CHAPTER ONE

Housing and the built environment

Decarbonising the nation's housing stock and wider built environment is central to achieving net zero. And it remains a significant challenge in both new builds and existing stock. Local authorities play a crucial role in both housing and the built environment, with planning authority status being perhaps the most powerful tool at the disposal of English local authorities at the district/unitary level.

Yet the policy environment in which local authorities are operating is uncertain, with a decided lack of consistency in recent decades. This section examines what local authorities can do to drive decarbonisation in both new housing and the existing built environment.

Key points

Driving decarbonisation

- Decarbonising housing and the built environment across the UK requires a mix of retrofitting in old buildings and stringent standards for carbon emissions on new buildings.
- Local government has a range of hard and soft powers to help drive decarbonisation in new buildings, chiefly through the local plan but also through the enforcement of building standards.
- However, central government must raise the baseline for local plans through the National Planning Policy Framework and provide capacity funding for the enforcement of updated building regulations.
- For decarbonising old buildings, local authorities can collaborate with each other at different tiers and spatial scales to aggregate demand and work together on solutions.

Achieving clean growth

- Local plans can be used to drive innovation through encouraging the use of modern methods of construction.
- Aggregating retrofit demand and creating a project pipeline has major labour market implications, with the potential to provide training for a new generation of skilled manual work.

1.1 The current national picture

All places in UK, regardless of region, face similar issues with decarbonising the built environment and the housing sector. The central challenge is one of upgrading old buildings whilst creating modernised, higher standards for old buildings, all in a challenging fiscal context.

1.1.1 The challenge of decarbonisation in new and old buildings

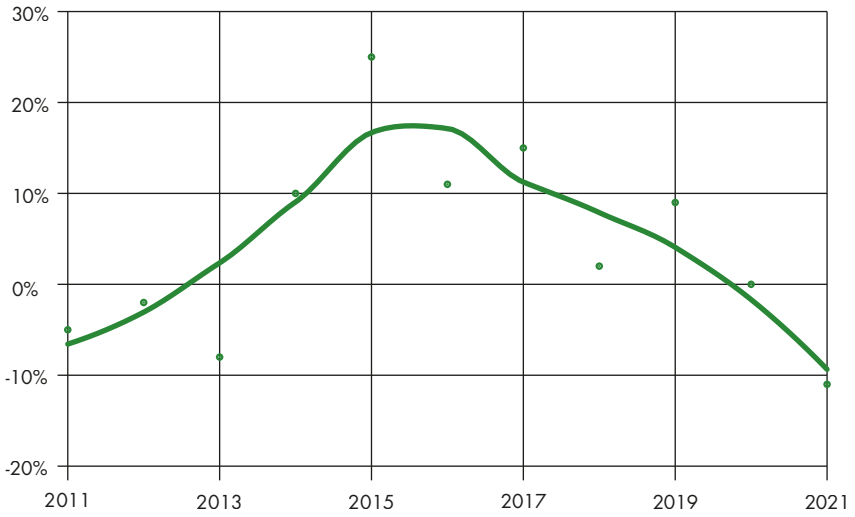
In their 2019 election manifestos, all the main political parties included commitments to increase housing supply in England. The Conservative manifesto[8] pledged to "continue to increase the number of homes being built" with continued progress towards a target of 300,000 homes per year by the mid-2020s. As it stands, new housing supply is currently lower than the government's ambition of 300,000 new homes per year, with 216,000 new homes being supplied in

8 Conservative Party (2019) – Conservative Party Manifesto 2019

2020/21[9] - down 11 percent on 2019-20.

For new builds, the current regulations for UK housing construction do not require new buildings to be designed and built to net-zero emissions. Therefore, new buildings, which will last beyond 2050, are being designed and built to far lower standards than net zero. Meanwhile in the case of existing building stock, 80 percent of the 2050 building stock already exists[10], and thus retrofit to net zero is urgently required. The challenge for policy going forward is therefore to increase the energy efficiency of old buildings whilst greatly improving the carbon footprint of new buildings.

Figure 1. Housing growth in England, Net new dwellings



Source: DLUHC

1.1.2 Retrofitting and energy efficiency

The government's ambitions on energy efficiency are set out in the Clean Growth Strategy and include an aspiration for homes in England and Wales to achieve EPC Band C by 2035 where cost effective, practical, and affordable. But progress

9 DLUHC (2021) – Housing supply: net additional dwellings, England: 2020 to 2021

10 UKGBC – Climate Change: UKGBC's vision for a sustainable built environment is one that mitigates and adapts to climate change

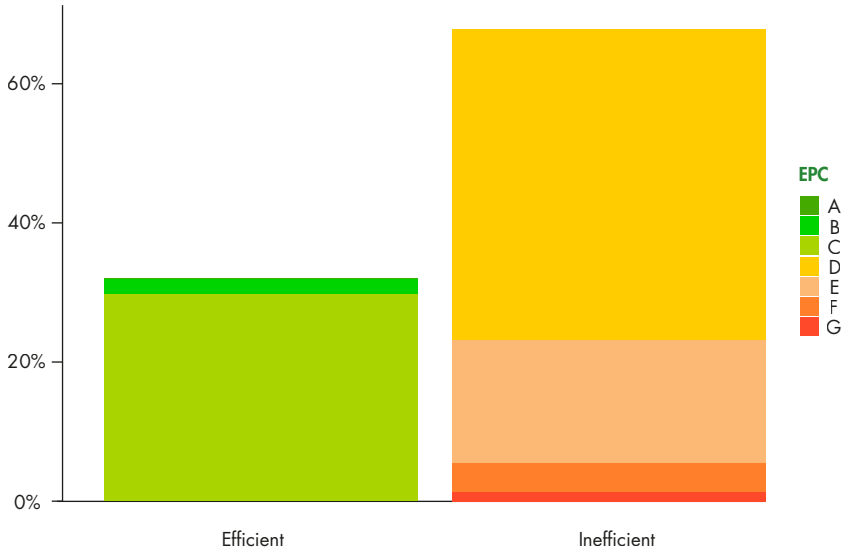
has stalled, measures are expensive, industry is underinvesting, and householders still find retrofits a major hassle. Recent data indicates that 16 million homes in England – two thirds of the English total – have Energy Performance Certificate (EPC) ratings of D or worse[11].

