of £875 million in heat networks, a smart energy system, domestic energy efficiency, renewable energy and heat pumps.

- **Switch to renewable and low-carbon electricity, where possible ensuring that purchasing agreements lead to additional renewables being built, rather than just buying the output of existing renewables.** There is a very limited market for this in the UK where purchase of renewable electricity leads to new generation. Where possible Power Purchase Agreements (PPA) can be put in place with solar or wind farm operators to provide low cost electricity, whilst ensuring additional renewables are added to the grid. On-site renewable generation for self-consumption can also play a role and many local authorities have installed renewables. At as a minimum the purchase of renewable electricity will reduce emissions in local authority Scope 2 reporting.

Box 3.29

Investment in solar farms for council self-consumption

Warrington Borough Council has invested in solar farms out of their own area and will use a Power Purchase Agreement to supply the council's electricity needs, while the City of London has just signed a 15 year PPA with a solar developer to purchase electricity from a new 49MW solar farm in Dorset³⁵. Local authorities can form consortia in order to reach sizable PPA deals.

- **Local Plans should support renewable energy and low-carbon heat.** Local Planning Authorities should review Local Plans. These should include an energy policy that takes a positive and proactive approach to renewable energy generation and storage. Training for planning for renewable energy should be refreshed, as technologies have advanced and improved. Plans should also reference low or zero carbon heat for new and existing buildings.
- In Scotland and Wales these are different – Scotland will introduce a duty for Local Heat and Energy Efficiency Strategies (LHEES) and will focus buildings and heat. In Wales four regional energy strategies have been developed for North Wales, Mid Wales, the Swansea Bay City Region and the Cardiff Capital Region and further work with local councils is planned.

Box 3.30

Securing delivery of low-carbon District Heat Networks

The New London Plan provides extensive information on future energy demand mapping, energy masterplanning, identifying energy infrastructure requirements and locations, identifying heat network priority areas and provides a heat map to assist this. It provides a hierarchy for the heat source and if gas fired CHP is used a decarbonisation plan must be provided.

For example, the Plymouth & South Devon Joint Local Plan 2014 – 2034, states: “Developments will be required to connect to existing district energy networks in the locality or, where there is a future network planned, to be designed to be capable of connection to that network. Where appropriate, proportionate contributions will be sought to enable a network to be established or completed. “

- **Local Planning Authorities** should consent to repowering of existing onshore wind farms, and develop an onshore wind strategy. Repowering entails the replacement of existing turbines with fewer, larger turbines which provide a significant increase in generation. This is also usually at a lower impact to communities, who are accustomed to the presence of turbines.

- **Develop an onshore wind strategy.** In England the planning system is still blocking new onshore wind developments, despite government including new onshore wind in government subsidy schemes. Local authorities should include new onshore wind in discussions with communities about climate change and land-use planning. In England, where sites for onshore wind have been identified in Local Plans and Neighbourhood Plans consent can be given, despite the 2015 Ministerial Statement, subject to proposals meeting wider requirements. However, since 2015 only six schemes totalling 7.5MW have been consented in England, only one of which is in operation. During the same period, 80MW capacity of onshore wind was given planning consent in Scotland³⁶.

Box 3.31

Onshore wind farm repowering delivers increased generation

In Calderdale, Ovenden Moor Windfarm was built in 1993 with 23 turbines, in 2017 these were replaced with 14 larger turbines more than doubling output from 9.2 MW to 22.5 MW for the lifetime of 25 years.

Enabling and Communicating

- **Support local people and community energy organisations to install renewable generation for on-site local use, and link this to energy efficiency behaviours.** Solar Together is increasingly popular as a way to form buying clubs for local communities to install affordable solar PV. While compared to offshore wind, small scale solar is expensive, it brings the benefit of supporting jobs locally and opening the conversation for heat pumps and other measures in people's homes.
- Work with employers and training providers to assess and improve skills availability for the renewable and low-carbon energy sector.

