The Climate Crisis

A Guide for Local Authorities on Planning for Climate Change

The Climate Crisis – A Guide for Local Authorities on Planning for Climate Change

Fourth Edition

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The fourth edition includes technical updates to reflect the most up-to-date evidence and practice, and areas where national policy and guidance has moved on.

Information in the guidance is accurate at the time of writing, although it is acknowledged that the government's planning reform agenda is ongoing with the Levelling Up and Regeneration Bill (LURB) making its passage through parliament. Therefore, this guide may need updating in due course to reflect policy changes.

Another change from previous editions is that case study content has been moved to an online **case study hub**. This means the guidance document is more succinct, whilst allowing for regular updates to the case study hub to reflect best practice. Case studies are referenced throughout the guidance and can be found on the TCPA website, and will be updated regularly.

foreword

The growing impacts of climate change are having a devastating impact on communities across our planet. Reducing our carbon emissions and adapting to the impacts already locked into our climate requires the urgent adoption of radical and creative solutions. It also requires unprecedented co-operation at both global and local levels, and we believe the planning profession can play a key role.

The RTPI and the TCPA believe that climate change should be the top priority for planning across the UK. This is simply because the impacts of flooding, overheating and other consequences of climate change stand in the way of everything else we want to achieve in terms of the creation of vibrant communities and a sustainable and just society. We are particularly concerned that the damaging outcomes of climate change continue to have the most severe impacts on the most vulnerable and those least able to respond.

We have three shared messages for planners and the wider community:

1 **Ensure that tackling the climate crisis is at the heart of the vision for the future of our communities.**

2 **Recognise how vital planning is to securing that vision – both directly, through facilitating the extension of renewable energy generation, and strategically, through practical nature-based solutions and design actions that can promote sustainable travel, urban cooling, or natural flood defence.**

3 **Finally, recognise how many of the actions necessary to tackle the climate crisis are also key in creating healthy, ecologically rich, prosperous and beautiful places for us and for future generations.**

This guide is intended as an introduction to some of the key issues. It is a starting point on the vital journey to put in place practical solutions which will halt the rise in temperatures and begin to reverse the climate crisis. Above all, we would remind everyone just how little time is left to secure the radical reductions in carbon that we need. Transformative changes and sustained action are required now at every level if we are to secure our long-term survival.

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President, Royal Town Planning Institute

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section 1
the vital role of planning

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Drastic action is needed to reduce carbon emissions now

Climate change is the greatest challenge facing our society. Every decision we take must count towards securing our long-term survival. The science of climate change is now well understood, and we know that we must limit the global temperature increase to 1.5°C above pre-industrial levels if we are to avoid catastrophic climate impacts. A recent report from the IPCC (Intergovernmental Panel on Climate Change)[1] made clear that drastic action to reduce carbon emissions is needed now if we are to have any hope of achieving that target. But we know that severe climate impacts are already locked in even if we do limit the temperature rise to 1.5°C. These impacts require urgent re-design of our communities to make them safe and liveable for future generations.

We have to face up to this challenge now if human society is to have any chance of a long-term future.

We have the knowledge and technology to cut carbon emissions and deal with the climate change impacts that are already happening. Spatial planning has a vital role to play in enabling and encouraging the transition to a competitive and resilient low-carbon society that also supports the environment and human health and wellbeing.

1 *Climate Change 2021: The Physical Science Basis.* Summary for Policymakers. Intergovernmental Panel on Climate Change, Aug. 2021 https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_SPM.pdf

Planning policy across the UK addresses the issues associated with climate change, but action has been delayed, inconsistent and de-prioritised for too long. Structural weaknesses have significantly undermined the effectiveness of the planning system, including a lack of political drive in England and Northern Ireland and, across the UK, the loss of in-house skills resulting from local government austerity. In this context, action on climate change through planning can seem hard to achieve, but there are clear opportunities to act now, and strong legal and policy requirements remain in place. This guide aims to give the reader the confidence needed to act locally now, by making best use of existing policy, legislation, and technology.

The TCPA sees the core purpose of planning as the creation of healthy, sustainable and resilient places that are fair for everyone. It is not possible to achieve this aim without addressing both climate change mitigation and climate change adaptation. Many of the adverse impacts of climate change, such as extreme heat, flooding or water scarcity, vary spatially but will result in costs to businesses and householders. Solutions to these problems need to be developed locally. Planning can do this directly through, for example:

- Consenting renewable-energy developments and preventing fossil fuel extraction.
- Determining the location, scale, mix and character of development to ensure that its density, layout, building orientation and landscaping make it resilient to climate impacts.
- Encouraging a wide range of behavioural change, such as enabling people to make personal choices through, for example, the creation of green and walkable streets.

Planning offers the opportunity to set and implement the long-term strategic vision necessary to deal with impacts such as sea level rise – and, crucially, it operates within a local democratic context, allowing communities to participate. Planning is a key part of our national survival system. It should embed the principles of net zero carbon and climate resilience at all levels; nothing should be planned without having successfully demonstrated that it is fit to take its place in a net-zero emissions future.

1.1 Economic resilience

Responding successfully to climate change will not only protect people and wildlife, but will also define future economic progress. Only those places that can demonstrate climate resilience will be able to secure investment and insurance in the future. Already, many homes and businesses in the UK would not be able to get affordable flood insurance without the subsidies provided by the Flood Re scheme. The scheme does not apply to houses built after 2009 because it is assumed by the insurance industry that the planning system has provided checks and balances to deliver new homes in low risk locations with appropriate measures to ensure they are resilient to the impacts of climate change. However, for many properties this is not the case, and a significant minority of homes built since 2009 will not be resilient over the long term. Furthermore, the Flood Re scheme was designed to facilitate a transition phase, so that when the scheme wraps up in 2039 affordable flood insurance can be secured through the market. The resilience of the housing stock to the risk of flooding needs a major upgrade if this is to be achieved.

Without comprehensive action, climate change will severely limit economic growth. However, the approaches now required present a significant opportunity to deliver a decarbonised and resilient economy that supports job creation. While the impacts of climate change are dynamic and change over time, so, too, will our technological responses. This applies equally to both soft and hard engineering solutions that support the climate resilience of buildings and communities. Some solutions are beautifully simple in concept (such as using trees and other forms of green infrastructure to reduce urban temperatures), and, with careful design, can bring multiple benefits for health and wellbeing. Renewable energy technologies such as solar and wind power are now cheap enough that projects are coming forward without subsidies. Electric vehicles will rapidly replace traditional engines, and new decentralised low-carbon technologies, including batteries, and advances in artificial intelligence are being combined to form interconnected decentralised energy networks.

Together, these changes will have profound implications for development and how we plan and re-plan new and existing communities. While we cannot anticipate every aspect of the changes, planners should be alive to the possibilities of new technology and should adopt a flexible approach to innovation.

1.2 This guide

Written by the Royal Town Planning Institute (RTPI) and the Town and Country Planning Association (TCPA), this guide provides an accessible introduction to the broad issues involved in planning for climate change. It is intended to help planners and politicians play their full part in tackling the climate crisis, and is designed to inform the preparation of strategic and local development plans being prepared by local and combined authorities in the UK. It replaces the previous edition of this guidance published in 2021.

The guide cannot cover the full breadth of all the planning policy issues raised by climate change. Instead, it focuses on the broad approaches to handling carbon reduction and climate adaptation through the planning system. It refers to the relationships between planning and other systems, such as building regulations, but focuses on the former. It does not contain detailed material on important elements such as green infrastructure, biodiversity, and food security. Nor does it repeat the guidance published by government agencies (for example on flood risk). There is a growing body of detailed and practical advice on addressing climate change issued by a range of cross-sector organisations, which is referenced throughout this guide. A list of further guidance is also provided at section 6.

Box 1

If you only have five minutes…

Addressing the climate challenge through the planning system can feel complicated and frustrating, so if you are just starting out as a planner or politician and working with limited resources, keep in the back of your mind three rules of thumb:

1. **Always seek development options that will result in the biggest carbon reductions.**
2. **In thinking about the risks that will affect development in the future, always apply a reasonable worst-case scenario[a] in relation to climate impacts.**
3. **Always seek to achieve multiple benefits, being aware that action on climate change often delivers wider social and economic benefits, and these should be actively sought and promoted.**

a Defined later in this guide, in Section 3.2.2

section 2
the legal and policy background

The UK has set ambitious targets for reducing greenhouse gas emissions (see Box 3), and in all four UK nations there is law or policy requiring local planning authorities to consider and take action on mitigating and adapting to climate change. Such policy is not always strictly adhered to, and could be strengthened, but it sets out the expectations of what local planning authorities should do to help secure progress on meeting the UK's emissions reduction targets and deliver resilient places that can cope with the growing risk from the impacts of climate change. This section of the guide outlines the legal and policy frameworks for the four UK nations, highlighting the key laws and policies that local planning authorities must follow, as well as hooks that planners can use to push for more ambitious action in their local areas.

Box 2

Key definitions in policy

The following definitions of key terms relating to planning for climate change are taken from various UK policy documents:

- ***Climate change adaptation:*** Adjustments to natural or human systems in response to the actual or anticipated impacts of climate change, to mitigate harm or exploit beneficial opportunities.

  Source: National Planning Policy Framework. Ministry of Housing, Communities and Local Government (now Department for Levelling Up, Housing and Communities), Jul. 2021
  https://www.gov.uk/government/publications/national-planning-policy-framework--2
- ***Climate change mitigation:*** Action to reduce the impact of human activity on the climate system, primarily through reducing greenhouse gas emissions.

  Source: National Planning Policy Framework. Ministry of Housing, Communities and Local Government (now Department for Levelling Up, Housing and Communities), Jul. 2021
  https://www.gov.uk/government/publications/national-planning-policy-framework--2
- ***Resilience:*** The capacity of people and places to plan for, better protect, respond to and to recover from flooding and coastal change (or other impacts of climate change).

  Source: National Flood and Coastal Erosion Risk Management Strategy for England. Environment Agency, Jul. 2020
  ttps://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/920944/023_15482_Environment_agency_digitalAW_Strategy.pdf
- ***Net zero:*** The point at which the amount of greenhouse gases being put into the atmosphere by human activity in the UK equals the amount of greenhouse gases that is being taken out of the atmosphere.

  Source: Powering our Net Zero Future. Energy White Paper. Department for Business, Energy and Industrial Strategy. HM Government, Dec. 2020
  https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/945899/201216_BEIS_EWP_Command_Paper_Accessible.pdf
- ***Lifetime of development:*** Residential development should be considered for a minimum of 100 years, unless there is specific justification for considering a different period. For non-residential development, 75 years forms the starting point for assessment.

  Source: 'Flood risk and coastal change'. *Planning Practice Guidance*. Ministry of Housing, Communities and Local Government (now Department for Levelling Up, Housing and Communities), August 2022
  https://www.gov.uk/guidance/flood-risk-and-coastal-change

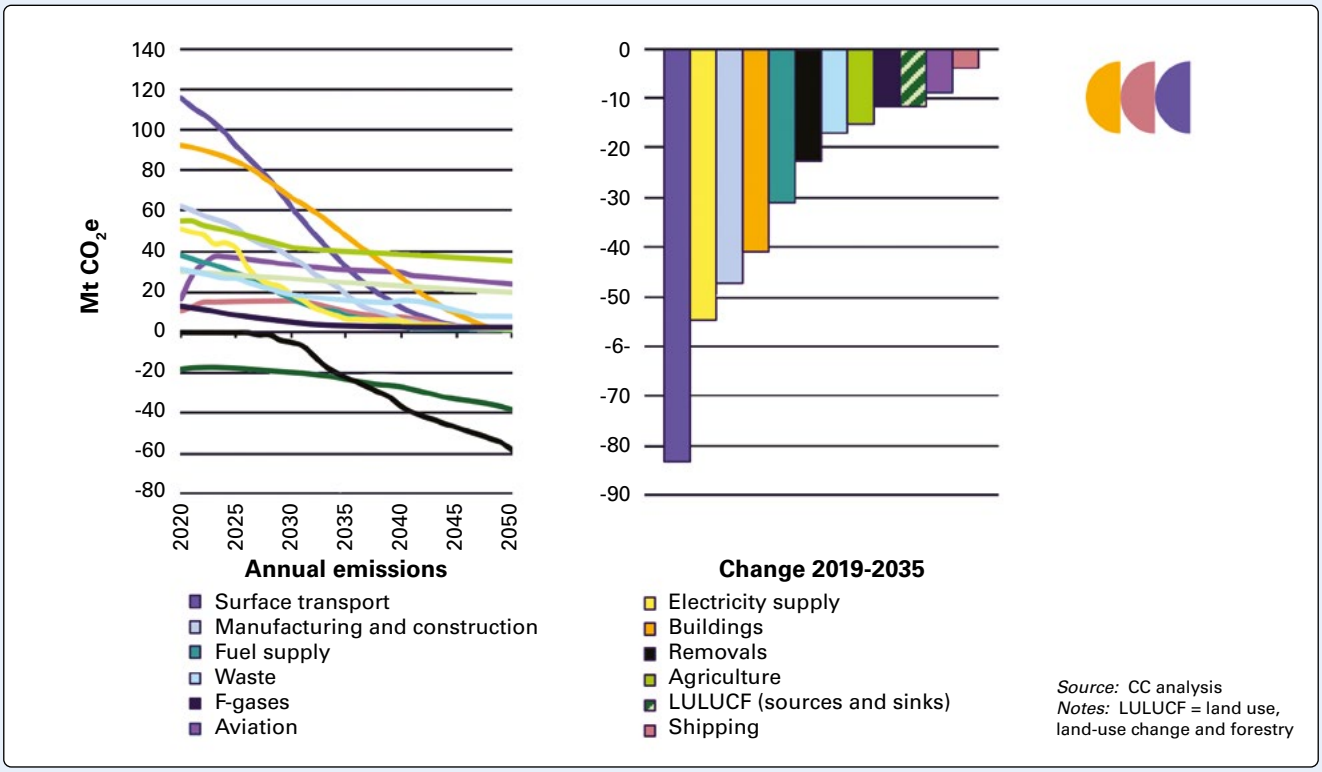
Box 3

UK emissions reduction targets

Through the Climate Change Act 2008[a] and as a signatory of the Paris Agreement,[b] the UK Government has committed to:

- reduce emissions by at least 100% of 1990 levels by 2050; and
- contribute to global emissions reductions aimed at limiting global temperature rise to well below 2°C and to pursue efforts to limit temperatures to 1.5°C above pre-industrial levels.