Retrofitting for more energy efficient homes is difficult in the UK because it has one of the oldest and least efficient housing stocks in Europe. Many of the energy improvement measures that are easier to install with lower levels of disruption, such as loft insulation and condensing boilers, have already been achieved. To make the necessary impact, much deeper retrofits will be required, recognising the necessary scale, cost, and challenge of deployment. Unfortunately, key to this is the Future Homes Standard which, despite previous suggestions that it would be introduced in 2023, has been delayed to 2025. This means hundreds of thousands of homes are likely to be built to lower standards until 2025, placing the burden and cost of home efficiency improvements on the future owners of those homes[12].

Retrofit requires governance and intervention; there currently exists no market for self-funded retrofit and waiting for one to develop will mean leaving problems to become further entrenched. The industries and sectors implicated in retrofitting have too many skill gaps to match the demand for nationwide retrofit. Recent political events, with multiple quick changes of administration, have made it very difficult to maintain the consistency of messaging required to create the market conditions for nationwide retrofit. Central government needs to support industries and supply chains through having a robust national retrofit strategy that allows for the creation of market conditions to kick start retrofit and support local authorities.

11 Environmental Audit Committee (2021) – Achieving net zero
12 Green Alliance (2021) – Net zero policy tracker: April 2021 update

Figure 2. England Retrofit Demand
Energy Performance Certificate lodgements, 2021



Source: DLUHC

The cost-of-living crisis which has defined the political landscape in 2022 is directly connected to the vast retrofit demand seen across the country. Many houses in the UK would need less gas to heat their homes if they were properly insulated, thus retrofitting would save people money and reduce greenhouse gas emissions. The £5000 Green Homes government grant[13] for thermal insulation upgrades of existing buildings falls well below the insulation requirements for net-zero in addition to the entire supply chain for installation being weak even before the impacts of the pandemic on labour supply and movement of goods. A comprehensive framework, including funding mechanisms, is required from central government for the full potential of retrofit to be realised.

Following the September 2022 announcements on energy price measures, representatives from the Building Research Establishment, RenewableUK, and other industry bodies called for the government to avoid 'knee-jerk' short-term measures and instead publish a comprehensive plan to decarbonise the country's

13 BEIS (2020) – Green Homes Grant: Make energy improvements to your home (closed to new applicants)

building stock[14]. Such a plan would bring down living costs in the long-term, increase energy security and increase the provision of a valuable skills in the labour market (see section 2.1.2).

1.1.3 Standards and regulation

Building efficiency is determined by the design and construction of the building, methods of heat production and distribution, and electricity and water usage within the building. However, environmental housing performance is determined by more than just building efficiency – it must also be a functional, liveable space for its occupants. In England, building standards are governed by the Building Regulations 2010, which set out approved standards for energy efficiency, emissions, ventilation, acoustics, and safety. Every home is required to have an EPC comprising a predicted fuel cost-based efficiency rating and a rating based on predicted carbon emissions.

In January 2021, the government published the outcome of the Future Homes Standard (FHS) consultation. The FHS is the government's strategy for new homes and will outline changes to the Building Regulations. It will apply to all new buildings from 2025, achieving a reduction of 75-80 percent in CO_2 emissions, with an interim change expected to apply from June 2022 that aims to reduce emissions by 30 percent compared to current levels[15]. In October, just days before the start of COP26, the government published the Heat and Buildings Strategy which outlines the importance of improving energy efficiency across the residential property sector and provides detail on decarbonising homes. The strategy sets a goal to decarbonise the buildings sector by between 47 percent to 62 percent by 2035[16].

Finally, in December 2021, the government announced new regulations whereby new homes and buildings will have to produce significantly less CO_2 (by 30 percent) as a bold step to help the country move towards net zero[17]. The changes were initially well received, having been described as "bringing us one step closer to decarbonisation", and came into force in June 2022.

1.1.4 Evaluating progress

The current policy approach is widely seen as not being ambitious enough to tackle the issue of energy inefficient homes in England. There is a challenge associated with promoting investment in household energy efficiency

14 Edie (2022) – Industry reaction: What do green groups want from Liz Truss as Prime Minister?
15 UK Parliament POST (2021) – Environmental housing standards
16 BEIS (2021) – Heat and Buildings Strategy
17 DLUHC (2021) – New homes to produce nearly a third less carbon

improvements, both for new build and for retrofit. The dominant policy framing has focused on the role of energy policy to address market failures or barriers to the take-up of energy efficiency measures. But attempts to create incentives to address these have not so far attracted the levels of investment needed to deliver an ambitious scale of deep household energy efficiency improvement[18].