Box 3.32

700,000 jobs in England's low-carbon and renewable energy economy by 2030

The LGA's *Local green jobs – accelerating a sustainable economic recovery* report found that nearly 700,000 direct jobs could be created in England's low-carbon and renewable energy economy by 2030, rising to more than 1.18 million by 2050. The report outlines the growth potential in different regions and the existing skills gaps³⁷.

- Increase skills and knowledge of the energy system, UK energy markets and upcoming technological and societal changes. This will build capacity to develop funding bids, manage projects and work effectively with regional Energy Hubs and partners such as DNOs, developers and finance organisations.

Box 3.33

Industry, Carbon Capture and Storage (CCS) and Hydrogen

The Government's Industrial Strategy is to develop at least one low-carbon industrial cluster by 2030 and Net Zero Industrial Cluster by 2040.

- **Manufacturing and construction** emissions amount to 13% of UK emissions. Actions that need to take place to deliver the Net Zero pathway in manufacturing relate to resource efficiency, the deployment of hydrogen, electrification, BECCs (Bio-energy with CCS) and preparing business models so industry is ready to access CCS when it is available.
- **Fossil fuel production, most of which is offshore, and refineries** make up 8% of UK emissions, though there is potential for these facilities to reduce their emissions.

- **Carbon Capture and Storage.** CCS will be used to decarbonise industrial and power generation processes, including hydrogen production. A new CCS industry needs to be supported in the UK to develop the infrastructure and business models for capture, transport and storage of CO₂ in pipelines to offshore storage facilities. This will likely focus around clusters of industry including Aberdeen, Teesside, Merseyside, the Humber, South Wales and others. Where carbon capture units are fitted to industrial or power facilities that are not on a CCS piped network captured CO₂ will need to be transported to storage sites. Local Planning Authorities will need to support CCS development through the planning process. CCS is still at the technical development and demonstrator stage, with 51 large-scale projects operating³⁸ or under development around the world; 19 are fully operational, 17 in industry and two in the power sector.
- **Hydrogen.** Low-carbon hydrogen has the potential to help decarbonise the UK's economy and can be produced from gas with CCS, but this is not a zero-emission process. It can also be produced from electrolysis of water using renewable energy. Hydrogen has role particularly in industrial processes and for HGVs with a use in heating as a top-up to heat pumps or in the gas network where electrification of heat is too expensive. Hydrogen also has a role in decarbonising shipping emissions. Local Planning Authorities should be supportive of ports applying to install new shore-based power facilities and renewable hydrogen or ammonia production facilities.

6. Land use, Land-use change & Forestry and Agriculture

Land sector emissions were 12.8 MtCO₂e in 2018, equivalent to 2% of UK GHG emissions. Agricultural emissions were 53 MtCO₂e in 2019, 10% of UK greenhouse gas emissions (GHGs).

Agriculture emissions increased by 2% between 2008 – 2018 while the net sink from LULUCF increased 15% over the same period. Taken together, emissions are broadly flat. However, the inclusion of emissions from peatland in future inventories is expected to make the LULUCF sector a net source of emissions. Peat should be a carbon store, but peat in poor condition releases emissions. Rates of tree planting have fallen short of what is needed to achieve Net Zero by 2050.

By 2050 emissions from agriculture could fall to 35 MtCO₂e while the land-based measures in the CCC's Balanced Pathway could deliver annual savings (against a baseline) of 12 MtCO₂e in 2035, and 30 MtCO₂e by 2050, moving the sector to a net sink of 19 MtCO₂e by 2050.

Box 3.34

What needs to happen to deliver The Sixth Carbon Budget and be on track for Net Zero?

2020 - 2040s

Afforestation, peatland restoration

Reduction in consumption of meat and dairy products

A) How can The Sixth Carbon Budget be achieved?

How big is a hectare?

100m/100m = 10,000m² or just bigger than a football pitch. There are 2.47 acres / hectare.

The CCC's scenarios for 2050 see a reduction in agricultural emissions associated with a shift in diets, and increased tree-planting and peatland restoration restoring the UK's land use (outside of agriculture) to be a carbon sink.