To meet these targets, the UK Government sets five-yearly carbon budgets. The Climate Change Committee's Sixth Carbon Budget, introduced into law in 2021, sets a target to reduce UK greenhouse gas emissions by 78% by 2035 (compared with 1990 levels). Meeting the Sixth Carbon Budget, which delivers three-quarters of the emissions reductions needed to reach net zero by 2050, is the only way that the UK can deliver on its contribution to the Paris Agreement. It requires the UK to reduce emissions by 2.25% of 1990 levels per year. Alongside the Sixth Carbon Budget, the Climate Change Committee has published a report for local authorities detailing their commitments to net zero and how to achieve them.[c]



Sectoral emissions under the Balanced Net Zero Pathway

Source: Figure 5 in *The Sixth Carbon Budget: The UK's Path to Net Zero*. Climate Change Committee, Dec. 2020. Climate Change Committee copyright

Each devolved nation also has its own climate change targets, supplementing action under the Climate Change Act 2008.[d] In some cases, the devolved administrations are more ambitious than the UK as a whole:

- Scotland plans to cut emissions to net zero by 2045, five years ahead of the target for the UK as a whole, and generate 70% of Scotland's overall energy consumption from renewables by 2030.
- Wales plans to reduce greenhouse emissions to net zero by 2050.
- Northern Ireland is targeting 35% lower emissions by 2025 under its Greenhouse Gas Action Plan and now has a binding target of net-zero by 2050 through the Climate Change Act.

a Climate Change Act 2008. http://www.legislation.gov.uk/ukpga/2008/27/pdfs/ukpga_20080027_en.pdf

b Paris Agreement. United Nations, Dec. 2015. http://unfccc.int/files/essential_background/convention/application/pdf/english_paris_agreement.pdf

c *Local Authorities and the Sixth Carbon Budget*. Climate Change Committee, Dec. 2020. https://www.theccc.org.uk/wp-content/uploads/2020/12/Local-Authorities-and-the-Sixth-Carbon-Budget.pdf

d Further information on the powers and policies of the devolved nations is available in *Around the UK*. Briefing. Energy & Climate Intelligence Unit, Oct. 2014. https://eciu.net/analysis/briefings/uk-energy-policies-and-prices/around-the-uk

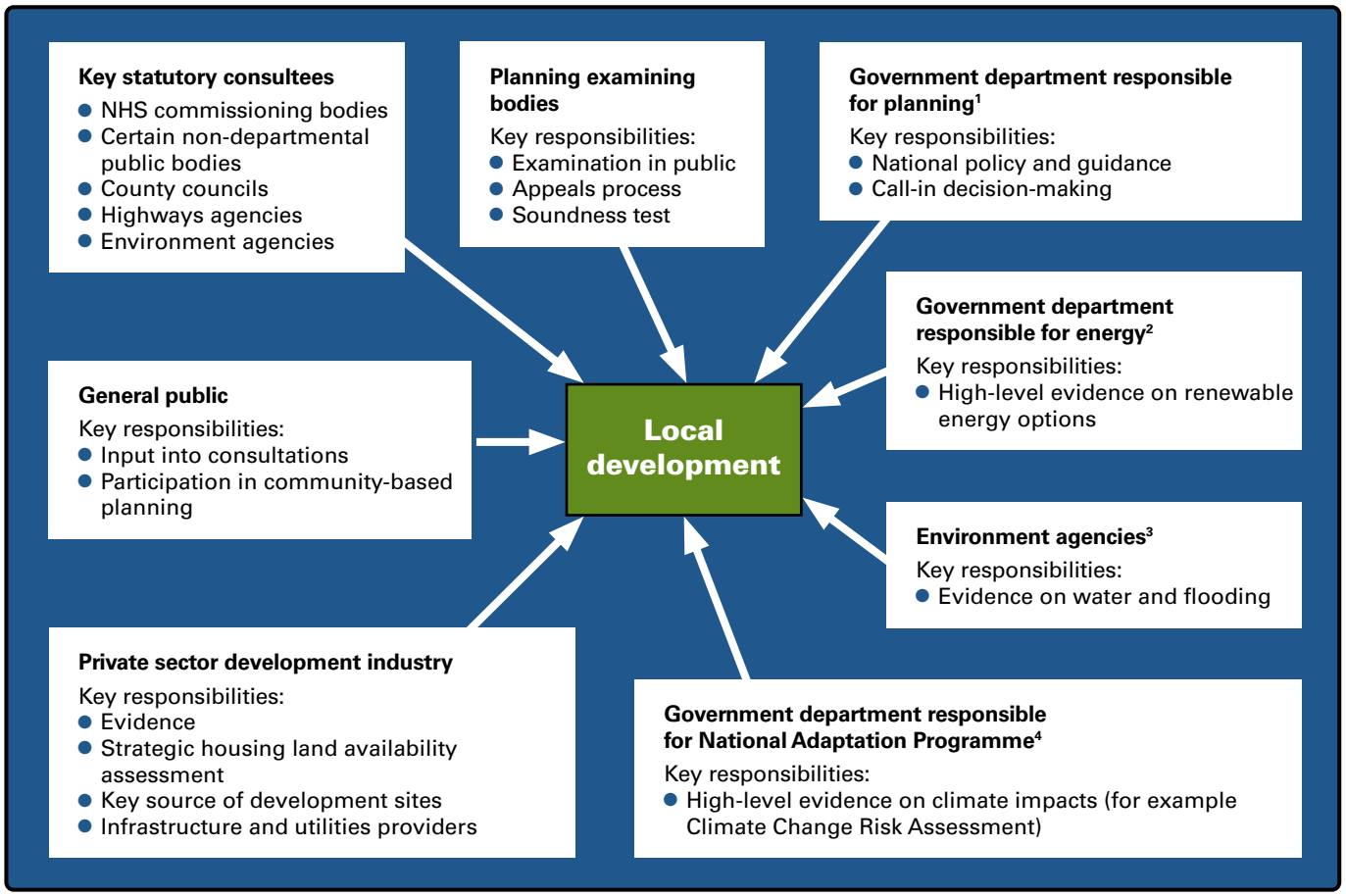


Fig. 1 Institutions and bodies with a role in planning for climate change

1 ***England:*** Department for Levelling Up, Housing and Communities. ***Scotland:*** Local Government and Communities Directorate. ***Wales:*** Climate Change, Energy and Planning Directorate. ***Northern Ireland:*** Department for Infrastructure

2 ***England:*** Department for Energy Security and Net Zero. ***Scotland:*** Energy and Climate Change Directorate. ***Wales:*** Climate Change, Energy and Planning Directorate. ***Northern Ireland:*** Department for the Economy

3 ***England:*** Environment Agency. ***Scotland:*** Scottish Environment Protection Agency. ***Wales:*** Natural Resources Wales. ***Northern Ireland:*** Northern Ireland Environment Agency

4 ***England:*** Department for Environment, Food and Rural Affairs. ***Scotland:*** Energy and Climate Change Directorate. ***Wales:*** Climate Change, Energy and Planning Directorate. ***Northern Ireland:*** Department of Agriculture, Environment and Rural Affairs

2.1 England

2.1.1 The legislative context

In England there is a mass of complex legislation which impacts on planning for climate change.

Climate Change Act 2008

The Climate Change Act 2008 includes a statutory target of reducing carbon dioxide emissions to at least 100% below 1990 levels by 2050, with interim targets, set through five-yearly carbon budgets (see Box 3). The Act also created a framework for climate change adaptation. The third UK Climate Change Risk Assessment required under the Act was published in January 2022.[2] The independent Evidence Report that informs the statutory UK Climate Change Risk Assessment was published in June 2021.[3] The second National Adaptation Programme (NAP) – which addresses the risks affecting communities across England and sets out the Westminster government's ongoing investment and work to tackle these risks – was published in July 2018,[4] and the third will be published in 2023. The Climate Change Act confers a reporting power,

2 *UK Climate Change Risk Assessment 2022.* HM Government, Jan. 2022. https://www.gov.uk/government/publications/uk-climate-change-risk-assessment-2022

3 *Independent Assessment of UK Climate Risk.* Climate Change Committee, Jun. 2021. https://www.theccc.org.uk/publication/independent-assessment-of-uk-climate-risk/

4 *The National Adaptation Programme and the Third Strategy for Climate Adaptation Reporting: Making the Country Resilient to a Changing Climate.* Department for Environment, Food and Rural Affairs, Jul. 2018. https://www.gov.uk/government/publications/climate-change-second-national-adaptation-programme-2018-to-2023

requiring compulsory reporting of climate change impacts and adaptation plans for certain public bodies and organisations.[5]

Why is this relevant?

The outputs from the Climate Change Act provide an evidence base that can be used in identifying priorities for action and appropriate adaptation measures, as well as a carbon reduction budget which is directly relevant to planning.

Planning and Compulsory Purchase Act 2004 and the duty on mitigation and adaptation

The Planning and Compulsory Purchase Act 2004[6] sets out the structure of the local planning framework for England and Wales, including the duty on plan-making to mitigate and adapt to climate change.

Why is this relevant?

Local planning authorities are bound by the legal duty set out in Section 19 of the Planning and Compulsory Purchase Act 2004, as amended by the Planning Act 2008, to ensure that, taken as whole, plan policy contributes to the mitigation of, and adaptation to, climate change.[7] This powerful outcome-focused duty on local planning clearly signals the priority to be given to climate change in plan-making.

In discharging this duty, local authorities should consider paragraph 153 of the National Planning Policy Framework (NPPF) and ensure that policies and decisions are in line with the objectives and provisions of the Climate Change Act 2008 and support the National Adaptation Programme. For the sake of clarity, this means that local development plans should be able to demonstrate how policy contributes to the Climate Change Act target regime, and this, in turn, calls for an understanding of both the baseline carbon dioxide emissions and the actions needed to reduce emissions over time. This means that Annual Monitoring Reports should contain assessments of carbon performance against the carbon budget regime set out in the Climate Change Act. ***The Section 19 duty is much more powerful in decision-making than the status of the NPPF, which is guidance, not statute. Where local development plan policy which complies with the duty is challenged by objectors or a planning inspector on the grounds, for example, of viability, they must make clear how the plan would comply with the duty if the policy were to be removed.*** Whatever new policy may emerge, compliance with the legal duty on mitigation must logically mean compliance with the provisions of the target regime of the Climate Change Act.

The Environment Act 2021

The Environment Act (2021)[8] gives legislative weight to some of the key aims set out in the 25 year Environment Plan and forms a key part of post-Brexit environmental law.

Why is this relevant?

The key implication for the planning system is the requirement for development to deliver a 10% net gain in biodiversity (due to become mandatory from November 2023). Where this cannot be delivered on site, developers will be able to contribute to offsite biodiversity increase.

The Environment Act also introduces Local Nature Recovery Strategies which will cover all of England. These spatial strategies for nature have the potential to play an important role in supporting delivery of nature based measures to support climate change adaptation.

Flood and Water Management Act 2010

The Flood and Water Management Act 2010[9] addresses the threats of flooding and water scarcity. Under the Flood Risk Regulations 2009,[10] the Environment Agency is responsible for managing flood risk from main rivers, the sea, and reservoirs.

Why is this relevant?

Lead local flood authorities (LLFAs) are responsible for local sources of flood risk, in particular surface water run-off, groundwater, and ordinary

5 The third round of climate change adaptation progress reports are available at: **https://www.gov.uk/government/collections/climate-change-adaptation-reporting-third-round-reports**

6 Planning and Compulsory Purchase Act 2004. **https//www.legislation.gov.uk/ukpga/2004/5/pdfs/ukpga_20040005_en.pdf**

7 Section 19 of the 2004 Planning and Compulsory Purchase Act, as amended by Section 182 of the Planning Act 2008, states: 'Development plan documents must (taken as a whole) include policies designed to secure that the development and use of land in the local planning authority's area contribute to the mitigation of, and adaptation to, climate change.' See **https//www.legislation.gov.uk/ukpga/2008/29/section/182**

8 Environment Act 2021. **https://www.legislation.gov.uk/ukpga/2021/30/contents/enacted**

9 Flood and Water Management Act 2010. **https://www.legislation.gov.uk/ukpga/2010/29/contents**

10 Environmental Protection. The Flood Risk Regulations 2009. Statutory Instrument 2009 No. 3042. **https//www.legislation.gov.uk/uksi/2009/3042/contents/made**

Box 4
Environmental assessment of plans and programmes

The Levelling Up and Regeneration Bill (LURB) seeks to simplify the environmental assessment framework through the introduction of Environmental Outcome Reports (EORs). However, the LURB currently lacks detail on their scope and implementation, which is due to be subject to government consultation.

Climate change mitigation and adaptation are likely to be primary assessment criteria for plans, programmes and applications that fall within the scope of any new regulations.

watercourses. LLFAs are statutory consultees on major development. Local authorities are responsible for ensuring that requirements for preliminary flood risk assessments are met.

Planning Act 2008

The Planning Act 2008[11] introduced a new planning regime for Nationally Significant Infrastructure Projects (NSIPs), including energy generation plants of capacity greater than 50 megawatts (50MW). The Westminster government has produced National Policy Statements (NPSs) to guide decisions on such projects, applications for which are decided by the Planning Inspectorate. It is important to note that in 2016 onshore wind installations above 50MW capacity were removed[12] from the NSIP regime, and such applications are now dealt with by local planning authorities, based on the NPPF and associated Ministerial statements.

Why is this relevant?

Local planning authorities need to apply aspects of the NPS series to issues such as renewable energy applications. This guide sets out below how local planning authorities should discharge the duty on local development plans to deal with climate change.

Planning and Energy Act 2008

The Planning and Energy Act 2008[13] sets out powers for local authorities to require a proportion of the energy need related to new development to be sourced in the locality of the development, through renewable or low-carbon generation. It also sets out powers for local planning authorities to set energy efficiency standards that exceed the energy requirements of Building Regulations.

Why is this relevant?

The Planning and Energy Act allows local authorities and communities to reap the benefits of local renewable energy generation and supports the adoption of renewable energy requirements, provided they are consistent with national policy. The focus of such policy can be broader than a site in order to enable area-based solutions such as district heating. It also enables local authorities to require standards for energy efficiency in new buildings beyond those in the Building Regulations. Further information on this is set out in Section 2.5.1 in this guide.

Neighbourhood Planning Act 2017

The Neighbourhood Planning Act 2017[14] strengthens the powers of neighbourhood plans, but it also creates a new legal duty on local planning authorities to set out their strategic priorities for the development and use of land in the authority's area.

Local planning authorities must address these priorities through policies in their development plans (either in local plans or Spatial Development Strategies). Paragraph 20 of the NPPF identifies the issues that should be addressed through strategic policies, which include action on climate change (see paragraph 20 of the NPPF).

Why is this relevant?

The Neighbourhood Planning Act provides an opportunity to deal with longer-term energy planning and adaptation issues at a strategic scale, which can provide a more efficient way of managing housing and energy needs. It allows for effective catchment-scale planning for flood risk and landscape-scale planning for green infrastructure.

11 Planning Act 2008. **https//www.legislation.gov.uk/ukpga/2008/29/pdfs/ukpga_20080029_en.pdf**

12 Explanatory Memorandum to the Infrastructure Planning (Onshore Wind Generating Stations) Order 2016. Statutory Instrument 2016 No. 306. **https//www.legislation.gov.uk/uksi/2016/306/pdfs/uksiem_20160306_en.pdf**

13 Planning and Energy Act 2008. **http://www.legislation.gov.uk/ukpga/2008/21/pdfs/ukpga_20080021_en.pdf**

14 Neighbourhood Planning Act 2017. **http://www.legislation.gov.uk/ukpga/2017/20/pdfs/ukpga_20170020_en.pdf**

The major risk is that following the 2018 version of the NPPF's removal of the policy presumption that there will be a local development plan, some local authorities may choose not to prepare one, and so will lose the detailed policy necessary to deliver effective adaptation and mitigation.