Although reductions in carbon emissions in this sector have been very slow over the past decade, some progress has been made. For instance[19]:

- The government has a new fuel poverty strategy which sets out funding and policy to help the most vulnerable households in England.
- New regulations for non-domestic rented properties have been approved so those who own commercial or industrial rented properties will need to increase their energy efficiency to at least EPC Band B by 2030.
- Funding for the Local Authority Delivery Scheme and the Social Housing Decarbonisation Fund Demonstrator has been successfully allocated to upgrade homes most likely to be in the fuel poverty and social housing.

1.2 Local authority powers and capacity

Local authority powers and capacity to drive decarbonisation – housing and the built environment

Power	District/Unitary	County/Unitary	LEP
Soft power	• Provide information to residents on retrofit via 'one-stop shops'.	• Convening power over retrofit – can coordinate multiple districts.	• Regional hubs for information and support on retrofit.
Hard power	• Responsible for producing local plans. • Enforcing building standards. • Management of own public estate and council homes.	• Management of own public estate.	

18 Bergman et al (2020) – Reframing policy for the energy efficiency challenge: Insights from housing retrofit in the UK

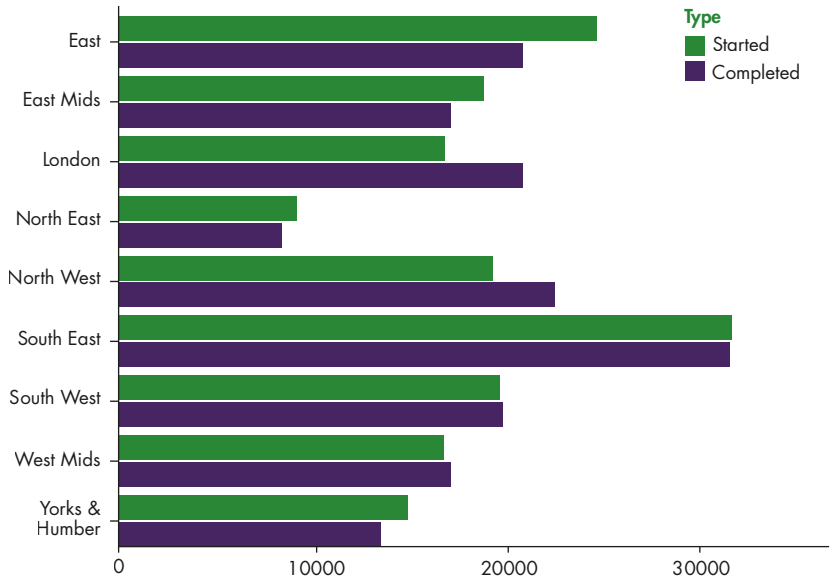
19 Green Alliance (2021) – Net zero policy tracker: April 2021 update

1.2.1 The planning system

The planning system provides the basis for decisions on the amount, location, and form of new development. Where, how, and what we build has significant implications for our environment. The current National Planning Policy Framework (NPPF) does not go into detail as to how the planning system should achieve this, and the July 2021 amendments to the NPPF did little to align national planning policy with the government's overall commitment to achieving net zero by 2050. In fact, the chapter on climate change remains relatively unchanged since the first version, published in 2012, meaning the climate sections of the NPPF are out of date.

For example, no reference was made in the 2021 revision to the government's target to reduce emissions by 78 percent by 2035[20]. These amendments, or lack of them, have been criticised as meddling as far as climate change is concerned. The task of setting specific, implementable net zero policies thus falls to local planning authorities in their development plans. Any borough, district, or unitary council can put real climate action into its local plan if it wishes and doing so is compatible with government policy. Unfortunately, those councils who choose to do nothing face no scrutiny or sanction from central government. In effect, then, the government is being hands-off about the potential of local plans to address the climate emergency.

Figure 3. New housebuilding, 2021



Source: DLUHC

20 Friends of the Earth Policy (2021) – U-turn on planning reform opens opportunity for progress on climate and nature

If set out properly, local plans provide planning authorities an opportunity to drive decarbonisation in housing and the local built environment – specifically, through embedding measures relating to climate change mitigation, adaptation, and resilience. The importance of local plans in driving decarbonisation has been recognised by the NPPF, which acknowledges their role in securing a significant reduction in greenhouse gas emissions as well as planning for renewable energy generation. Additionally, it also requires planning authorities to have a holistic understanding of climate adaptation. The RTPI and TCPA have released guidance on how to plan for climate change[21] that details these approaches. Certain actions that can be taken include planning green infrastructure as part of wider net zero infrastructure networks in the area, setting out how new development ought to be planned to avoid impacts of climate change over the next 100 years, and accelerate adaptation options for areas facing significant close term threats from climate change.

The NPPF and the 2004 Planning and Compulsory Purchase Act both provide a basis for local action to be taken on climate mitigation measures through local plan making. This can be done through avenues including setting clear carbon emission reduction targets, enabling low-carbon energy generation, setting requirements for the use of district heat networks in new developments, setting authority-wide targets for the use of decentralised renewable energy, and setting specific requirements around sustainable buildings and transport. The NPPF must reflect how things like local plans, local transport planning, and local nature recovery strategies can come together to enable a holistic cross sector approach to decarbonisation. This will enable stakeholders working in different types of planning, for example transport and land use planners, to come together to engage with one another. This would additionally help with developing sound business cases for net zero related projects and making them more attractive to investors.

The idea that local planning is an obstacle to growth ignores the potential of plans to build in long-term pipelines for development through which the goal of sustainable growth can be achieved holistically, whilst also increasing market certainty and skills provision. The local plan – rather than a bureaucratic obstruction to be avoided where possible – should be seen as a document in which the nexus of growth and decarbonisation is situated. Places should be using the local plan to chart the course to net zero in a way which maximises innovation and investment in human capital. A deregulatory race to the bottom will not

21 RTPI, TCPA (2018) – Rising to the climate crisis: A guide for local authorities on planning for climate change

produce the extent, nor the kind of growth required – locking in low quality housing, inequitable growth and most importantly exacerbating environmental damage by failing to ensure that the housing stock of the future is net-zero.