- Afforestation rates need to rise steeply from 13,000 hectares in 2019/20 to 30,000 ha/year by 2030 and need to continue to rise to 50,000 ha/year from 2035. Woodland cover in the UK will need to rise from today's 13% towards 19% in 2050. This will be a mix of conifer and broadleaf with about 1:3 conifer to broadleaf in England, equal proportions in Wales and 3:1 conifer to broadleaf in Scotland. The integration of farming and woodland will result in around 40% of grassland being planted to trees, through forestry, woodlands, shelter and contour belts.

- The CCC's scenarios envisage a 20% reduction in the consumption of all meat and dairy products by 2030, rising to 35% or more by 2050. Between 2000 and 2018 meat consumption fell by 6% and dairy products by 16%, so this is also a more dramatic change in dietary habits and production than in the past decade. There will be more plant-based production and a reduction in beef, lamb and dairy.
- Related to agricultural land-use and production changes, there will be an increase in agroforestry, the production of energy crops for biomass and improved soil and manure management. By 2050 up to around 5% of agricultural land will be producing sustainable biomass energy crops, and the reduction in livestock will enable this change.
- Peatland restoration and sustainable management is needed. Upland peat areas (moorland) need to be restored by 2045. Lowland peatland that is not in agricultural production (i.e. 10% of lowland peat) needs to be returned to conservation management by 2030. Sites where peat has been extracted need to be re-wetted by 2035 and can then be used to grow sphagnum moss for horticultural use. Grassland peat also needs to be restored, with areas still in use for crops being more sustainably managed through cover crops and seasonal wetting. Peat extraction, peat burning and peat use in horticulture should cease as soon as possible, or by 2021.
- Urban green infrastructure should be increased for climate adaptation, cooling and flood alleviation, providing carbon reduction and clean air. The principle is to increase urban green space.
- Co-benefits include flood prevention, water quality improvements, cleaner air, jobs in planting, management and maintenance, biomass and timber supply chains, biodiversity and for leisure, walking and cycling, education and volunteering opportunities.

B) What has Government committed to and what remains to be decided?

The Environment Bill has started its passage through Parliament, but this currently only provides a voluntary approach for agriculture and no policy mechanisms beyond the Common Agricultural Policy replacement, through the Environmental Land Management Scheme (ELMS) which should provide 'public money for public good'. The Environment Bill will require all areas to implement Local Nature Recovery Network Strategies to map, protect and restore nature.

The Agriculture Bill has now received Royal assent providing farmers seven years to move across to ELMS. However, as the UK leaves Europe and the Common Agricultural Policy ends, Direct Payments to landowners will also end and will be replaced by a Sustainable Farming Initiative payment before ELMS is brought in in 2024.

No planned policies have been announced for afforestation and peat restoration.

What is needed from government to deliver the sixth carbon budget? The Tree and Peatland Strategies have both been delayed (the England Tree Strategy was consulted on and it was due in 2020 but is expected to support the manifesto commitment of planting 30,000 hectares a year). A Nature Strategy was also announced in the November 2020 Ten Point Plan from government.

Regulation should:

- Ban damaging practices on peatland, such as burning and draining.
- Develop mechanisms for private and public finance to support land-based solutions, including blue and green infrastructure that supports biodiversity net gain and climate adaptation.
- The Tree Strategy should include funding for local authority tree planting and maintenance.
- Address non-financial barriers and develop a strong monitoring, reporting and verification framework. This could include a stronger biodiversity duty on local authorities.

In the short term, funding has been announced. Part of the £640 million Nature for Climate Fund announced in the 2020 budget will be used to plant more trees across the UK, rising to 30,000 hectares a year by 2025, and the restoration of 35,000 hectares of peatland in England by 2035.

Natural England is supporting five Nature Recovery Network Strategies pilots with Cornwall Council, Buckinghamshire Council, Greater Manchester Combined Authority, the county councils in Northumberland and Cumbria. These strategies will bring together landowners, farmers, communities and businesses to prioritise nature and biodiversity recovery, and outdoor green space for people.