2.1.2 The policy context – key documents

National Planning Policy Framework

The NPPF[15] sets out the key national planning priorities for England. First published in 2012, it was most recently updated in 2021. It is non-statutory guidance, but is a powerful material consideration in plan-making and development management decisions. The NPPF is accompanied by online Planning Practice Guidance.

Paragraph 152 of the NPPF underlines that the planning system should support the transition to a low-carbon future in a changing climate, taking full account of flood risk and coastal change. Paragraph 153, footnote 53 makes clear that local planning authorities are expected to adopt proactive strategies to mitigate and adapt to climate change, in line with the Climate Change Act 2008. Since compliance with national law and policy is central to the soundness test carried out on local development plans, compliance with the Climate Change Act is a clear obligation on both the Planning Inspectorate and local planning authorities. This has the effect of making the objective of a 100% reduction in carbon dioxide emissions by 2050 clearly relevant to the discharge of the duty on planning authorities to shape policy which reduces carbon dioxide emissions. As a result, planning authorities will need a clear grasp of their areas' baseline emissions, and their policies should support 'radical' reductions in carbon dioxide emissions.

The presumption in favour of development is a key objective of the NPPF. However, the presumption does not apply to areas subject to flood risk or coastal erosion, where polices in the NPPF suggest that development should be restricted. Further information is given in Sections 3.5 and 4 of this guide.

Achieving sustainable development

Paragraph 8 of the NPPF makes clear that 'mitigating and adapting to climate change' is a core planning objective. To be in conformity with the NPPF, local development plans should reflect this principle, ensuring that planning policy clearly and comprehensively deals with climate change mitigation and adaptation. The NPPF also highlights climate change as a key part of strategic planning policy which local authorities are legally obliged to set out in their local development plans (see NPPF paragraph 20 and footnote 13).

15 *National Planning Policy Framework.* Ministry of Housing, Communities and Local Government, Jul. 2021. http://www.gov.uk/government/publications/national-planning-policy-framework--2

The importance of proportionate evidence

The NPPF supports the need for an objective and proportionate evidence base for plan-making, which underpins the approach established in Section 3.2 of this guide. In relation to both carbon dioxide emissions and key adaptation data, it may be useful to share approaches across local planning authority boundaries as part of the wider commitment to demonstrate co-operation. The NPPF stresses the importance of viability testing; this is dealt with in more detail in Section 3.2.1 of this guide.

Mitigation, renewable generation and sustainable energy use

The NPPF sets out a positive vision of local development plans securing 'radical reductions in greenhouse gas emissions' (paragraph 152). This provides an opportunity to support innovative approaches on matters that can contribute to radically reducing carbon dioxide emissions, such as energy systems and building standards. Paragraph 154 of the NPPF makes clear that this can be achieved by shaping the location and design of development and setting local requirements for building sustainably, as long as they reflect the government's policy for national technical standards. The NPPF also identifies that plans should take a proactive approach to addressing risks from overheating.

In planning for renewable energy, local authorities are encouraged to take a positive approach by identifying suitable areas for renewable energy generation and its supporting infrastructure, and by maximising the opportunities for community-led and decentralised energy production (see paragraphs 155 and 156 of the NPPF).

Onshore wind

Paragraph 158, footnote 54, of the NPPF says that:

> *'… a proposed wind energy development involving one or more turbines should not be considered acceptable unless it is in an area identified as suitable for wind energy development in the development plan; and, following consultation, it can be demonstrated that the planning impacts identified by the affected local community have been fully addressed and the proposal has their backing.'*[16]

Whether a proposal has the backing of the affected local community is a planning judgement for the local planning authority, and the courts have ruled that 'addressed' does not mean 'resolved' or 'eliminated'.[17] It is also important to note that plans can allocate areas as suitable for wind turbines and do not have to follow the more onerous route of allocating actual sites, as is sometimes mistakenly assumed.

Mitigation and transport emissions

Paragraph 104 of the NPPF says that:

> '*transport issues should be considered from the earliest stages of plan-making and development proposals, so that […] opportunities to promote walking, cycling and public transport use are identified and pursued.'*

Paragraph 105 continues:

> *'The planning system should actively manage patterns of growth in support of these objectives. Significant development should be focused on locations which are or can be made sustainable, through limiting the need to travel and offering a genuine choice of transport modes. This can help to reduce congestion and emissions, and improve air quality and public health.'*

16 NB: At the time of publication, amendments to this footnote with slightly softened wording on the obligation to demonstrate community support were under consultation.

17 The Court of Appeal considered Written Ministerial Statement HCSW42 on local planning (made by the Secretary of State for Communities and Local Government on 18 Jun 2015 – **https://www.parliament.uk/globalassets/documents/commons-vote-office/June-2015/18-June/1-DCLG-Planning.pdf**) and not the policy in the NPPF. The latter omits 'therefore', which was important to the court ('According to the Statement, a planning authority can find a proposal acceptable if they are satisfied that it has addressed the planning impacts identified by the affected local community and therefore has their backing.'). Whether the proposal has the backing of the local community now reads as a separate test and not a consequence of the assessment of impacts. See *Holder, R (on the application of) v Gedling Borough Council & Ors* [2018] EWCA Civ 214. **http://laweuro.com/?p=13384**

Adaptation

Paragraph 153 of the NPPF states that:

> *'Plans should take a proactive approach to mitigating and adapting to climate change, taking into account the long-term implications for flood risk, coastal change, water supply, biodiversity and landscapes, and the risk of overheating from rising temperatures. Policies should support appropriate measures to ensure the future resilience of communities and infrastructure to climate change impacts, such as providing space for physical protection measures, or making provision for the possible future relocation of vulnerable development and infrastructure.'*

Taken as a whole, the NPPF requires local planning authorities to have a holistic understanding of climate adaptation, ranging from flood risk to increased temperatures and heat stress. Local development plans should play a full part in building community resilience to a changing climate.

Planning Practice Guidance

The Planning Practice Guidance (PPG) online resource[18] provides vital additional and detailed guidance on aspects of the NPPF, and it is periodically updated to include interpretations of Ministerial Statements relevant to planning. The critical sections of PPG are on 'Climate change',[19] 'Renewable and low carbon energy',[20] and 'Flood risk and coastal change'.[21] Paragraph 011 of the 'Climate change' section directs planners to the Climate Change Committee[22] for further information and guidance.

Viability testing

In recent years, significant changes have been made to the viability test that is applied to plan policy and particular applications. Paragraph 002 of the PPG section on viability and plan making now says:

> *'The price paid for land is not a relevant justification for failing to accord with relevant policies in the plan.'* [23]

The detail of how this affects climate policy is set out in Section 3.2.1 of this guide.

2.2 Scotland

2.2.1 The legislative context

The Scottish Government has an entirely devolved town and country planning system, and therefore the Scottish planning system is significantly different from that in the rest of the UK.

Climate Change (Scotland) Act 2009

The Climate Change (Scotland) Act 2009[24] sets a target date for net-zero emissions of all greenhouse gases by 2045, with interim targets. The Act also created a framework for climate change adaptation.

Why is this relevant?

The outputs from the Climate Change Act 2009 provide an evidence base that can be used in identifying priorities for action and appropriate adaptation measures, and also sets a carbon reduction budget which is directly relevant to planning.

Town and Country Planning (Scotland) Act 1997

The Town and Country Planning (Scotland) Act 1997[25] makes up the main body of planning legislation for Scotland, setting out the roles of local planning authorities with regard to development practices.

18 *Planning Practice Guidance*. Department for Levelling Up, Housing and Communities and Ministry of Housing, Communities and Local Government. **http://www.gov.uk/government/collections/planning-practice-guidance**

19 'Climate change'. *Planning Practice Guidance*. Department for Levelling Up, Housing and Communities and Ministry of Housing, Communities and Local Government. **http://www.gov.uk/guidance/climate-change**

20 'Renewable and low carbon energy'. *Planning Practice Guidance*. Department for Levelling Up, Housing and Communities and Ministry of Housing, Communities and Local Government. **http://www.gov.uk/guidance/renewable-and-low-carbon-energy**

21 'Flood risk and coastal change'. *Planning Practice Guidance*. Department for Levelling Up, Housing and Communities and Ministry of Housing, Communities and Local Government. **http://www.gov.uk/guidance/flood-risk-and-coastal-change**

22 See the Climate Change Committee website, at **http://www.theccc.org.uk/**

23 'Viability'. *Planning Practice Guidance*. Department for Levelling Up, Housing and Communities and Ministry of Housing, Communities and Local Government. Para. 002, Reference ID: 10-002-20190509, Revision date: 9 May 2019. **http://www.gov.uk/guidance/viability**

24 Climate Change (Scotland) Act 2009. **http://www.legislation.gov.uk/asp/2009/12/contents**

25 Town and Country Planning (Scotland) Act 1997. **http://www.legislation.gov.uk/ukpga/1997/8/contents**

Why is this relevant?

The Act requires the Scottish National Planning Framework (NPF)[26] to set an objective that local development plans should contribute to sustainable development. The Act, as amended, also requires local planning authorities to include policies in local development plans to reduce carbon emissions to meet the targets laid out in the Climate Change (Scotland) Act 2009, and places a legal duty on plan-making to help mitigate and adapt to climate change.

Planning (Scotland) Act 2019

The Planning (Scotland) Act 2019[27] sets out the main local planning framework for Scotland.

Why is this relevant?

The Planning (Scotland) Act places a duty on plan-makers to help mitigate and adapt to climate change, with specific reference, under the purpose of planning, to 'anything which contributes to sustainable development' as being in the public interest. It requires local development frameworks to adhere to the Climate Change (Scotland) Act 2009 and work towards the emissions reduction targets set out in the Act and its 2019 amendments. The Act also amended the assessment of environmental effects section of the Town and Country Planning (Scotland) Act 1997 to give regard to development's effects on biodiversity.

Climate Change (Emissions Reduction Targets) (Scotland) Act 2019

The Climate Change (Emissions Reduction Targets) (Scotland) Act 2019[28] sets the target to reduce Scotland's greenhouse gas emissions to net zero by 2045.

Why is this relevant?

Local planning authorities are required to comply with the guidelines set out in the amended Climate Change (Scotland) Act 2009 to reduce emissions to net zero by 2045 and to report their progress in reaching these goals, including carbon budgeting. The Act legally mandates interim targets such as a 75% reduction in emissions by 2030, with an outlined ten-year carbon budget to the year 2040.

The Act also requires local planning authorities to include policies in their local development plans aimed at avoiding increased greenhouse gas emissions through improved design and supporting the development of low- and zero-carbon energy in all new developments.

Flood Risk Management (Scotland) Act 2009

The Flood Risk Management (Scotland) Act 2009[29] outlines the roles and responsibilities of public bodies in addressing the risk of flooding.

26 *Ambition, Opportunity, Place. Scotland's Third National Planning Framework.* Scottish Government, Jun. 2014. http://www.gov.scot/publications/national-planning-framework-3/

27 Planning (Scotland) Act 2019. http://www.legislation.gov.uk/asp/2019/13/contents

28 Climate Change (Emissions Reduction Targets) (Scotland) Act 2019. http://www.legislation.gov.uk/asp/2019/15/enacted

29 Flood Risk Management (Scotland) Act 2009. http://www.legislation.gov.uk/asp/2009/6

Why is this relevant?

Under the regulations in the Flood Risk Management (Scotland) Act, the Scottish Environment Protection Agency (SEPA), Scottish Water and local authorities are all tasked with managing flood risk from rivers, the sea, and sewage systems. SEPA is responsible for co-ordinating flood protection strategies alongside local authorities, to ensure local accountability and the delivery of flood protection schemes.

2.2.2 The policy context – key documents

Scottish Planning Policy

Scottish Planning Policy (SPP)[30] sets out national priorities for development and the use of land, and lays out how planning matters should be addressed by local authorities across the country. It is non-statutory guidance and exists as a statement of Ministers' priorities. A key required outcome set out in SPP is 'Outcome 2: A low carbon place – reducing our emissions and adapting to climate change'. Paragraph 19 states that:

> *'By seizing opportunities to encourage mitigation and adaptation measures, planning can support the transformational change required to meet emission reduction targets and influence climate change.'*

National Planning Framework

The National Planning Framework (NPF)[31] is the long-term strategy for Scotland, outlining the national planning priorities for the Scottish Government. Statutory development plans must have regard to the NPF, and the NPF makes explicit reference to a low-carbon future for Scotland, setting out a vision of 'high quality, vibrant and sustainable places' in which 'our built environment is more energy efficient'.

Explicit reference is made to both resilience and mitigation as spatial priorities. Section 3 outlines the importance of planning in supporting a low-carbon future, with reference to renewable infrastructure to support mitigation, while Section 4 highlights the need for infrastructure to 'change to adapt to the impacts of climate change', taking into account resilience issues such as 'water management and flooding'.

A revised National Planning Framework (NPF4) for Scotland was approved by Scottish Parliament in January 2023, and is on course for adoption in February 2023.

The revised framework places increased emphasis on low-carbon development and sustainability and includes an overarching policy principle that planning decisions will give considerable weight to the climate and nature emergencies.[32]

Once adopted the fourth iteration of the NPF will incorporate Scottish Planning Policy and combine both into a statutory document that encompasses all Scottish planning policy.

Climate Change Plan

The 2018-2032 Climate Change Plan[33] lays out the Scottish Government's pathway to deliver the targets set by the Climate Change Act 2019, and how it will support a green recovery. The plan includes a road map for a co-ordinated, cross-cutting and systems-based approach to reducing greenhouse gas emissions, with themed sections on a whole-system energy approach, land use and nature-based solutions, the circular economy, transport demand, the planning system and NPF4, and wellbeing and national outcomes. It also includes policies and proposals for specific sectors, including electricity, buildings, transport, industry, waste and the circular economy, land use change and forestry, agriculture, and negative emissions technologies.

30 *Scottish Planning Policy*. Scottish Government, revised Dec. 2020. http://www.gov.scot/binaries/content/documents/govscot/publications/factsheet/2021/05/transport-scotland-core-documents/documents/policy/scottish-planning-policy-spp/scottish-planning-policy-spp/govscot%3Adocument/scottish-planning-policy.pdf

31 *Ambition, Opportunity, Place. Scotland's Third National Planning Framework*. Scottish Government, Jun. 2014. http://www.gov.scot/publications/national-planning-framework-3/

32 *National Planning Framework 4: Revised draft*. Scottish Government. November 2022. https://www.gov.scot/publications/national-planning-framework-4-revised-draft/

33 *Update to the Climate Change Plan 2018-2032: Securing a Green Recovery on a Path to Net Zero*. Scottish Government, Dec. 2020. http://www.gov.scot/publications/securing-green-recovery-path-net-zero-update-climate-change-plan-20182032/

2.3 Wales

2.3.1 The legislative context

Wales has a strong legislative framework, set out through the Active Travel (Wales) Act 2013, the Planning (Wales) Act 2015, the Well-being of Future Generations (Wales) Act 2015, and the Environment (Wales) Act 2016. Together, they provide a foundation to address climate change, sustainable development and wellbeing from national through to local levels.