Modern Methods of Construction and the local plan

Modern Methods of Construction (MMC) refers to a broad range of alternative construction techniques that differ from traditional methods. The term most commonly refers to off-site factory production of the different component parts of buildings. This can range from walls to roofs to ready-made rooms that could be transported to the end destination for final assembly.

MMC have the potential to drive innovation in the construction industry, particularly in embedding low-carbon practices in the building process. It has been argued that MMC methodology has enabled 90 percent of the work to be completed off-site[22]. Whole house MMC, including off-site modular and panel construction can offer improved air tightness and energy efficiency in the final product.

There is a significant productivity advantage in using MMC. Low levels of productivity has been labelled an 'enduring feature'[23] of the home building industry. However, through using MMC, the time taken to construct a house is reduced – by up to half the time – while also enabling up to four times the amount of properties to be built with the same labour force used with on-site construction.

Increasingly, planning authorities are including the use of MMC in their local plans to help stimulate demand. However, stakeholders including the LGA have argued that the decision to include it must be taken locally rather than be an imposition from central government. It has also been argued that setting out MMC related policies in the local plan can help guide design and place making at an early stage. Doing so can set parameters for its use, help maintain high standards and provide a benchmark for design. Therefore, a way to incorporate MMC in a local plan would be through considering them when setting design standards in policy.

22 UK Construction Online (2022) – How are modern methods of construction helping to exceed net zero targets in practice?

23 Housing, Communities and Local Government Committee (2019) – Modern methods of construction

1.2.2 Housing and building standards

As with the planning system, it is important to move forward in a manner which increases the ability of building regulations to act as a framework for ensuring housing is contributing to the push to net zero. Local authorities must use every regulatory tool at their disposal to drive down emissions and deliver quality, efficient housing. District and unitary local authorities are responsible for council housing and can have an influence on private registered providers of social housing as well as having responsibility for their own buildings. Combined authorities can use their strategic planning powers to enable the provision of low-carbon housing. County, district, and unitary councils are in a good position to use their ownership of land and buildings to also boost clean technology uptake in the local area through implementing it in their own stock first.

Local authorities of all configurations can influence energy efficiency through retrofitting and the installation of low-carbon heating in council housing as well as their own council-owned buildings. They can do this through setting their own energy efficiency standards that are stricter than the national level and can ensure that buildings in their area comply with local building regulations such as enforcing minimum energy efficiency standards in the private rented sector. After 2025, local Building Control teams can be put in place to ensure compliance with the Future Homes Standard. They also have responsibility to increase awareness and provide advice and guidance to the public surrounding energy efficiency and low-carbon homes. It is important to draw attention here to criticisms of the FHS as it currently exists. Stakeholders have argued that it do not yet include the energy efficiency standards that are needed. A lack of focus on fabric first means the FHS currently does not tackle issues around poor insulation.

Dedicated staff and capacity

Across all areas of decarbonisation and clean growth in the housing sector, capacity in the form of dedicated staff is an issue for most local authorities. For councils with already pressed planning budgets, creation of roles to deal with decarbonisation can be challenging, particularly on specific issues such as retrofit or building standards, requiring restructuring and potentially depriving other policy areas of resource. It is therefore important that a review into the financing of council action on net zero take into account the need to bolster the human resources of the sector.

There are two Building Control Bodies in charge of checking whether building regulations are being adhered to. These include the Local Authority Building Control and a private sector Approved Inspector Building Control service. While

people can choose which control body to use, local authorities responsible for building controls have a central role in ensuring that the standards are being adhered to.

With regards to the decarbonisation of heat in buildings and the wider transition to net zero, changes to the building regulations came into force on Wednesday 15 June 2022. Most significantly[24], these amendments make provision for an updated methodology for measuring energy efficiency that utilise a new performance metric. Further changes to Part L, which covers the conservation of fuel and power, include the requirement of new residential buildings having to produce 30 percent less CO_2 than current standards, and a 27 percent reduction in other buildings. The changes brought to these two parts through the Future Homes and Buildings Standard will be fully introduced in 2025. However, the interim uplifts introduced in June 2022 include requirements for new homes to produce 30 percent less CO_2 than current standards, and a 27 percent reduction in other buildings.

1.2.3 Retrofitting at the local level

Being landowners with significant amount of building stock local authorities of all configurations are in a prime position to develop a localised solution to the retrofit challenge. There are a number of strengths that they possess which enable effective coordination at the local level to tackle the agenda. The LGA have highlighted a number of these qualities found in local authorities when setting out their vision for net zero[25]. These include being place shapers, purchasers, problem solvers, asset owners, and importantly convenors. Despite the failure of the Green Homes Grant in galvanising action around retrofit, the Local Authority Delivery (LAD) scheme has endured. Its continuation demonstrates the centrality of authorities working on the ground for the delivery of retrofit and heat decarbonisation strategies. The scheme is aimed at raising the efficiency of low income and low EPC rated homes, specifically those below Band E.