Box 3.35

Recording woodland carbon emissions

Local authorities should record their woodland carbon emissions through the Woodland Carbon Code which is the only verified local scheme that meets the requirements of the government's environmental reporting guidelines.

C) What are the key actions for local authorities on land use, land use change, forestry and agriculture emissions?

"If it's peat, keep it wet, don't drain it, burn it, extract it or plant trees on it."

-Jo Kennedy, Living Landscapes Development Manager/Co-ordinator for The Great Manchester Wetlands Nature Improvement Area Partnership

Strategies & Policies

- **Biodiversity Net Gain** should be a priority alongside emission reduction in planning policy, supported by a robust evidence base. While Green Infrastructure Strategies should be linked with biodiversity and natural flood management.
- **Support woodland creation and management** compliant with the UK Forestry Standard, tree planting, support community forestry partnerships, review Landscape Character Assessments for a future climate including tree and woodland creation, carry out mapping for archaeology and conservation for EIA in advance to promote woodland creation schemes, have a Tree and Woodland Strategy in the planning framework, policies for biodiversity net gain in planning, green space access standards, adopt the Woodland Trust's target for 30% tree cover for new developments³⁹; Integrate flood management and carbon sequestration.

Box 3.36**Local authorities partnering with The Northern Forest**

The Northern Forest; brings together community forests to increase the North's 7.6% woodland cover by adding 50 million trees in and around Liverpool, Chester, Manchester, Leeds, Sheffield and Hull. Projects to reduce flood risk, increase access to quality green space and improve tree cover in urban areas have been delivered in partnership with local authorities⁴⁰.

- **Increase urban green space**, using tools such as the Woodland Trust Greenspace Access Standard⁴¹ or Fields in Trust Index⁴² to identify areas that lack access to quality green space, baseline local trees and quantify their benefits using iTreeEco to measure carbon and value, install street trees and hedges in areas of high air pollution, support tree initiatives such as 'a tree for every resident', invest in trees to keep urban areas cool and provide shade to protect from heat, and flooding.
- **Introduce marine management strategies** that put in protection and recovery for marine life including carbon sequestering plants such as seagrass.
- **Support Green Finance Initiatives** to deliver eco-systems services, carbon and habitat banking and link up across areas to develop investment opportunities.

Box 3.37**Funding Biodiversity Net Gain and carbon-saving Natural Capital projects: Greater Manchester Environment Fund**

Greater Manchester Combined Authority⁴³ is working with the Natural Capital Challenge Group to find new ways to fund environmental projects including sustainable urban drainage (SUDs), tree planting, peatland restoration and habitat creation. The Lancashire Wildlife Trust will manage the Environment Fund to support the development, scale and verification for carbon and habitat banking. The fund will aggregate offset and enforcement funds, landfill tax funding and aims for a £5 million annual turnover.

Enabling & Communicating

- **Promote the benefits of woodlands, wildlife and nature.** Support and promote voluntary planting schemes and engage volunteer tree wardens, support Bog Day, to raise awareness about peat.
- **Retain County Farms** with an Acre for an Acre policy to protect sell-offs and review leases to enable tenants to adopt agro-forestry, low-carbon farming practices, tree planting and hedges. Support tenants in learning about sustainable low-carbon farming, feed additives, cover crops and eco-systems services.
- **Provide business support to farmers and landowners** to integrate climate change and farming through low-carbon farming methods, woodland cover, tree nurseries, sawmills and wood processors; support agricultural research and development, promote use of wood in construction, provide advice on the transition to ELMS, actively work with the local National Farmers' Union and Young Farmers to assist skills development.

Box 3.38**Supporting sustainable farming methods**

The Farm Advisor's Team⁴⁴ at the Peak District National Park offer advice on trees and woodland, meadows, Countryside Stewardship and moorland management at drops ins or longer term.