Active Travel (Wales) Act 2013

The Active Travel (Wales) Act 2013[34] provides the framework for improving the provision of infrastructure and encouraging walking and cycling.

Why is this relevant?

Among the core requirements of the Active Travel (Wales) Act is the obligation for 'Welsh Ministers and local authorities to exercise their functions under the Act so as to promote active travel journeys and secure new and improved active travel routes and related facilities', as well as the requirement that they should 'take reasonable steps to enhance the provision made for walkers and cyclists and to have regard to the needs of walkers and cyclists in the exercise of certain other functions'. It requires local authorities to produce active travel maps setting out existing and future routes, for agreement by the Welsh Government.

Planning (Wales) Act 2015

The Planning (Wales) Act 2015[35] makes provision for national, strategic and local planning in Wales.

Why is this relevant?

The development plans at a national level (the National Plan[36]) and strategic/regional level (strategic development plans) enabled by the Planning (Wales) Act can be used to strengthen planning policy on climate change.

Well-being of Future Generations (Wales) Act 2015

The Well-being of Future Generations Act (Wales) 2015[37] aims to improve the social, economic, environmental and cultural wellbeing of the people of Wales. The Act sets out seven wellbeing goals which public bodies must work to achieve:

- *A prosperous Wales'*;
- *A resilient Wales'*;
- *A more equal Wales'*;
- *A healthier Wales'*;
- *'A Wales of cohesive communities'*;
- *A Wales of vibrant culture and thriving Welsh language'*; and
- *A globally responsible Wales'*.[38]

34 Active Travel (Wales) Act 2013. https://www.legislation.gov.uk/anaw/2013/7/contents/enacted
35 Planning (Wales) Act 2015. https://www.legislation.gov.uk/anaw/2015/4/contents/enacted
36 *Future Wales: The National Plan 2040*. Welsh Government, Feb. 2021. http://gov.wales/future-wales-national-plan-2040-0
37 Well-being of Future Generations Act (Wales) 2015. http://www.legislation.gov.uk/anaw/2015/2/contents
38 *Well-being of Future Generations Act (Wales) 2015*. Future Generations Commissioner for Wales, 2021. http://www.futuregenerations.wales/about-us/future-generations-act/

Why is this relevant?

The Well-being of Future Generations (Wales) Act puts a duty on public bodies to consider the impact of their decisions, to work better with communities and each other, and to 'prevent persistent problems such as poverty, health inequalities and climate change'.[39]

Environment (Wales) Act 2016

The Environment (Wales) Act 2016[40] sets out requirements for the sustainable management of Wales' natural resources, which will help to address the impacts of climate change.

Why is this relevant?

The Environment (Wales) Act places a duty on Welsh Ministers to set carbon budgets and targets for reducing greenhouse gas emissions.

2.3.2 The policy context – key documents

In 2021, transport, planning, housing and energy were brought together under a Minister for Climate Change. The new Welsh Government published a Programme for Government which pledged to embed its 'response to the climate and nature emergency in everything we do'.

Prosperity for All: A Low Carbon Wales

In April 2019 the Senedd Cymru / Welsh Parliament became the first parliament in the world to declare a climate emergency.[41] The Prosperity for All: A Low Carbon Wales[42] collection of policies and proposals sets out policies and proposals to meet the 2020 carbon budgets and emissions reduction targets.

Prosperity for All: A Climate Conscious Wales

Prosperity for All: A Climate Conscious Wales[43] sets out how Wales will adapt to climate change between 2020 and 2025. It also aims to influence stakeholders in Wales to take action by raising awareness of climate adaptation and sharing knowledge and best practice.

Llwybr Newydd: The Wales Transport Strategy 2021

The Wales Transport Strategy 2021[44] has been significantly shaped by the need to transform the transport system to reduce greenhouse emissions to net zero by 2050. The strategy sets out three priorities for the future of transport in Wales:

- ***Reducing the need to travel:*** The planning system has a crucial role in designing places so that communities can readily access services without needing to rely on cars.
- ***Providing accessible, sustainable and efficient transport:*** Investment is needed in transport services that are easy for people to use, and the transport infrastructure must be able to support those services. Where new transport infrastructure is needed, a sustainable transport hierarchy is to be followed, to give priority to travel by walking, cycling and public transport.
- ***Encouraging people to use more sustainable transport options:*** Low-carbon, sustainable transport must be made the most attractive and affordable option.

Planning Policy Wales

Planning Policy Wales (PPW),[45] updated in 2021, is the Welsh national planning policy and sets out the land use planning policies of the Welsh Government. PPW's policies on place-making set requirements for high-quality and well designed communities in which residents can easily access all the services that they need. Further guidance can be found in the Placemaking Wales Charter,[46] developed by the Welsh Government, the Design Commission for Wales and the Placemaking Wales Partnership, which promotes sustainable development principles such as sustainable locations for new development and prioritising walking, cycling, and public transport.

39 *Ibid.*

40 Environment (Wales) Act 2016. https://www.legislation.gov.uk/anaw/2016/3/contents/enacted

41 'Welsh Government makes climate emergency declaration'. Press Release. Welsh Government, 29 Apr. 2019. http://gov.wales/welsh-government-makes-climate-emergency-declaration

42 Prosperity for All: A Low Carbon Wales. Welsh Government, Jun. 2019. http://gov.wales/prosperity-all-low-carbon-wales

43 *Llwybr Newydd: the Wales Transport Strategy 2021*. Welsh Government, Mar. 2021. http://gov.wales/llwybr-newydd-wales-transport-strategy-2021

44 *Ibid.*

45 *Planning Policy Wales. Edition 11*. Welsh Government, Feb. 2021. http://gov.wales/sites/default/files/publications/2021-02/planning-policy-wales-edition-11_0.pdf

46 *Placemaking Charter*. Welsh Government, the Design Commission for Wales, and the Placemaking Wales Partnership. http://dcfw.org/placemaking/placemaking-charter/; and *Placemaking Guide*. Design Commission for Wales and the Placemaking Wales Partnership, 2020. http://dcfw.org/wp-content/themes/dcfw-child/assets/PlacemakingGuideDigitalENG.pdf

The other central pillar to Planning Policy Wales is decarbonisation: it contains policies on the promotion of active travel, ultra-low emission vehicles, promoting renewable energy developments, and restricting the extraction and use of fossil fuels (including fracking). The latest (11th) edition of PPW also embeds a whole-system 'local area energy planning' (LAEP) approach.

Future Wales: The National Plan 2040

Future Wales: The National Plan 2040[47] sets the strategic direction for planning and development in Wales over the next 20 years. With development plan status it is part of the statutory plan for determining planning applications. It gives spatial expression to long-term economic, social and environmental objectives, and sets out a key role for the planning system in Wales in facilitating clean growth and decarbonisation and in building resilience to the impacts of climate change. The National Plan seeks an integrated approach with other areas of policy, linking decisions on economic development with those on housing, climate change, energy generation, transport, and other infrastructure, and providing a spatial framework for investment.

Achieving effective integration and ensuring alignment with spatial plans at the appropriate level of the spatial hierarchy is important, including the emerging *strategic development plans* at the regional level, the well established *local development plans* within local authorities, and *place plans* for those communities which have them (non-statutory plans).

2.4 Northern Ireland

2.4.1 The legislative context

In Northern Ireland, legislation on tackling climate change has taken longer to come forward. After consideration of two Climate Change Bills through 2021, the Northern Ireland Assembly passed its first climate change legislation in June 2022.

Climate Change Act

The Climate Change Act (Northern Ireland) 2022[48] binds Northern Ireland to net-zero emissions by 2050, with interim targets for reducing greenhouse gas emissions for 2030 and 2040. The net-zero targets do not include methane, which is set to be reduced by 46%.

Why is this relevant?

This legislation brings Northern Ireland in alignment with the rest of the UK in having legally binding targets for emissions reductions. It also requires departments to produce plans for meeting emissions reductions targets, for sectors including energy, transport and infrastructure.

Planning Act (Northern Ireland) 2011

The Planning Act (Northern Ireland)[49] created a two-tier planning system by devolving planning to local planning authorities, and introduced a local development plan led system to Northern Ireland.

Why is this relevant?

Local councils now have a range of planning powers, including the preparation of local development plans, the determination of the majority of applications, and responsibility for enforcement action. They also have to produce community strategies, and the Planning Act (Northern Ireland) ties these community strategies to local development plans – making the latter the spatial interpretation of the community strategy.

47 *Future Wales: The National Plan 2040*. Welsh Government, Jul. 2020. http://gov.wales/future-wales-national-plan-2040-0
48 Climate Change Act (Northern Ireland) 2022. https://www.legislation.gov.uk/nia/2022/31/contents/enacted
49 Planning Act (Northern Ireland) 2011. http://www.legislation.gov.uk/nia/2011/25/contents

2.4.2 The policy context – key documents

In February 2019 the Climate Change Committee report *Reducing Emissions in Northern Ireland*[50] recommended emissions reductions in Northern Ireland of at least 35% compared with 1990 levels by 2030. The report stated that current policy is not enough to achieve such a reduction level and that a more joined-up approach is need across all sectors.

Regional Development Strategy 2035

The Regional Development Strategy 2035[51] is the spatial strategy of the Northern Ireland Executive, issued in 2010. It sets out a long-term plan for economic growth and sustainable development.

Why is this relevant?

The Regional Development Strategy identifies the correlation between improving the quality of the environment and achieving a better quality of life for people, and it highlights the need for Northern Ireland to play its part in reducing carbon emissions. The section on the economy includes guidance headed 'Deliver a sustainable and secure energy supply', with 'Manage housing growth to achieve sustainable patterns of residential development' and 'Reduce our carbon footprint and facilitate mitigation and adaptation to climate change whilst improving air quality' featuring in the society and environment sections, respectively. The environment section outlines the importance of planning and the environment, highlighting mitigation and adaptation measures. The Regional Development Strategy set a regional target of 60% of new homes located in appropriate 'brownfield' sites within the urban footprints of settlements greater than 5,000 population.

Strategic Planning Policy Statement for Northern Ireland

The Strategic Planning Policy Statement (SPPS)[52] sets out strategic planning policy on a range of planning issues, with the aim of furthering sustainable development and improving the wellbeing of the population of Northern Ireland. The SPPS consolidated around 20 separate social, economic, and environmental policy publications into one document, and set out the strategic direction and core planning principles to underpin delivery of the two-tier planning system with the aim of furthering sustainable development.

50 *Reducing Emissions in Northern Ireland*. Climate Change Committee, Feb. 2019.
http://www.theccc.org.uk/wp-content/uploads/2019/02/Reducing-emissions-in-Northern-Ireland-CCC.pdf

51 *Regional Development Strategy: Building a Better Future*. Department for Regional Development, Northern Ireland Executive, 2010.
http://www.infrastructure-ni.gov.uk/sites/default/files/publications/infrastructure/regional-development-strategy-2035.pdf

52 *Strategic Planning Policy Statement for Northern Ireland (SPPS): Planning for Sustainable Development*. Northern Ireland Department of the Environment, Sept. 2015.
https://www.infrastructure-ni.gov.uk/sites/default/files/publications/infrastructure/SPPS.pdf

Why is this relevant?

The Strategic Planning Policy Statement acknowledges the need to reduce emissions of greenhouse gases and respond to the impacts brought about by climate change:

> *'A key pledge of the Executive is 'to continue to work towards a reduction in greenhouse gas emissions by at least 35% on 1990 levels by 2025'. […]The planning system should therefore help to mitigate and adapt to climate change by shaping new and existing developments in ways that reduce greenhouse gas emissions and positively build community resilience to problems such as extreme heat or flood risk; […] avoiding development in areas with increased vulnerability to the effects of climate change, particularly areas at significant risk from flooding […]; promoting the use of energy efficient, micro-generating and decentralised renewable energy systems…'*

The provisions of the SPPS must be taken into account in the preparation of local development plans, and it is also material to all decisions on individual planning applications and appeals.

Northern Ireland Climate Change Adaptation Programme 2019-2024

The Northern Ireland Climate Change Adaptation Programme 2019-2024[53] – developed in collaboration with, and with input from, all Northern Ireland government departments, and informed by external stakeholder engagement – puts forward adaptation approaches and actions for 2019-2024. It sets 'key priority areas', as identified through the Northern Ireland summary of the *UK Climate Change Risk Assessment 2017 Evidence Report*,[54] in order to bring about 'a resilient Northern Ireland which will take timely and well-informed decisions to address the socio-economic and environmental impacts of climate change'.

Objectives include the development of local council strategies to increase resilience in the built and natural environment and an online platform to raise awareness of good practice climate change adaptation work across Northern Ireland.

Why is this relevant?

The Climate Change Adaptation Programme provides information about the process of adaptation planning and the tools available to guide local planning authorities through the process.

Flood risk management plans

Flood risk management plans were first produced in 2015 to comply with the requirements of the European Union Directive on managing flood risk (2007/60/EC) (the Floods Directive), as transposed to local legislation through the Water Environment (Floods Directive) Regulations (Northern Ireland) 2009.[55]

The second cycle of Northern Ireland Flood Risk Management Plans[56] (FRMP) were published in 2021 and set out measures to manage flood risk in 12 areas of potential significant flood risk up to 2027. The plans include measures that apply across regions and the whole of Northern Ireland.

Why is this relevant?

Flood risk management plans place a duty on the planning system to take into account the likely impact of climate change on the occurrence of flooding.

53 *Northern Ireland Climate Change Adaptation Programme 2019-2024*. Northern Ireland Department of Agriculture, Environment and Rural Affairs, Sept. 2019.
http://www.daera-ni.gov.uk/publications/northern-ireland-climate-change-adaptation-programme-2019-2024

54 *UK Climate Change Risk Assessment 2017: Evidence Report. Summary for Northern Ireland*. Climate Change Committee, 2016.
http://www.theccc.org.uk/uk-climate-change-risk-assessment-2017/national-summaries/northern-ireland-2/

55 The Water Environment (Floods Directive) regulations (Northern Ireland) 2009.
https://www.legislation.gov.uk/nisr/2009/376/contents/made

56 *2nd Cycle - Flood Risk Management Plan 2021-2027*. Department for Infrastructure. December 2021.
https://www.infrastructure-ni.gov.uk/publications/second-cycle-northern-ireland-flood-risk-management-plan-2021-2027

2.5 Some key lessons from applying law and policy on climate change

2.5.1 Requiring high energy performance in buildings

Across the UK, each nation has taken a different approach to requiring high energy performance in buildings, particularly with regard to more complex issues such as embodied carbon (see Box 5).