In total, £500m of funding is being allocated to local authorities through five regional Local Net zero Hubs, who act as regional points of coordination on energy issues. The hubs themselves are a collaboration of Local Enterprise Partnerships working together at scale on local energy projects. The example of the LAD scheme demonstrates the capacity, capability, and importance of coordination and collaboration at the local level for the effective delivery of retrofit

24 Norton Rose Fulbright (2022) – Changes to the Building Regulations to help deliver net zero
25 LGA – Net zero: Our offer to Government

strategies. However, greater funding is needed and with more attention paid to regional and local differentiation. Differences in land and property value naturally mean the ability of both local authorities and private homeowners to fund retrofit varies greatly across the country. Future retrofit strategy from central government will therefore need a 'levelling up' dimension, where areas with lower-than-average household income are afforded support in the retrofit agenda.

Collaborative working by local authorities will be essential in the current fiscal context, especially when considering the complexity and costs involved in retrofitting depending on factors such as the type of building tenure. However, understanding the level at which this collaborative working is needed will be equally important. At the district level, most with particularly inefficient buildings tend not to be in the combined authority regions which are better placed to coordinate major retrofit schemes. Consequently, districts need to collaborate with each other, their local businesses and communities who will benefit in the long term from more energy efficient homes.

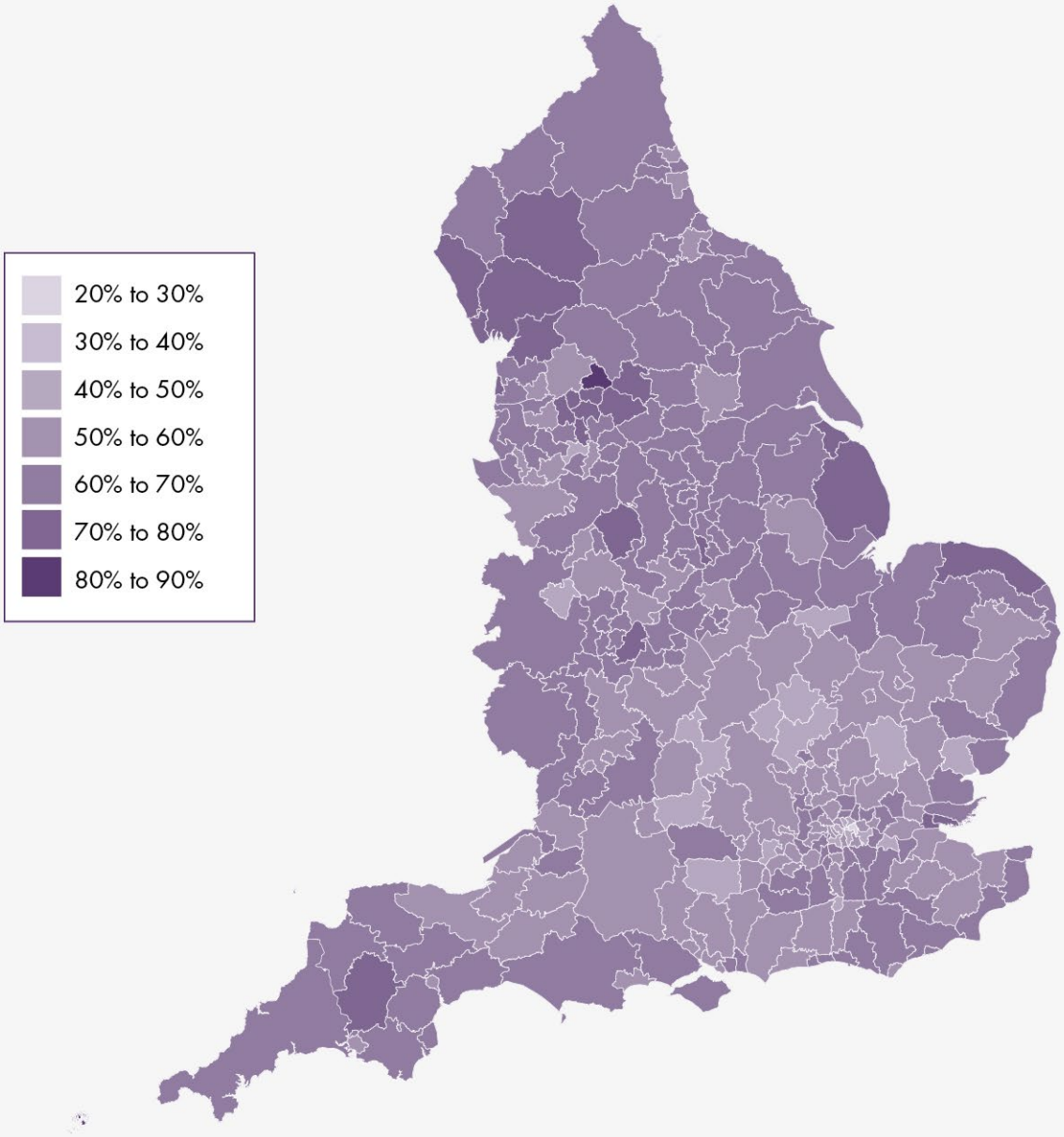
Funding retrofit: using blended finance

'Blended' finance is a practice typically ascribed to development scenarios, usually internationally. In the context of local government, blended finance would combine official central government funding with other private or public resources, as a means of leveraging additional funding from other actors. It can be problematic; favouring more affluent or middle-income places and must be balanced with government investment where the market for private finance is not viable. There is a need to ensure that projects integrate accountability, transparency, and the participation of residents, communities, and other stakeholders.

Strategic planning between district authorities at this level will be vital in helping raise the energy efficiency of inefficient and hard to reach homes. The idea of working together to deliver joined up net zero related action strategies has been advocated by prominent stakeholders, such as the RTPI through their call for Green Growth Boards[26]. The purpose of which would be to deliver on collaborative strategies relating to climate action, housing provision and transport needs. Through such bodies action can be taken on retrofit delivery at a regional level using pooled resources.