- **Support farm building and infrastructure modernisation** and low-carbon refurbishment through planning policy encouraging broadband and on-farm mobile infrastructure. Help move farmhouses off oil and LPG. Promote and support on-farm renewable energy generation including AD.
- **Support peatland restoration** and engage with farmers on cover cropping, re-wetting and ELMs. The Peatland Code⁴⁵ provides metrics for emissions from peatland restoration.
- **Food:** Promote government healthy eating guidelines, local procurement, offer a fully plant-based option every day and ensure public sector catering staff are trained in vegan and vegetarian cooking.

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1. Recommendations to Government

In order to enable local authorities to effectively deliver climate action in the UK, the Government will need to develop clear policy, including guidance on the role of local authorities in delivering Net Zero, and empower local authorities with appropriate levels of funding and support.

Policy

1. **Develop a Net Zero Delivery Framework which aligns and clarifies national, sub-national, regional and local delivery roles and areas for collaboration as part of the Government's forthcoming Net Zero Strategy.** It should provide clear outcomes and direction to reduce uncertainty, provide additional powers where needed, identify public and private investment and enable flexible delivery at the faster pace of ambitious areas. This should also allow local authorities to set higher standards through the planning system.
2. **Consider introducing a Duty on local authorities to act in accordance with Net Zero** by delivering climate action plans within a common reporting system*. *A corresponding recommendation to local authorities is to develop standardised reporting and benchmarking, the Government should encourage and support this, and should receive data and use it for policy making. Any new duty should be fully funded.*
3. **Make policies consistent with delivering Net Zero** by reviewing evidence provided in this and other reports, and in requests from local authorities. Government should remove blocks and align powers and policies to be consistent with delivering Net Zero. This is important for Planning policies, financial appraisal and managing public transport as a whole system.
4. **Support area wide planning for regional delivery of energy, transport systems and building retrofit.** This planning should support governance and delivery stakeholders and a strong social process for public engagement. It should include robust Local Area Energy Planning that identifies heat zones for buildings, building retrofit priorities. It should also include city-wide or area-wide transport planning for decarbonised transport. A Duty to Collaborate between agencies and local authorities could be considered.

Funding and Support

5. **Increase funding and support for local authorities to develop skills and capacity** to plan and implement climate action across both emissions reduction and climate adaptation in their local areas. This should include sufficient core funding and training to ensure that climate skills are embedded in all roles and that there is widespread access to specialist energy and retrofit skills.
6. **Provide coherent cross-departmental support on climate action**, building on the positive models of OLEV, HNDU and Sustainable Scotland Network support to local authorities. This should support local authority staff to deliver on buildings and transport decarbonisation in particular.

* However, learn from Scotland about why they are changing / simplifying their reporting system

Such offices should enable seamless communication between government officials and local authority officers.

7. **Introduce significant, non-competitive long-term investment** in retrofit, heat decarbonisation infrastructure and public transport and give flexibility to local authorities to blend budgets to deliver multiple co-benefits. Short-term competitive funding for narrowly specified projects with tight bidding times makes it very hard for smaller authorities with less capacity to apply and concentrates funding in certain areas. HMT should ensure that funding is made over longer time periods to enable better delivery. Government should ensure the National Infrastructure Bank finances Net Zero schemes and that the UK Shared Prosperity Fund provides long-term funding through development funds to kick start infrastructure investments at scale which can be refinanced at a later date.
8. **Align public spending with Net Zero:** Review the Government's Green Book policy guidance, and business case tools, such as DfT's WebTag, to incorporate a stronger focus on carbon reduction and co-benefits in business cases and financial appraisal. Funding allocated directly to LEPs and Combined Authorities for economic development should strongly align with the Net Zero agenda.
9. **Ensure that funds for pilot and innovation projects include budget for evaluation and for the longer-term consideration of replication and scaling up viable models.** The CCC's scenarios identify large gaps in national policy for buildings and transport decarbonisation. Without action to fill these gaps, projects are likely to remain stuck at the pilot stage. Note: not everything will work.

Communications and Engagement

10. **Deliver a national climate communications and public engagement** programme that can be tailored at a local level. Funding to local authorities and their partners to deliver such a programme will enable public engagement and support local delivery of shared national objectives.