For Wales, paragraph 5.8.5 of Planning Policy Wales (Edition 11) says:

> *'Planning authorities should assess strategic sites to identify opportunities to require higher sustainable building standards, including zero carbon, in their development plan. In bringing forward standards higher than the national minimum, which is set out in Building Regulations, planning authorities should ensure the proposed approach is based on robust evidence and has taken into account the economic viability of the scheme.'* [57]

This is part of the whole-systems approach to developing plans for a low-carbon energy system advocated by the Welsh Government.[58]

In England there has been some confusion over whether local authorities can require higher energy performance standards than those set out in Building Regulations (see for example **case study PP8** on the Salt Cross Area Action Plan). This confusion arises largely from National Planning Practice Guidance on Climate Change which was updated in 2019 and anticipated the commencement of amendments made to the Planning and Energy Act 2008. A Written Ministerial Statement of 2015[59] explains that these amendments were intended to support the introduction of a zero carbon homes policy and would remove the power of local planning authorities to set higher energy efficiency standards than the Building Regulations. However, the Westminster government later abandoned the zero-carbon homes policy and amendments to the Energy Act were never bought into force.

In January 2021, central government's response to the Future Homes Standard consultation confirmed that the amendment to the Planning & Energy Act 2008 has not been commenced, and therefore local authorities' power to set energy efficiency requirements beyond the minimum standards set through the Building Regulations would be retained 'in the immediate term':

> *'The new planning reforms will clarify the longer term role of local planning authorities in determining local energy efficiency standards. To provide some certainty in the immediate term, the Government will not amend the Planning and Energy Act 2008, which means that local planning authorities will retain powers to set local energy efficiency standards for new homes.'* [60]

This position was further confirmed through the examination of the Bath & North East Somerset (B&NES) local plan in summer 2022. In response to a request from B&NES for clarification on the issue, central government confirmed that *'Plan-makers may continue to set energy efficiency standards at the local level which go beyond national Building Regulations standards if they wish.'* [61]

Both the TCPA and the RTPI (and other stakeholders) believe that local planning authorities in England are able to set standards above the building regulatory minimum. The London Energy Transformation Initiative (LETI) voluntary network of built environment professionals, has proposed an approach to achieving net zero emissions in new buildings based on the principle of setting ambitious fabric efficiency standards and then providing all heat and power renewably, on- or off-site.[62] This approach is being followed by some local authorities and is explored further in Section 3.4.4.

57 *Planning Policy Wales. Edition 11.* Welsh Government, Feb. 2021. **http://gov.wales/sites/default/files/publications/2021-02/planning-policy-wales-edition-11_0.pdf**

58 *Ibid.*

59 *Written update to Parliament: Planning update March 2015.* Ministry for Housing, Communities and Local Government, March 2015. **https://www.gov.uk/government/speeches/planning-update-march-2015**

60 *The Future Homes Standard: 2019 Consultation on Changes to Part L (Conservation of Fuel and Power) and Part F (Ventilation) of the Building Regulations for New Dwellings. Summary of Responses Received and Government Response.* Ministry of Housing, Communities and Local Government, Jan. 2021, Executive summary section (chapter 2). **http://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/956094/Government_response_to_Future_Homes_Standard_consultation.pdf**

61 *Exam 10: Note on Local Energy Efficiency Targets.* Bath & North East Somerset Council, July 2022. **https://beta.bathnes.gov.uk/local-plan-partial-update-lppu-public-examination**

62 *LETI Climate Emergency Design Guide: How New Buildings Can Meet UK Climate Change Targets.* London Energy Transformation Initiative (LETI), Jan. 2020. **https://www.leti.uk/cedg**

Local Plans are progressing on this basis. Bath & North East Somerset Council successfully adopted a plan with energy-based net-zero housing policy in January 2023. Cornwall Council's net zero buildings policies were found sound at examination and (at the time of writing) are due for adoption soon after.

The adoption of these policies provide important clarity to other local planning authorities seeking to drive innovation and action on climate change.

Both Inspectors reports also confirm that the Written Ministerial Statement of 2015 has been overtaken by events, and therefore carries limited weight in assessing the soundness of policies that go beyond national standards for energy efficiency.

Also of note are the Inspector's conclusions in respect of the rationale for Cornwall's Climate Emergency Development Plan Document, which clearly accepts the justification for a local plan contributing to accelerated action on climate change:

> *'While I acknowledge that there are still those who express scepticism, the scientific community and governments worldwide fully accept the dangers posed by climate change, and the need for urgent action to address it. In that context, it seems to me that it would be perverse to criticise the Council for attempting to do too much, too soon.'*[63]

Changes to the energy efficiency requirements for new homes were introduced through the new Part L building regulations in June 2022. These were bought in to force ahead of the full Future Homes Standard (due in 2025) and require a 31% reduction in carbon emissions compared with the previous

Box 5
Embodied carbon

Embodied carbon is the carbon associated with both building materials and the construction and maintenance of a building throughout its whole lifecycle. As building standards and regulations start to reduce the operational emissions from buildings, embodied carbon emissions can make up as much as 50% of total emissions over a building's lifetime. Despite this, there is nothing in national policy that currently requires embodied carbon emissions to be measured, let alone reduced (other than the provision for targets in the English National Model Design Code). Most embodied carbon emissions occur near the start of a building project, so local authorities have an important role to play in filling the gap left by national policy by setting their own requirements.

There are currently low levels of understanding about the embodied carbon impacts of new buildings. As a first step, it is therefore important to encourage the measurement of embodied carbon emissions, based on a consistent scope and datasets. This will help to create greater visibility of these impacts and encourage voluntary reductions in embodied carbon. However, it is expected that by 2025 there will be a consistent level of understanding on how to measure whole-life carbon, and, as such, after this date it would be recommended to require all developments to measure this and set targets for embodied carbon in line with the stretching requirements below.

It is recommended that local authorities set a requirement for all new homes as follows:

- All developments shall demonstrate actions taken to reduce embodied carbon and maximise opportunities for re-use through the provision of a circular economy statement.
- Major developments (defined as those with 10 or more dwellings or 1,000 square metres of floorspace) should calculate whole-lifecycle carbon emissions (including embodied carbon emissions) through a nationally recognised whole-lifecycle carbon methodology and should demonstrate actions taken to reduce lifecycle carbon emissions.
- Performance changes should be monitored through updated as-designed and as-built embodied carbon assessments. Developments should not only measure performance, but also submit whole-lifecycle data to public databases (such as the Built Environment Carbon Database[a]).

See **case study NZB3** on the London Plan policy approach to embodied carbon.

a See the Built Environment Carbon Database website, at https://www.becd.co.uk

63 P Griffiths: *Report to Cornwall Council*. The Planning Inspectorate, 10 January 2023. (Para. 32).

Box 6
Future Homes Standard

The Future Homes Standard is intended to deliver homes that are zero-carbon ready and reduce carbon dioxide emissions by 75-80%. As an interim measure, an uplift to Part L was introduced in June 2022 to reduce carbon emissions by 31% compared to the previous Building Regulations requirements. This will mean:

- No new homes will have fossil fuel heating.
- Homes will be 'future-proofed', with low-carbon heating and high levels of energy efficiency.
- There will be no need to retrofit these homes to enable them to become zero carbon by 2050 as the grid decarbonises.

It is expected that a consultation on the full technical specification of the Future Homes Standard will be issued in 2023. The standard will then be introduced into legislation in 2024 and implemented in 2025. While this will be an important step forward in achieving net-zero targets, there are significant limitations to the Future Homes Standard.[a] For example, it will not cover unregulated energy, embodied and whole-life carbon (see Box 5), or address operational performance and the performance gap.

a *UKGBC Response to MHCLG Consultation on the Future Homes Standard.* UK Green Building Council, Feb. 2020. http://www.ukgbc.org/news/ukgbc-responds-to-mhclg-consultation-on-the-future-homes-standard/

standard. This represents an improved baseline. Policies setting higher standards should be supported by an evidence base to demonstrate viability and feasibility. These policies apply to new dwellings only. There are no limits on standards across the non-domestic sector (schools, healthcare facilities, retail premises, industrial offices, etc.) and for 'place' (besides those typical to planning).

The UK Green Building Council (UKGBC) launched the Net Zero Whole Life Carbon Roadmap[64] for the built environment, working with a cross-industry partnership to establish a pathway to achieving net zero carbon in the UK's built environment. This includes a summary for policy makers to aid understanding of how policy can drive delivery of a net zero environment by 2050. UKGBC has also published analysis of the indicative government policy (published in its response to the Future Homes Standard consultation) against five key policy areas and highlighted where policy will need to go further in order to achieve net zero buildings[65].

This builds on the *New Homes Policy Playbook*,[66] which is designed to help local authorities drive up the sustainability of new homes. This playbook focuses on energy and carbon, mitigating overheating risk, and the cross-cutting issue of assuring performance. It supports the 31% interim uplift in Part L of the Building Regulations as a minimum standard, but coupled with a move to reporting energy use intensity (EUI), to lay the groundwork for future absolute targets. UKGBC recommends a move to energy use intensity targets as soon as possible, with absolute kilowatt-hour per square metre (kWh/m2) targets for more ambitious local authorities.

2.5.2 Deployment of new energy technologies

The UK reduced its own greenhouse gas emissions by 40% between 1990 and 2019, and much of this progress has been due to the decarbonisation of the electricity sector. Deployment of renewable electricity generation has scaled up rapidly, and renewable technologies are increasingly cost competitive. In the context of the global energy crisis and spiralling energy bills, the rationale for an accelerated transition to clean energy is incredibly strong. The World Energy Outlook 2022 highlights the essential role that clean electricity and electrification (along with energy efficiency measures) must play in cutting emissions and reducing energy costs.[67]

64 *Net Zero Whole Life Carbon Roadmap for the Built Environment.* UK Green Building Council, November 2021. https://www.ukgbc.org/ukgbc-work/net-zero-whole-life-roadmap-for-the-built-environment/

65 *Five key tests for a net zero and climate resilient Future Homes Standard.* UK Green Building Council, October 2022. https://ukgbc.s3.eu-west-2.amazonaws.com/wp-content/uploads/2022/11/08092138/UKGBC-5-Key-Tests-for-Future-Homes-Standard-Oct-2022.pdf

66 *The New Homes Policy Playbook: Driving Sustainability in New Homes – A Resource for Local Authorities.* UK Green Building Council, Feb. 2021. http://www.ukgbc.org/ukgbc-work/new-homes-policy-playbook/

67 *World Energy Outlook 2022.* International Energy Agency, Oct. 2022. https://www.iea.org/reports/world-energy-outlook-2022

The current UK decarbonisation strategy[68] relies on the electrification of heat generation and transport, and of course the total phasing out of fossil fuel electricity generation. The rapid decarbonisation of the electricity system is thus essential if the UK is to meet its carbon reduction commitments, and all communities have an overriding responsibility to increase the use and supply of renewable energy – but there real economic opportunities for local communities here, too. Within the overall emissions reduction targets, there are targets for specific sectors (for example, 40 gigawatts of offshore wind by 2030).

The transition to a net-zero economy will increase the pressure on the electricity supply, and in the short to medium term there are likely to be technical challenges associated with the variable and inflexible generation of renewable electricity. These concerns about intermittency are being addressed as the capacity of battery energy storage rapidly increases and associated costs drop, enabling renewable energy power availability to better match demand. There is also potential for new developments to flex their energy demand to closer match intermittent renewable energy supplies, using embedded energy storage, smart electric vehicle chargers, and other demand-shifting technologies – and there is a role for the planning system in enabling and encouraging the deployment of such technologies.

It is important to be aware of the rapidly changing world of renewable energy technology, but planners, too, have an important role to play in encouraging and managing the deployment of renewable energy and promoting the use of smart technologies. Planning can also restrict the demand for fossil fuels (for example by encouraging electric car use and limiting the use of gas boilers) and can also restrict consents for fossil fuel extraction and other high-carbon developments.

2.5.3 How existing local policy can be strengthened to respond to the climate crisis

The best way to introduce new effective policies on climate change is to embed them throughout the local development plan, and this is the focus of Section 3 of this guide. However, there may be situations in which a local planning authority is keen to strengthen its response to climate change mitigation and adaptation but a full review of the local development plan is not scheduled or feasible. In this case, there are four options for action:

- ***Produce design codes:*** In England, the most recent version of the National Planning Policy Framework requires local planning authorities to produce design codes. The Westminster government does not prescribe their content, although it has published a National Model Design Code and supporting guidance notes.[69] The national guidance advises consideration of standards relating to climate change, including resources, embodied carbon and whole-life carbon. The TCPA and the RTPI believe that design codes can include requirements for achieving industry standards such as Passivhaus.[70]

A joint report by the RTPI and RSPB identified how design codes can be a powerful tool in influencing net zero development, but that is dependent on an emphasis on climate and nature within design codes.[71]

- ***Conduct a partial review of the local development plan:*** This would deal only with policies that have an impact on climate change adaptation or mitigation.

- ***Produce supplementary planning guidance:*** If the local development plan contains strategic objectives and policy on climate change, it can be used as a hook to produce supplementary planning documents which set out detailed requirements on climate change.

- ***Carry out enforcement through development management:*** Progress can be made through the rigorous implementation of the development management process, based on the law and policy laid out in Section 2, to ensure that decisions take full account of climate change mitigation and adaptation.