26 RTPI (2021) – Green Growth Boards

Figure 4: Ten-year average retrofit demand (percentage of EPC lodgements at D or lower)



Source: DLUHC

The lack of a detailed national strategy can cause uncertainty at the local level for businesses. Some local authorities are working to higher standards than others whilst mandating certain different standards, causing frustration within the construction sector due to firms having to work to multiple different standards – putting some off working within certain local authorities all together. Absence of a national baseline that all must adhere too is affecting the ability of the market to move forward with retrofit.

1.3 Achieving clean local growth in housing and the built environment sector

Opportunities	Barriers
• **Local Plans** can be used to make commitments to reducing carbon emissions in building a matter of law – this is most effective when quantified in terms of carbon budgeting. • **Retrofit** can be achieved through collaboration between councils on developing pipelines for supply at an aggregated scale, as well as pooling funds – this can be coordinated through county councils or LEPs.	• **Building standards** are a powerful tool for local authorities, particularly once the Future Homes Standard comes into effect, however the lack of capacity within local authorities to absorb and enforce the new standards must be addressed. • While local plans can help local authorities drive decarbonisation, the **National Planning Policy Framework** must be updated to raise the baseline and ensure action across the country.

Creating market conditions for clean local growth in housing and the built environment

Local authorities have an important role to play in providing market confidence and bringing in the investment needed to accelerate the decarbonisation and clean growth of their local economy. Creating the right market conditions for clean local growth in housing and the built environment will entail:

- Kickstarting the demand for retrofit and energy efficiency improvements by working on council owned public estate.

- Setting stringent standards for carbon emissions on new buildings and embedding these in the Local Plan.
- Using the Local Plan and associated strategies to drive low-carbon innovation and stimulate demand for practices such as Modern Methods of Construction

1.3.1 Building net zero into local plans

Planning should be a key mechanism for delivering sustainable development. Done well, planning ensures that the right development happens in the right place and at the right time, benefiting communities, the environment, and the economy. The net zero policies in development plans in England vary between local authorities with differences in the conditions imposed, the sustainability related assessments, the level of carbon reduction needed to be policy compliant, and ultimately the likelihood of planning permission for a scheme being granted.

The Plymouth & South Devon Joint Local Plan[27], adopted by South Hams, West Devon, and Plymouth City Council, is a leading example of a local plan that has properly taken net zero ambitions into account for the future development of the local area. It is seen as the only adopted plan that has a quantified and strategic carbon reduction target to help support the council's 2030 net zero ambition. Its use of the Community Infrastructure Levy to help fund local environmental projects has also been lauded as innovative. CPRE have stated[28] that this is the best example of a local plan fully aware and on top of local climate change targets and actions.

In practical terms, what the local plan means for Plymouth and South West Devon is that all new houses in the area will need to be built with net zero and climate change in mind[29]. Specifically, the plan makes it legally binding for builders to bare the environment in mind when constructing homes and buildings in the area. Now efforts are being made to engage the local community on the details of the plan and to see whether they believe it goes far enough in setting out practical steps towards achieving net zero by 2030 – a target which all three councils have set after declaring a climate emergency.

It is hoped that by setting such a legally binding requirements, further plans for

27 Plymouth City Council (2019) – Adopted Plymouth and South West Devon Joint Local Plan
28 CPRE (2022) – Climate emergency: time for planning to get on the case
29 Radio exe Devon (2022) – Plymouth & West Devon new-builds must be environment-friendly

seeing community energy hubs occur in the area can come to fruition. If homes that are being built in the local area are being done so with battery storage facilities designed in them, then the ability for neighbours to share energy stored becomes a lot easier.

Undertaking a carbon assessment of a local plan's spatial strategy is one way of embedding net zero into local plan making through a place-based approach. South Cambridgeshire District Council have recently done this in their joint local plan[30] with Cambridge City Council. Specifically, a bespoke carbon assessment of all spatial strategy options is being looked into. The benefit of this has been in giving both councils an overview of the choices in terms of what the carbon costs of densifying certain urban areas would be, which will give a better understanding of where best to plan for new housing in the area.

The Climate Change Committee[31] have recognised the urgent need to integrate energy and spatial planning to be able to better embed net zero action in the local planning system. They also highlight how most local plans have not recognised the extent of the challenges associated with delivering net zero. Currently only one third of local plans have binding carbon policies or objective standards for energy efficiency. Therefore, despite the importance of the planning system in delivering effective action against climate change, on the whole this has not been translated to local plan making. Despite local planning authorities having the power to put climate action into their local plan, there is no scrutiny or penalty from central government for not doing so.

Despite this, more examples of local planning authorities are emerging showing improved efforts at building net zero into their local plans. For example, Oxford City Council's adopted Local Plan 2036 has gone further than many others in pushing for a 40 percent reduction in emissions associated with regulated energy over Building Regulations. Elsewhere, the Broxbourne Borough Council Local Plan sets out conditions requiring the design and materials used in building construction needing to ensure long term resilience and minimise ongoing maintenance. Additionally, it also emphasises the recycling of building materials and their reuse on site wherever possible to minimise waste.