2. Recommendations for local authorities

Local authorities are well placed to deliver climate action in the UK, and should be supported to do so. Local authorities looking to act on climate change should consider the following over-arching priorities:*

1. **Develop Net Zero or Climate Action Plans with delivery projects** that prepare the area to make the transition to net zero choices from 2030, and align with climate adaptation, biodiversity net gain and other key local strategies. Include immediate actions that kick-start delivery now and that support low-carbon and green skills and jobs.
2. **Monitor and report on progress in reducing emissions** to local communities and government. Where possible share standardised data, benchmark and provide clear evidence to inform policy.
3. **Conduct policy and service reviews** to align policy, spending and functions with Net Zero. Identify contradictions, then put in place mitigation plans to align them at a future date and reduce emissions in the meantime. Develop project and financial appraisal systems that include emissions and climate impacts.
4. **Implement training and capacity building** to deliver Net Zero within the local authority and with key suppliers and contractors. Climate, energy, sustainability and carbon understanding needs to be embedded in the whole authority, across staff and systems. Increasingly specialist skills will be needed around energy systems. Climate change should be central to Elected Member and Senior Director training.
5. **Develop capacity to innovate and scale up.** Climate change action plans help identify future delivery projects for when funding becomes available. Local authorities should prioritise applying for funding and managing funds if successful. *This recommendation sits alongside the recommendation to government to implement longer term funding windows, longer periods for funding and flexibility to blend funding streams. It is also backed by a recommendation for more funding for local authorities to act on climate change.*
6. **Collaborate with neighbouring and cross-tier local authorities and other key delivery bodies on strategies and plans** which ensure systems-wide transformation is coherent and supportive of Net Zero. This should include energy, transport, housing, infrastructure and skills. This should enable local authorities to cluster to share skills, expertise, achieve economies of scale and deliver more effectively. Local area energy plans should be conducted at a scale larger than small district councils and with awareness of the wider energy assets in the region.
7. **Develop Green Finance know-how.** Private sector investment and Green Finance will be required to deliver the scale of the change needed. Local authority legal and finance teams, and project delivery teams will need to develop their knowledge of the finance industry.

* Actions relating to cutting emissions in key sectors are suggested in Chapter 3

8. **Communicate and engage with local communities, businesses and partners on Net Zero** so that a mandate for action is maintained. Support community action with citizens, schools, businesses and other groups. Assess the skills needed locally to deliver the transition, developing green and low-carbon jobs and supporting a resilient recovery.
9. **Local authority pension funds** should disclose their approach to assessing and managing climate risks and should consider investing in Net Zero aligned schemes within their legal duties.