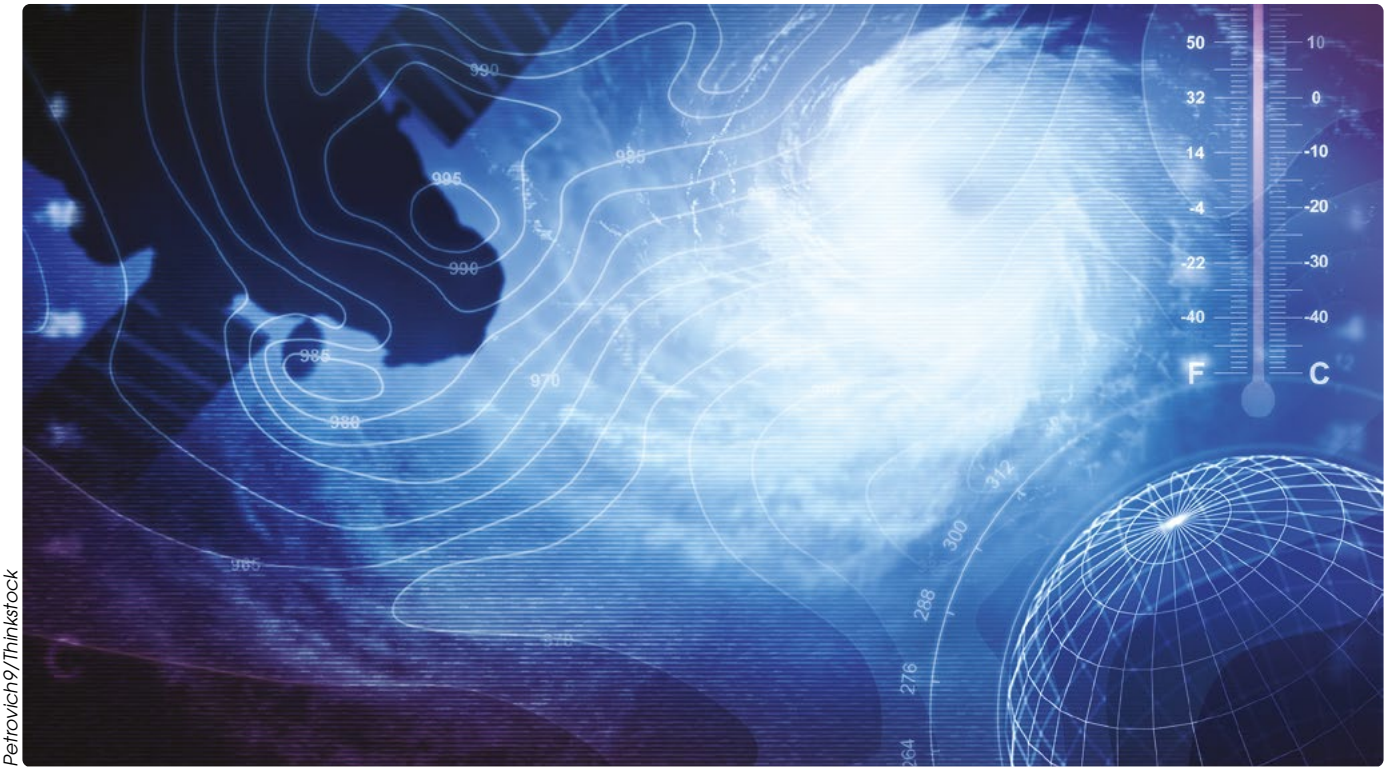
68 *Net Zero Strategy: Build Back Greener.* Department for Business, Energy and Industrial Strategy. Oct 2021. **https://www.gov.uk/government/publications/net-zero-strategy**

69 *National Model Design Code.* Ministry of Housing, Communities and Local Government, Jan. 2021. **https://www.gov.uk/government/publications/national-model-design-code**

70 See the Passivhaus Trust website, at **http://www.passivhaustrust.org.uk/**

71 *Cracking the Code: How design codes can contribute to net-zero and nature's recovery.* RTPI and RSPB, March 2022. **https://www.rtpi.org.uk/media/11054/design-codes-report-final.pdf**

section 3
plan-making



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Climate change is a strategic priority for national policy

3.1 Start with the climate crisis

Effective strategic and local development plans are vital tools in delivering a range of key solutions to the climate crisis. This section sets out a logical set of steps – from evidence-gathering to suggested policy approaches – for both mitigation and adaptation. It indicates key sources of evidence and explains how future patterns of spatial development can be designed to radically reduce carbon emissions – through, for example, the use of decentralised renewable energy systems and reductions in the need to travel. Given the critical overarching need for the planning system to support the delivery of the Sixth Carbon Budget and the net-zero target, only viable development that is 'net-zero consistent' should be included in plan policy.

New developments must also take the full range of adaptation factors into account. For example, good site selection at the plan-making stage is crucial. This section sets out criteria which can be used to assess suitability when allocating sites, considering, for example, the type of building and the intensity of use.

Climate change is a strategic priority for national policy across all parts of the UK. Action on climate change should be an integral part of the culture of plan-making and must be embedded and integrated into policy preparation. Only by treating climate change related issues as central to policy formulation will a local planning authority have effectively discharged its legal obligations described in Section 2.

3.1.1 The importance of political and corporate leadership

Effective local action on climate change requires strong and consistent political and corporate leadership to ensure that the issue is an organisational priority. A recent survey of local authorities in the UK by the TCPA and the Association for Public Sector Excellence (APSE),[72] found that 85% of respondents had declared a climate emergency and 78% of these included a specific date or target (the most mentioned date being 2030).

This can help facilitate an integrated approach to addressing climate change across all Council functions, which is particularly important. This means that all aspects of service delivery take the climate crisis into account – and that planning policy is used to support actions on green infrastructure, retrofitting historic buildings and community energy initiatives, with their multiple benefits for health and the economy.

3.1.2 Co-ordinating climate strategy

Local planning authorities will have a number of corporate responses to climate change, many of which will have direct relevance to the development plan process. Energy planning is one example of an activity that can benefit from this level of co-ordination.

The Climate Change Committee's 2021 progress report[73] highlighted the key role that local authorities play in local area energy plans. Local area energy planning was pioneered by Energy Systems Catapult to help inform and support local authorities, distribution network operators, businesses and communities in planning for a cost-effective, low-carbon transition to net-zero energy use.[74] Energy Systems Catapult has been working with Ofgem and the Centre for Sustainable Energy to develop guidance[75] to support the development of consistent, robust and transparent local area energy plans and encourage the development and application of consistent methodological approaches across industry.

Local area energy planning can support investment decisions by identifying a set of feasible decarbonisation pathways for an area, leaving space for their delivery through appropriate market or funding arrangements. It can act as an accelerator for the zero-carbon transition by increasing confidence in the 'direction of travel' for network infrastructure. Innovative concepts currently under development, such as 'smart' local energy systems,[76] can also play a role in unlocking opportunities through a better understanding of local systems and decarbonisation options.

3.1.3 The importance of community involvement

It is vital that communities are at the heart of local policy debate, so that local knowledge can be taken account of to help shape decision making.[77] Effective action on climate change should bring multiple benefits to a community, and this should be communicated and encouraged. For example, community-owned renewable energy projects can reduce carbon dioxide emissions, with direct benefits to consumers and the local economy. Many of the initiatives that can be taken to address climate change are simply 'win-win' actions for communities, and can help to shape low-carbon resilient places with high-quality design and access to the natural environment. Community-based planning[78] is an effective way of involving members of the local community and making sure that planning decisions take heed of local knowledge and expectations (see Box 7).

72 *Rising to the climate change challenge: The role of housing and planning within local councils.* Association for Public Service Excellence and TCPA. May 2022. **https://tcpa.org.uk/resources/rising-to-the-climate-change-challenge-the-role-of-housing-and-planning-within-local-councils/**

73 *Progress in Reducing Emissions: 2021 Report to Parliament*, and *Progress in Adapting to Climate Change: 2021 Report to Parliament.* Climate Change Committee, Jun. 2021. **https://www.theccc.org.uk/publication/2021-progress-report-to-parliament/**

74 See 'Local Area Energy Planning: Supporting clean growth and low carbon transition'. Webpage. Energy Systems Catapult, Dec. 2018. **https://es.catapult.org.uk/reports/local-area-energy-planning/**

75 *Local Area Energy Planning: The Method.* Final Review Draft. Centre for Sustainable Energy and Energy Systems Catapult, for Ofgem, Jul. 2020. **https://es.catapult.org.uk/reports/local-area-energy-planning-the-method/**

76 See 'What are Smart Local Energy Systems (SLES) & how can they support the UK's transition to Net Zero?'. Webpage. Energy Systems Catapult. **https://es.catapult.org.uk/news/what-are-smart-local-energy-systems-sles-how-can-they-support-the-uks-transition-to-net-zero/**

77 *Planning for a Healthy Environment – Good Practice Guidance for Green Infrastructure and Biodiversity.* TCPA and The Wildlife Trusts. TCPA, Jul. 2012. **https://www.tcpa.org.uk/Handlers/Download.ashx?IDMF=34c44ebf-e1be-4147-be7d-89aaf174c3ea**

78 Neighbourhood plans in England (see Box 7), local place plans in Scotland, place plans in Wales, and community plans in Northern Ireland

Planning for the climate crisis – six basic steps

1. **Unlock the potential of the local development plan as the heart of local climate solutions. Ensure that the community is at the heart of the process and that the plan is seen as a key corporate priority in responding to the climate crisis.**
2. **Understand the legal and policy obligations for action on climate change, including the Sixth Carbon Budget and how these national targets apply to actions that can be controlled or influenced locally.**
3. **Ensure that there is comprehensive relevant evidence on climate mitigation, and use that evidence to set local carbon reduction targets for the local development plan.**

   The NPPF is clear that development should be safe from flood risk and coastal change for its lifetime (see paragraphs 159 and 172), so evidence on climate adaptation should reflect these time horizons (planning practice guidance defines development lifetimes as 75 years for non-residential and at least 100 years for residential development). Bear in mind that the science is dynamic. Make full use of existing online tools and knowledge partnerships, and seize the digital opportunity to make this evidence accessible to the public.
4. **Use this evidence to assess options and then develop policies that are consistent with achieving carbon reduction targets. For adaptation, it is useful to apply rules of thumb such as credible worst-case scenarios for climate impacts to help communicate the future that must be planned for (see Section 3.2.2 of this guide).**
5. **Use established assessment frameworks to monitor the effectiveness of policy wherever possible, and engage knowledge partners such as higher education institutions to support the analysis of policy impacts. Report progress at least annually as part of the Annual Monitoring Report process.**
6. **Ensure that whenever a decision is made contrary to plan policy the climate impacts of that decision are fully assessed. Development should not be approved if it would increase risks to the community or exceed established carbon budgets.**

Fig. 2 Six basic steps in planning for the climate crisis

Box 7
Neighbourhood planning in England

The Westminster government has put increased emphasis on the value of the neighbourhood planning process as a way for communities to express their aspirations for future development. Two issues of particular significance have arisen in neighbourhood planning practice. To date, most neighbourhood plans have not included policy on climate change mitigation, and it appears that some that have tried have encountered difficulties in navigating the viability test and through the perceived limitations in policy for energy efficiency and building fabric. However, there are some examples of neighbourhood plans that have tried to address climate change and energy considerations and have demonstrated the huge potential of neighbourhood planning to add to, and reinforce, climate change policy at a local level.

The problems encountered to date should not undermine an appreciation of the positive opportunity that neighbourhood plans present for dialogue with communities on climate change. The Centre for Sustainable Energy (CSE) has produced useful guidance on how communities can make the most of the renewable energy opportunity.[a] The Environment Agency has contributed to the development of a neighbourhood planning toolkit hosted on the Locality website which provides advice to neighbourhood planning groups about statutory consultees and how they can make plans resilient to the impacts of climate change.[b] The Landscape Institute has produced information on design and green infrastructure for neighbourhood plans.[c]

a *Neighbourhood Planning in a Climate Emergency: A Guide to Policy Writing and Community Engagement 2020 for Low-Carbon Neighbourhood Plans.* Centre for Sustainable Energy, Feb. 2020. http://www.cse.org.uk/downloads/reports-and-publications/policy/planning/renewables/neighbourhood-planning-in-a-climate-emergency-feb-2020.pdf

b *Neighbourhood Planning and the Environment.* Environment Agency, Forestry Commission, Historic England, and Natural England, for Locality. http://neighbourhoodplanning.org/toolkits-and-guidance/consider-environment-neighbourhood-plans/

c *Neighbourhood Planning.* Technical Information Note 04/2016. Landscape Institute, Apr.2016. https://www.landscapeinstitute.org/technical-resource/neighbourhood-planning/

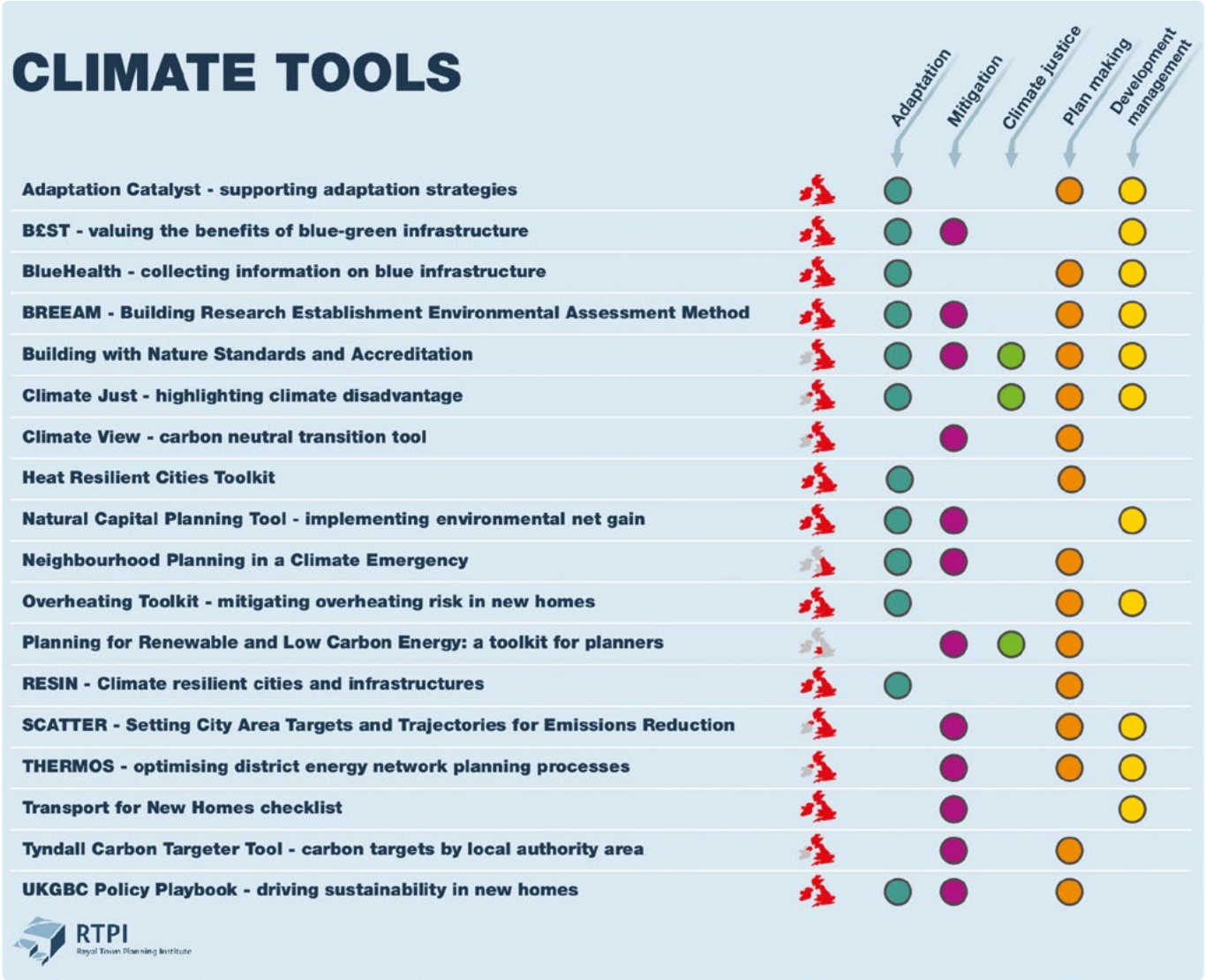


Fig. 3 Climate tools for planners

Source: RTPI. See the RTPI's Climate Tool Directory, at https://rtpilearn.org.uk/course/view.php?id=140 (account registration required) – and also 'RTPI launches 'invaluable' guide to climate action tools'. News Release. Royal Town Planning Institute, 18 Sept. 2020. https://www.rtpi.org.uk/news/2020/september/rtpi-launches-invaluable-guide-to-climate-action-tools/

3.1.4 Getting started

Responding to the climate challenge should be the overriding objective of a local development plan, and this objective should be embedded in all its policy requirements. Six basic steps in planning for the crisis are outlined in Fig. 2 on page 26.