1.3.2 Building standards

Building regulations – and the role of district councils in ensuring they are adhered to – provide a strong foundation for action to help drive decarbonisation and the

30 Greater Cambridge Shared Planning – Greater Cambridge Local Plan
31 Climate Change Committee (2022) – Local Authorities and the Sixth Carbon Budget

wider transition to net zero on the local level. And while all parts of the building regulations will be vital tools for decarbonisation, there are a few which will be particularly important for the journey ahead. This includes the building regulation changes introduced in June 2022. The changes introduced were part of a wider move by government to improve energy efficiency standards for buildings and will have significant impact on developers as well as social housing providers, including local authorities. However, if adhered to properly, they provide an opportunity to embed decarbonisation and clean growth in communities and the built environment.

There are a number of challenges associated with the proper implementation of these standards. In its response[32] to the consultation of the Future Buildings Standard, the LGA identified issues with council capacity to enforce these standards as a significant barrier. Specifically, the barrier that exists between energy efficiency criteria provided in a planning application and its enforcement undermines local plan policies around energy efficiency in construction from being effective.

This is due to the disconnect between, on the one hand, building control that is focused on ensuring building regulations are adhered to, and on the other, planning departments being overstretched with the planning approval process. Council capacity being stretched thin ultimately results in there being no join up between 'the energy efficiency criteria specified in the planning application and the enforcement of building regulations'. Therefore, the LGA have urged government to address this prior to any change of legislation being brought forward.

1.3.3 Collaboration on retrofit

Understanding the urgent need to act now on the retrofit challenge, there are multiple avenues through which to take action at the local level. Yet for many local authorities still experiencing the effects of austerity measures and budget cuts that are impacting their ability to act, there is an urgent need for clear guidance. This is why the first step to galvanise action will be to equip them with the right knowledge and tools.

The LGA ran a 'Building Housing Retrofit Skills Leadership and Learning Programme'[33], over a six-month period across 2021 to 2022. This brought

32 LGA (2021) - LGA submission to the Ministry of Housing, Communities and Local Government on the Future Buildings Standard 13 April 2021

33 LGA (2022) - LGA Building Housing Retrofit Skills Leadership And Learning Programme, March 2022

together 24 officers and councillors from borough, district, county, and combined authorities across England with the express purpose of going through and unpicking challenges related to domestic retrofit. In particular, focus was placed on developing skills within local authority officials to handle retrofitting and implement strategies.

Similarly, Local Partnerships have developed a 'Local Authority Retrofit Handbook'[34] in order to give practical advice to local authorities of all shape and size in England. It was commissioned by BEIS through the five Net zero Energy Hubs and brings all existing resources and tools in one place to help streamline and guide authorities starting on their retrofit journey or looking to scale up action already being taken.

Looking at examples of how different authorities have approached retrofit, Hampshire County Council set up the Insulate Hampshire[35] initiative that ran throughout 2012. The initiative involved the county council and 11 district councils from the region and was delivered by YES Energy Solutions. At the time of its conclusion, it was the largest local authority area based insulation scheme in the country and delivered the greatest number of insulation measures when compared to other authorities. Specifically, the scheme had £5.5m available to offer homeowners and private renters free cavity wall and loft insulation. Over its course, more than 18,500 insulation measures were delivered.

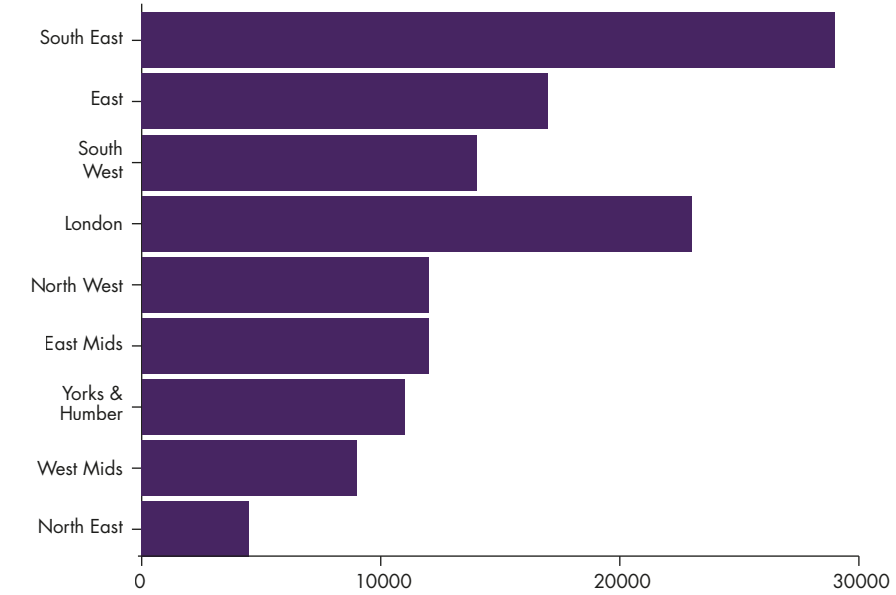
Another example can be found with New Forest District Council and their Greener Housing Strategy. The recently launched strategy is set out to help with the design of retrofit packages by April 2024 and then deliver EPC C by 2030. Using the strategy, the council will also work with private landlords and homeowners to help them improve their energy efficiency standards a part of which will include running a localised communication campaign from 2022 onwards.

Collaboration on retrofit at the local level will also be important to grasp the potential for productivity growth found in the sector. Estimates suggest that the 'retrofit revolution' could create up to half a million jobs across the UK[36]. Given this, it will be vital for every part of the local state to work together to manifest this according to their unique place circumstances and strengths. Work has already begun in this direction, with the West of England Combined Authority publishing a 'Retrofit Skills Market Analysis'[37].