Endnotes

- ¹ CCC (2019) *UK Housing: Fit for the Future*
- ² <https://hullisthis.news/councils-carbon-neutral-2030-strategy-outlined-at-public-meeting>
- ³ CCC (2018) *Hydrogen in a low-carbon economy*
<https://www.theccc.org.uk/publication/hydrogen-in-a-low-carbon-economy/>
- ⁴ <https://www.gov.uk/government/consultations/improving-the-energy-performance-of-privately-rented-homes>
- ⁵ <https://www.gov.uk/government/news/greener-homes-jobs-and-cheaper-bills-on-the-way-as-government-launches-biggest-upgrade-of-nations-buildings-in-a-generation>
- ⁶ <https://www.e3g.org/news/home-insulation-crash-in-england/>
- ⁷ <https://www.gov.scot/publications/energy-efficient-scotland-improving-energy-efficiency-owner-occupied-homes/>
- ⁸ <https://www.gov.scot/publications/energy-efficient-scotland-route-map/pages/6/>
- ⁹ <https://www.economy-ni.gov.uk/articles/energy-strategy-e-bulletin-3>
- ¹⁰ <https://energysavingtrust.org.uk/programme-delivery/northern-irish-programmes>
- ¹¹ <https://www.cse.org.uk/downloads/reports-and-publications/policy/planning/planning-white-paper-consultation-october-2020.pdf>
- ¹² <https://www.regen.co.uk/local-leadership-to-transform-our-energy-system/>
- ¹³ <https://www.adeptnet.org.uk/documents/summary-document-blueprint-accelerating-climate-action-and-green-recovery-local-level>
- ¹⁴ <https://www.carbontrust.com/resources/heat-pump-retrofit-in-london>
- ¹⁵ Stockport Climate Action
- ¹⁶ English Housing Survey 2018/19
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/898344/Energy_Report.pdf
- ¹⁷ <https://www.gov.uk/guidance/heat-networks-delivery-unit>
- ¹⁸ <https://www.local.gov.uk/energy-company-obligation-scheme-eco-flex>
- ¹⁹ <https://www.london.gov.uk/what-we-do/environment/energy/retrofit-accelerator-homes>
- ²⁰ <https://www.gov.uk/government/publications/whole-house-retrofit-competition-successful-bids/whole-house-retrofit-grant-award-recipients-project-summaries>
- ²¹ This provides 75% of the cost; guidance and further support from the Energy Savings Trust is available: <https://www.gov.uk/government/publications/grants-for-local-authorities-to-provide-residential-on-street-chargpoints/grants-to-provide-residential-on-street-chargpoints-for-plug-in-electric-vehicles-guidance-for-local-authorities>
- ²² <https://www.gov.uk/government/publications/ultra-low-emission-taxi-infrastructure-scheme-round-2>
- ²³ <https://www.gov.uk/government/organisations/office-for-low-emission-vehicles>
- ²⁴ <https://publications.parliament.uk/pa/cm201719/cmselect/cmtrans/1487/148705.htm>
- ²⁵ <https://www.gov.uk/government/publications/review-of-last-mile-logistics-2019/position-statement-on-last-mile-logistics>
- ²⁶ <https://www.gov.uk/government/publications/cycling-and-walking-plan-for-england>
- ²⁷ <https://www.adeptnet.org.uk/system/files/documents/Active%20Travel%20Policy%20Position%20July%202020.pdf>
- ²⁸ <https://www.gov.uk/government/news/big-broadband-boost-for-rural-english-shires-and-counties>
- ²⁹ <https://lincsbus.info/callconnect/>

- ³⁰ <https://bettertransport.org.uk/sites/default/files/research-files/The-Future-of-Rural-Bus-Services.pdf>
- ³¹ <https://fullfact.org/economy/do-15-people-take-70-flights/> (based on analysis of 2014 data)
- ³² WRAP and British Glass 2018; Carbon Trust, Energy use in the Glass Container Industry, 2005.
- ³³ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/43609/Carbon_capture_readiness_-_guidance.pdf
- ³⁴ <https://www.businessinspiredgrowth.com/news/circular-yorkshire-webinar-showcases-how-waste-can-be-valuable/>
- ³⁵ <https://news.cityoflondon.gov.uk/citys-pioneering-green-energy-deal-could-be-blueprint-for-local-authorities/>
- ³⁶ Power Shift, UK100, to be published in January 2021
- ³⁷ https://www.ecuity.com/wp-content/uploads/2020/06/Local-green-jobs-accelerating-a-sustainable-economic-recovery_final.pdf
- ³⁸ <https://www.globalccsinstitute.com/resources/global-status-report/>
- ³⁹ <https://www.cornwall.gov.uk/environment-and-planning/grow-nature/news/building-with-nature-a-new-development-benchmark/>
- ⁴⁰ <https://thenorthernforest.org.uk/in-action/>
- ⁴¹ <https://www.woodlandtrust.org.uk/media/1721/space-for-people-woodland-access.pdf>
- ⁴² <http://www.fieldsintrust.org/>
- ⁴³ <https://www.greatermanchester-ca.gov.uk/what-we-do/environment/natural-environment/ignition/>
- ⁴⁴ <https://www.peakdistrict.gov.uk/looking-after/living-and-working/farmers-land-managers>
- ⁴⁵ <https://www.iucn-uk-peatlandprogramme.org/>



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