3.2 The evidence base for plan-making

The strength and effectiveness of local development plan policy and the successful examination of a draft local development plan by the respective examining body depend on a credible and proportionate evidence base which directly supports the policy choices made as a response to local needs.

Important elements of climate change evidence are available through up-to-date strategic flood risk assessments or through national data on carbon dioxide emissions and heat networks or the work of the Climate Change Committee. There are a number of online tools which can help local planning authorities to work out their local carbon budgets, such as the

Box 8

The viability test in England

In England, Planning Practice Guidance on viability states that:.

'It is the responsibility of site promoters to engage in plan making, take into account any costs including their own profit expectations and risks, and ensure that proposals for development are policy compliant. Policy compliant means development which fully complies with up to date plan policies. A decision maker can give appropriate weight to emerging policies. The price paid for land is not a relevant justification for failing to accord with relevant policies in the plan. Landowners and site purchasers should consider this when agreeing land transactions.' [a]

This brings an added measure of certainty to viability assessments, both through greater openness and by setting out the key inputs for land valuation, including the use of existing-use value plus a premium for landowners. Room for challenge remains in what this 'plus' factor should be, but the work of a number of local authorities and the impact of recent case law have demonstrated that ambitious local development plan policy can be defended as long as it is evidenced and reasonable.

a 'Viability'. *Planning Practice Guidance*. Department for Levelling Up, Housing and Communities and Ministry of Housing, Communities and Local Government. Para. 002, Ref. ID: 10-002-20190509, Revision date: 9 May 2019. http://www.gov.uk/guidance/viability

Tyndall Centre Carbon Budget Tool.[79] The RTPI's Climate Tools for planners online resource (see Fig. 3) outlines climate adaptation and mitigation tools that can be used in development management and plan-making.[80] The Climate Just mapping resource[81] can help to consolidate map-based data on risks and vulnerabilities to illustrate potential impacts on communities and communicate them to wider audiences. On some aspects, such as the risk of future heat stress to particular communities, local planning authorities will need to gather their own evidence. Partnering or joint commissioning with universities can be a cost-effective way to access high-quality data and secure research evidence.

Understanding the transport impacts of proposed development is also key to ensuring the local plan reduces the carbon emissions arising from new development. A transport assessment should consider existing transport issues and potential for addressing these, including carbon reduction.[82]

It is important to recognise that evidence on climate change is dynamic. For example, risk and vulnerability will change over time in relation to flood plains or sea level rise. It is vital that planners are aware of regular updates of the climate science, such as the climate change allowances (also known as flood risk allowances) issued by the Environment Agency.

3.2.1 Evidence on viability

Many of the polices set out in this guide can yield tangible and long-term cost savings to individuals and to the insurance industry, as well as real gains to the economy through investment in renewable energy. Where there are requirements for the assessment of development viability for plan-making (for example in English national policy – see Box 8), it is vital that such long-term benefits are fully represented in any assessment. Where there are costs to the private sector in ensuring both radical reductions in carbon and long-term resilience, they should be reflected in reduced land prices.

Evidence on viability should be transparent and accessible to all parts of the community, so that local aspirations can be accurately judged against development values over the long term. This means insisting on open-book accounting and ensuring that long-term income streams, such as renewable energy generation, are recognised as a positive economic benefit and therefore not recorded as costs in viability valuations.

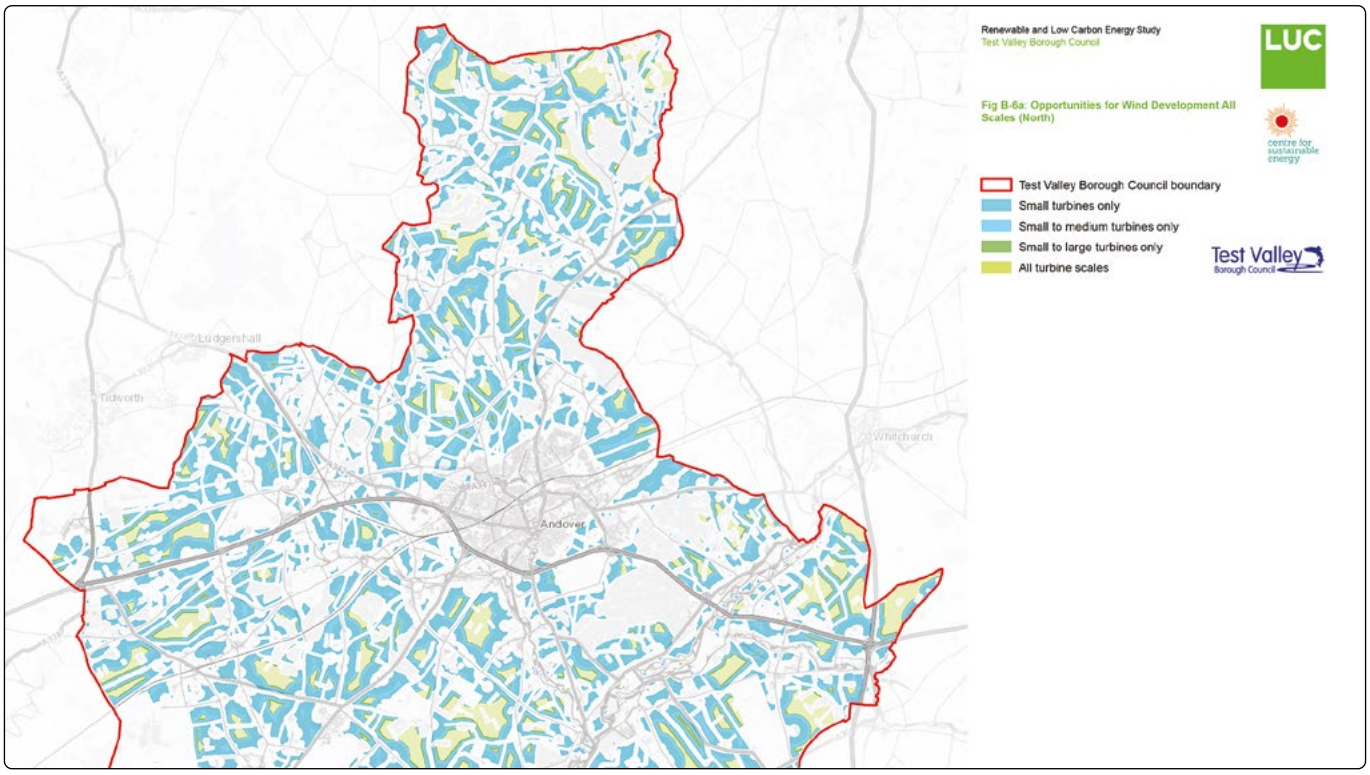
If local development plan policy is challenged on the basis of viability, local planning authorities must ensure that the plan would still comply with the legal duty to address climate change if the climate-related policy were to be removed.

79 See 'Tyndall Centre Carbon Budget Tool'. Webpage. Manchester University Tyndall Centre. **https://carbonbudget.manchester.ac.uk/reports/**

80 See the RTPI's Climate Tool Directory, at **https://rtpilearn.org.uk/course/view.php?id=140** (account registration required)

81 See the Climate Just website, at **https://www.climatejust.org.uk/**

82 *Transport evidence bases in plan making and decision taking.* Department for Levelling Up, Housing and Communities and Ministry of Housing, Communities & Local Government. March 2015. **https://www.gov.uk/guidance/transport-evidence-bases-in-plan-making-and-decision-taking**



Map of wind potential in Test Valley

Source: Test Valley Borough Council/LUC. © Contains Ordnance Survey data Crown copyright abd database right 2020

3.2.2 Good practice on evidence-gathering for local development plans

It is recommended that local authorities adhere to the following good practice in evidence-gathering for their local development plans:

- ***Joint working across local planning authority boundaries can be the most robust and cost-efficient way to prepare the evidence base for plan-making:*** In preparing the evidence base for plan-making, the most robust and cost-effective evidence base on wider-than-local issues might be provided by joint working across local planning authority boundaries through joint local plans or strategic plans or cross-boundary co-operation.

  Strategic scale evidence may also provide understanding at the geographic scale required to address climate change effectively (for example river catchment areas, travel to work and housing market areas).

  Such co-operation will need to engage a wide group of stakeholders with relevant data and investment power. These stakeholders might include environment agencies, national government agencies, local economic partnerships, water companies, and knowledge partners such as universities.

- ***Fairness and justice should be at the heart of planning for climate change, based on an acknowledgement that climate change impacts those on the lowest incomes the most:*** Policy-makers must consider not only how and why levels of vulnerability to climate vary, but also how their policies benefit or disadvantage particular groups. In many areas of the UK there is evidence that more socially disadvantaged places and communities are disproportionately more vulnerable to, and less likely to be able to cope with and recover from, the impacts of climate change. This leads to a vicious circle in which the impacts of climate change worsen poverty, and that increased poverty in turn increases vulnerability to climate change impacts. Policy decisions must focus on breaking this cycle and deliberately address the issue of climate justice. The Climate Just resources[83] provide a way of mapping the relationship between social exclusion and the impacts of climate change. Further information on incorporating the concept of climate justice into

83 See 'Resources', Webpage. Climate Just. https://www.climatejust.org.uk/resources

planning is given in the RTPI's *Five Reasons for Climate Justice in Spatial Planning*.[84]

See **case study CA8** on Bristol's use of data to produce a Heat Vulnerability Index for an example of using data with a climate justice lens to inform strategies to reduce heat risk.

Evidence for climate change mitigation

- ***An understanding of baseline carbon dioxide emissions is key for successful mitigation policy:*** The key evidence for successful mitigation policy relates to baseline carbon dioxide emissions and a good local understanding of trends.[85] The most important factor is to ensure that staff have the opportunity to participate in training on carbon literacy provided by organisations such as the Association for Public Service Excellence (APSE).[86] National datasets for carbon dioxide emissions are held by the Department for Energy Security and Net Zero, which produces disaggregated figures for local authorities in the UK.[87] Evidence on assessing policy options – for example on differing renewable energy options – can be obtained from the department.

- ***The supply of and demand for renewable and low-carbon energy must be mapped out for potential zero-carbon communities:*** Understanding the potential for the supply of and demand for renewable and low-carbon energy in a local area is an essential starting point in considering opportunities to move towards low-carbon communities (see Section 3.1.2 for information on local area energy planning). A range of methodologies are available to quantify and map renewable energy resources in a particular area. The objective should be to identify sustainable energy resources by considering both technical restraints and environmental restrictions (for an example, see **case study ER1**.) For example, for onshore wind this would mean considering where suitable wind speeds are attained and where there are environmental criteria such as constraints imposed by designated sites and species. Clearly identifying and mapping an area's potential renewable energy resources helps to ensure that a strategic approach is taken, enables effective community-led spatial planning, and can help to facilitate community energy projects. Sending clear signals to developers about where renewable energy would be most appropriate can accelerate deployment and avoid conflict. Both communities and energy providers must be integral to this process, so that decisions are realistic, viable and legitimate, with bottom-up community engagement on renewable energy planning undertaken from an early stage to secure public support.

- ***Opportunities for renewable and decentralised energy should be assessed at an early stage:*** It is recommended that local authorities assess their area for opportunities for renewable and decentralised energy. The assessment could focus on opportunities at a scale that can supply more than an individual building, and could include up-to-date mapping of heat demand and possible sources of supply. Local planning authorities can assist this process by looking for opportunities to secure:
  - decentralised energy to meet the needs of new development;
  - greater integration of waste management with the provision of decentralised energy;
  - co-location of potential heat suppliers and users;
  - the supply of heat through district heating networks; and
  - the use of renewable and low-carbon energy in public buildings, which can act as a critical mass for district heating systems.

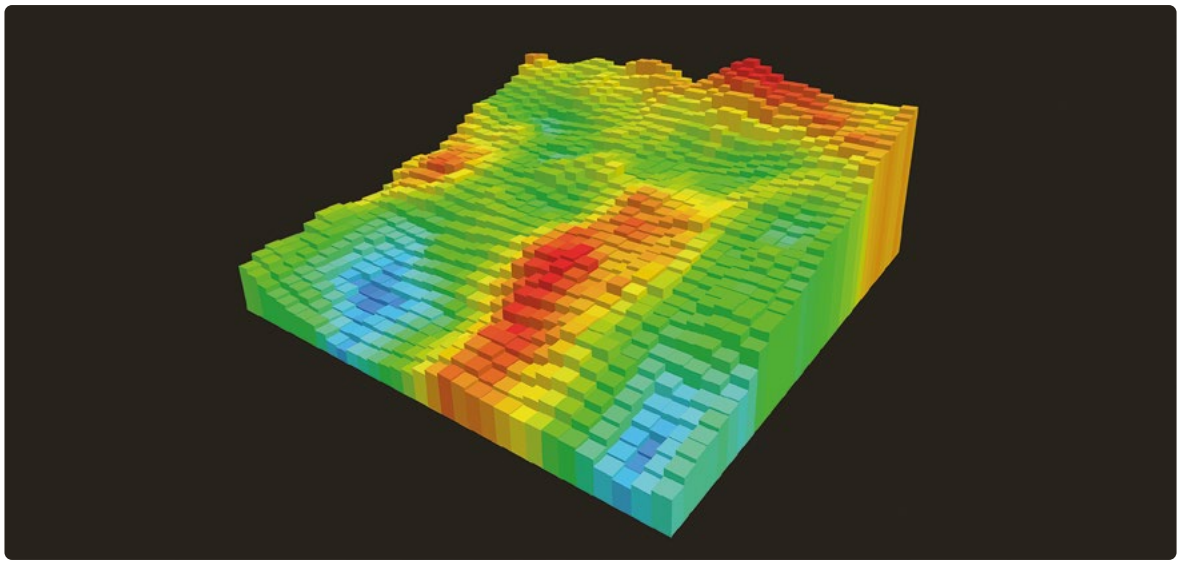
- ***Opportunities for increasing the proportion of trips made through sustainable transport should be understood and pursued:*** Local authorities should assess their area for opportunities to reduce the need to travel and increase the share of trips made by sustainable travel by taking measures to make sustainable choices more attractive than private car trips for most journeys

84 *Five Reasons for Climate Justice in Spatial Planning*. RTPI, Jan. 2020. https://www.rtpi.org.uk/research/2020/january/five-reasons-for-climate-justice-in-spatial-planning/

85 A good understanding of the way that a local authority area currently contributes to carbon sequestration and storage can, for example, provide a valuable perspective and baseline to help guide sequestration and storage action on biodiversity net gain and sustainable flood management

86 See 'Carbon literacy for local authorities'. Training course webpage. APSE (Association for Public Service Excellence). https://www.apse.org.uk/apse/index.cfm/training/online-courses/carbon-literacy-for-local-authorities/

87 See 'UK local authority and regional carbon dioxide emissions national statistics: 2005 to 2019'. Webpage. Department for Business, Energy and Industrial Strategy. https://data.gov.uk/dataset/723c243d-2f1a-4d27-8b61-cdb93e5b10ff/uk-local-authority-and-regional-carbon-dioxide-emissions-national-statistics-2005-to-2019



Heat map – data on overheating is a vital part of the evidence base

(for example any route within a development should always seek to be quicker, easier and cheaper by sustainable modes than by the private car). The hierarchy of decarbonisation recommended in the RTPI's *Net Zero Transport: The Role of Spatial Planning and Place-Based Solutions*[88] should be followed.