34 Local Partnerships (2021) – Local authority domestic retrofit handbook
35 YES energy solutions – Insulate Hampshire
36 Edie (2020) – Green recovery: 'Retrofit revolution' could create half a million UK jobs
37 West of England Combined Authority (2021) – Retrofit Skills Market Analysis

Finally, in terms of maximising the potential of collaboration and strategic planning for retrofitting on the local level, Localis has previously advocated for the use of 'one stop shops' to engage with homeowners in finding suitable methods to facilitate retrofit. They should be formed as a collective effort of neighbouring district authorities and be set up as a joint venture that sits independently of each constituent authority. The ultimate benefit of this would be to allow them to pool resources to act on the challenge at an aggregated scale.

Figure 5. Jobs in home insulation



Source: Business Register and Employment Survey

1.4 Case study: North Kesteven

North Kesteven District Council (NKDC) has adapted consistently in recent years to stay ahead of changing regulations concerned with housing standards in line with carbon targets. In 2010, the Homes and Communities Agency encouraged a "reasonable standard" for sustainable homes, but NKDC forged ahead and moved to the less generalised Fabric First Standard to maintain property insulation values. This code was improved repeatedly as the council strove to keep ahead of the curve in building regulatory standards. Now, homes in North Kesteven must meet the strict Passivhaus Standard alongside the CO_2-sy Homes Standard[38] under the Climate Emergency Action Plan 2020, and the success of these new builds have become a source of pride for the district.

In 2019, North Kesteven joined many other areas in declaring a climate emergency and devoted itself to novel and direct action. Its planning officers developed an evidence base on climate change and developments came to a head in 2021, when the council set out new policies and included an ambitious chapter on climate change in its local plan. These policies ranged in subject matter from large-scale renewables to embodied carbon.

Navigating a complex and uneven policy landscape

The main obstacles to these plans are viability and funding, which reforms to the methodologies around grant funding, as well as a general simplification and clarification of the legislature, could alleviate. Regarding building regulations, current government grant funding does not aim for a zero-carbon solution, rather relying on the goal of simply reaching EPC Band C in buildings where retrofitting remains a relatively expensive task despite the inferior standard. Additionally, the Standard Assessment Procedure methodology does not reflect the benefits of new technologies such as heat pumps, which are currently defined as electric heating without accounting for their contribution to decarbonisation.

Although private contractors are willing to build

38 North Kesteven District Council (2021) – All new council homes will be zero carbon

to higher standards, the supply chain required for the level of housing standards and new builds required by central government will falter under the demand of every council that intends to meet these standards. There are simply not enough materials for heat pumps and insulation available in England, and the largest contractors are spread thin and concentrated where demand is highest. Districts such as North Kesteven suffer because of this varied demand.

In North Kesteven, a majority rural district, over half of buildings fall below an EPC C rating for energy performance, with over two-thirds of their building stock built pre-1960. Every building below an EPC C rating is off the gas grid. Evaluations of the costs to retrofit all buildings to a zero-carbon standard – more stringent than current government requirements, but a goal for the NKDC – reveal a figure of between £85-100 million for the project. There is also a major issue with the funding of retrofitting due to the finance regulations surrounding the Housing Revenue Account, given the requirement of depreciation. Homes England's approach to grant allocation for new builds also lacks the incentive for local authorities to reach for net-zero, with grants given on a basis of number of bedrooms per home rather than sustainable build standards.

Marshalling stakeholders is always a challenge in the delivery of housing, but this is unnecessarily complicated where net zero is concerned by mixed messaging from central government. Direct government influence over local planning in North Kesteven is minimal, given the dearth of nationally significant infrastructure projects in the area. Yet there are contradictions across legislature, where specific powers and limitations come into conflict with the overall net zero strategy, councils must decide which takes precedence. For NKDC, these barriers produced by government guidance can result in protracted debates over correct implementation. This lack of clarity can cause a general lack of confidence that actions and policies proposed in the plan will be approved pass through a successful examination as being in accordance with the NPPF.

Moving forward: lessons from North Kesteven

There is clearly room for a change in the way that local authorities are tasked with and enabled to work on clean growth in housing and planning. NKDC, as a council that has consistently reached ahead of national standards, acknowledges a need for a national evidence base from which all areas can benefit; a pool of knowledge that would assist other council bodies without the need to sacrifice excessive resources for research. Alongside this, a national spatial strategy would be useful, wherein the disparities of energy resources across the country would be lessened by a critical analysis of the available space and already-existing energy schemes. The lasting impression of this study on North Kesteven implies that a well-informed and collaborative local authority is a key factor in the route to net zero.

NKDC aspires to explore models that involve consortiums that work to bring in additional funding. It recognises the importance of like-mindedness among district councils but admits that there is still a need for a set national standard for housing – one which exceeds the plans of the Future Homes Standard – and greater encouragement from central government. Regarding the local plan, there is also an aspiration for a de-risking process, where local authorities could move forward with confidence, ensure the evidence base is robust, and that policies could deliver an endgame of net zero.

1.5 Recommendations to central government

- Raise the standards for net zero local plans in the revised National Planning Policy Framework:
  - Make specific reference to the targets agreed to in the Paris Agreement and the role of local planning in achieving the goal.
  - Include a requirement for emission reduction targets at the local level.
  - Set targets for green and blue infrastructure provision.
  - Set requirement for inclusion of low-carbon heat technologies in new developments.
  - Set stringent mitigation obligations for new developments.
- Produce a long-term plan for building stock decarbonisation with regional breakdowns of supply and demand for retrofit.
- As part of the overall measures to bring down energy costs and support people through the cost-of-living crisis, government must find and set aside money for a long-term retrofit programme, to give industry the confidence needed to ramp up investment in the necessary skills and materials.