Assessment of the transport impacts of locating development in different places should inform the spatial strategy, and opportunities to connect to existing and planned sustainable transport routes should be a key principle in understanding the potential for development.

The Chartered Institution of Highways and Transportation's (CIHT's) *Better Planning, Better Transport, Better Places*[89] contains guidance on how to encourage trip-making by sustainable transport modes in both urban and rural contexts.

Decisions taken at every stage of the planning process should be led by the latest available data and supplemented with new data collection and analysis wherever necessary to illustrate key decisions.

Evidence for climate change adaptation

- ***Use should be made of the wide range of data on flood-related climate impacts:*** Existing data contained in strategic flood risk assessments[90] and other assessments of future climate impacts[91] form the foundation of a robust evidence base. Local authorities may also obtain local flood risk modelling from the lead local flood authority and draw on relevant local evidence including:
  - flood risk management plans;[92]
  - shoreline management plans;[93]
  - coastal erosion data;[94]

88 *Net Zero Transport: The Role of Spatial Planning and Place-Based Solutions.* RTPI, Jan. 2021. **https://www.rtpi.org.uk/research/2020/june/net-zero-transport-the-role-of-spatial-planning-and-place-based-solutions/**

89 *Better Planning, Better Transport, Better Places.* Chartered Institution of Highways and Transportation, Aug. 2019. **https://www.ciht.org.uk/knowledge-resource-centre/resources/better-planning-better-transport-better-places/**

90 In England, the Environment Agency's *How to Prepare a Strategic Flood Risk Assessment (SFRA)* guidance (at **https://www.gov.uk/guidance/local-planning-authorities-strategic-flood-risk-assessment**) provides advice on how to produce an SFRA and the triggers that mean an SFRA may need to be updated (for example when the Environment Agency's Flood Risk Assessments: Climate Change Allowances guidance (at **https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances**) is updated, as this might significantly change the level of identified risk and vulnerability of planned new development to flooding

91 In England, the Environment Agency provides a number of flood risk modelling 'products' (at **https://www.gov.uk/guidance/flood-risk-assessment-for-planning-applications#get-information-to-complete-an-assessment**) that can help in assessing current and future flood risk. In Wales, a new TAN 15 and Flood Map for Planning will replace the current TAN 14, TAN 15 and Development Advice Map on 1 December 2021.

92 See 'Flood risk management plans (FRMPs): 2015-2021'. Webpage. Environment Agency. **https://www.gov.uk/government/collections/flood-risk-management-plans-frmps-2015-to-2021**

93 See 'Shoreline management plans (SMPs)'. Webpages. Environment Agency's. **https://www.gov.uk/government/publications/shoreline-management-plans-smps/shoreline-management-plans-smps**

94 See 'Flood and Coastal Erosion Risk Management Investment Programme 2015-2021'. Webpages. Environment Agency. **https://data.gov.uk/dataset/1374b3a9-79c9-46c2-a5e7-0f8c4eaa5289/flood-and-coastal-erosion-risk-management-investment-programme-2015-2021**

- surface water management plans (drawn up by lead local flood authorities);[95]
- natural flood management maps;[96]
- drainage and waste water management plans (drawn up by water companies);
- river basin management plans;[97] and
- local water cycle studies.[98]

Local planning authorities may also have regard to the Climate Change Risk Assessment contained in each nation's National Adaptation Programme.

- ***Evidence of overheating is a vital part of the evidence base:*** There is a large amount of evidence on the negative impacts of heat stress on public health, the health inequality issues that arise, and the design benefits of, for example, green infrastructure.[99] The third Climate Change Risk Assessment (CCRA3) provides a general overview of impact scenarios and the risks from increasing temperatures. However, the urban heat island effect can have highly localised consequences, and so local analysis is important and could be the subject of a knowledge partnership with a higher education body. Where this detailed evidence is not available, there are a series on 'no-regret' urban design measures that should be incorporated into design codes/guides (see, for example, **case study CA1** on Camden Council and the Good Homes Alliance's *Overheating in New Homes* tool and guidance[100]). CoolTowns, an Interreg 2 Seas project in which GreenBlue Urban was a partner, explored the potential for urban tree planting to reduce the impact of increasing summer temperatures, including selecting tree species especially for their canopy cover.

In 2022, the UK health Security Agency (UKHSA) committed to setting up a Centre for Climate and Health Security to address health risk in the context of a changing climate. The work of the new centre will include developing evidence and resources on the health risks associated with climate change to support local and national decision makers.

- ***Reasonable worst-case scenarios should be drawn up from climate impact data:*** Local authorities are confronted by a wide range of climate impact data, which is often expressed as probabilistic outcomes depending on future carbon emissions trajectories. This can be complex and very hard to communicate to the public. Environment agencies provide advice on the handling of factors such as climate change (flood risk) allowances.[101] Local authorities may wish to consider the development of reasonable worse-case scenarios as a means of considering local climate impacts based on this data. This can be a useful way of understanding the need for new policy responses and engaging communities in a meaningful debate about their future. In practice this means always acting within the science set out by government in, for example, the UK Climate Projections[102] and the latest UK Climate Risk Assessment.[103] It then means that ***local planning authorities should consider using 'credible maximum climate change scenarios such as 'High++' when considering particularly vulnerable locations or sensitive development***.

3.2.3 The value of assessment frameworks

Promoting the use of established assessment frameworks in local plan policies can be a resource-efficient way of delivering better quality and higher

95 *Surface Water Management Plan Technical Guidance*. Department for Environment, Food and Rural Affairs, Mar. 2010. **https://www.gov.uk/government/publications/surface-water-management-plan-technical-guidance**

96 See the natural flood management maps at **https://naturalprocesses.jbahosting.com/**

97 See 'River basin management plans: 2015'. Webpages. Environment Agency/Department for Environment, Food and Rural Affairs. **https://www.gov.uk/government/collections/river-basin-management-plans-2015**

98 'Water supply, wastewater and water quality'. *Planning Practice Guidance*. Department for Levelling Up, Housing and Communities and Ministry of Housing, Communities and Local Government, Para. 012 'What is a water cycle study'. Ref. ID: 34-012-20140306. Revision date: 22 Jul. 2019. **https://www.gov.uk/guidance/water-supply-wastewater-and-water-quality#water-cycle-studies**

99 Natural England is creating maps of different types of green infrastructure across the whole of England, along with other data such as indices of deprivation, which will be freely available online from 2022. In the meantime a useful tool is Natural England's Open Data Geoportal, which provides free and open access to green infrastructure maps – see **https://naturalengland-defra.opendata.arcgis.com/**

100 *Overheating in New Homes*. Good Homes Alliance, Jul. 2019. **https://goodhomes.org.uk/overheating-in-new-homes**

101 *Flood Risk Assessments: Climate Change Allowances*. Environment Agency, Feb. 2016 (updated May 2022). **https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances#what-climate-change-allowances-are**

102 See the UK Climate Projections (UKCP) website, at **https://www.metoffice.gov.uk/research/approach/collaboration/ukcp/index**

103 See the Independent Assessment of UK Climate Risk (CCRA3) website, at **https://www.ukclimaterisk.org/**

standards in new developments (see **case study SD3** on Reading Borough Council). These frameworks assess aspects of climate performance such as the effectiveness of policy on the location and design of new homes. They are also increasingly used by other stakeholders, particularly investors for environmental social governance (ESG) purposes.

The Building Research Establishment's (BRE) BREEAM[104] suite of schemes covers all types of buildings, communities and infrastructure. It includes the Home Quality Mark (HQM),[105] and CEEQUAL[106] for public realm/infrastructure. More focused on energy performance is the Passivhaus assessment standard and methodology,[107] led in the UK by the Passivhaus Trust. They all drive standards through benchmarking and positive (credible) recognition supported by formal certification, and are recognised within the National Model Design Code.[108]

The HQM, BREEAM and CEEQUAL schemes provide a holistic set of criteria that not only support delivery of an energy-efficient, resilient built environment, but also help to mitigate unintended consequences (such as those related to temperature control and flooding) and drive the delivery of healthier, better-managed places. BRE trains and licenses independent assessors who carry out the assessments, which are then quality assured and certified by BRE. The whole process is overseen and verified by the United Kingdom Accreditation Service (UKAS). The schemes rate the asset at an overall level (on either an 'Pass' to 'Outstanding' scale or a five-star rating) and then provide detail on how well the asset is performing in particular areas, including resources, health and wellbeing, transport, energy, and pollution.

The Home Quality Mark (launched in 2015) provides, as well as an overarching five-star rating, an 'indicator' scoring on health and wellbeing, running cost, and environmental footprint.

BRE can work with local authorities to ensure that the schemes work in the best possible manner for each local authority. BREEAM and CEEQUAL are already widely adopted in local development plan policies, and HQM also increasingly recognised. HQM is beginning to be used as a 'deemed to satisfy' and/or preferred option within emerging plans (for example at Havant, the London Borough of Camden, and Ipswich) as one way of demonstrating and committing to delivering performance. HQM will form the delivery element of the Essex County Council Design Guide (and Essex local planning authorities' policies). HQM is also now being used by Transport for London within its sustainability criteria.

104 See BRE's BREEAM website, at **https://www.breeam.com/**
105 See BRE's Home Quality Mark website, at **https://www.homequalitymark.com/**
106 See BRE's CEEQUAL website, at **https://www.ceequal.com/**
107 See the Passivhaus Trust website, at **https://www.passivhaustrust.org.uk/**
108 *National Model Design Code. Parts 1 & 2.* Department for Levelling Up, Housing and Communities and Ministry of Housing, Communities and Local Government, Jul. 2021 (updated Oct. 2021). **https://www.gov.uk/government/publications/national-model-design-code**

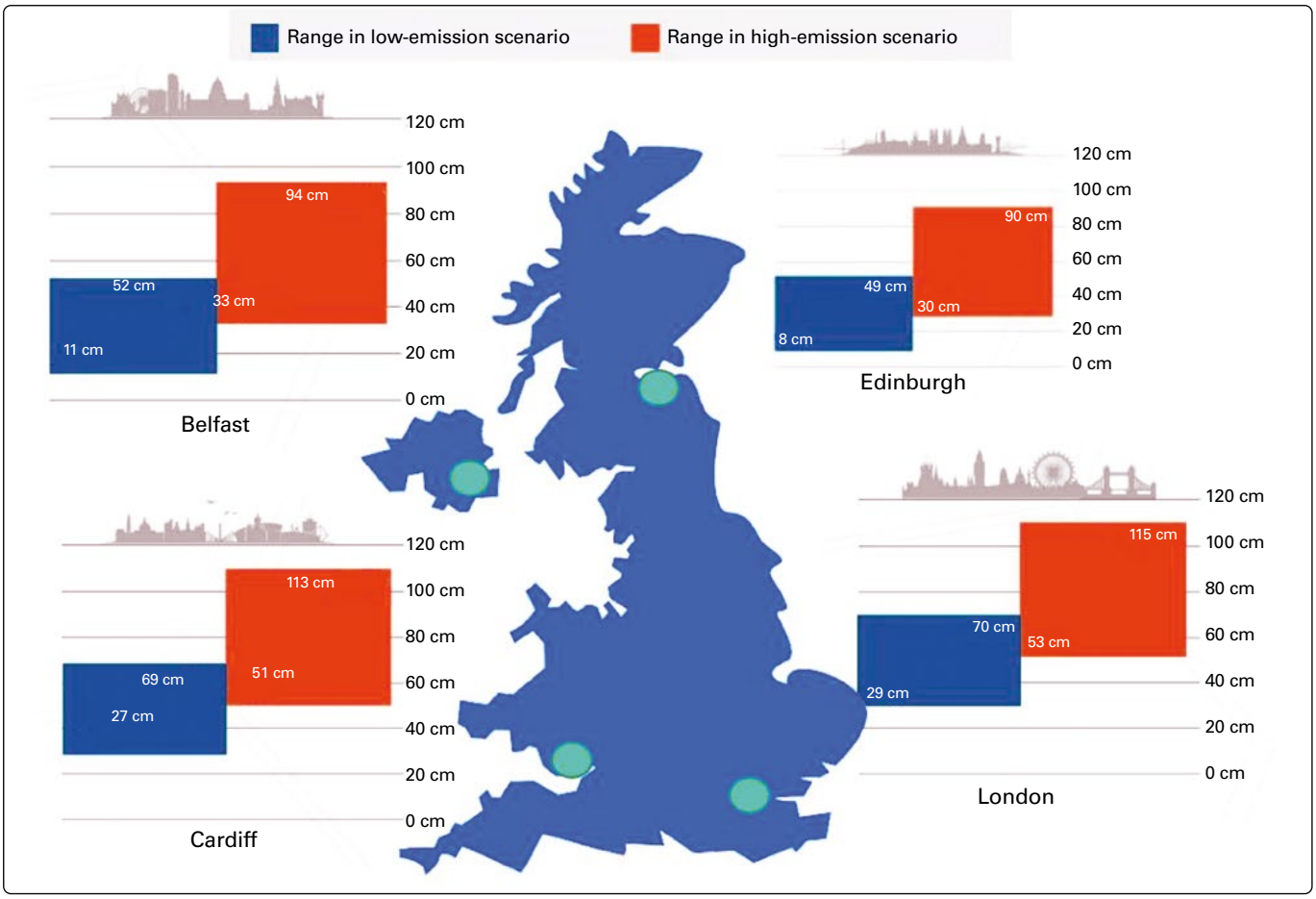


Fig. 4 The severity of the impacts of climate change (such as sea level rise) will be influenced by the degree of success in reducing greenhouse emissions

Source: UKCP18 National Climate Projections. Met Office. © Crown Copyright 2019, Met Office
https://www.metoffice.gov.uk/binaries/content/assets/metofficegovuk/pdf/research/ukcp/ukcp18-overview-slidepack-march21.pdf

3.3 Policy approaches

3.3.1 Ensuring that the plan has an overarching climate change policy priority

Successful solutions to the climate crisis require local planning policy to be based on a powerful overarching objective on mitigation and adaptation. This objective should inform the plan's overarching strategy, to reflect a spatial response to addressing climate change (for example through the location of development, mix of uses, densities, energy and transport strategies as well as technical requirements for buildings and design). This should be set within the wider objective of planning to secure sustainable development, based on the UN Sustainable Development Goals and Indicators.[109] ***Plan-making and development management must fully support the transition to a net-zero and resilient future in a changing climate.*** To deliver on this objective, local planning authorities should:

- Ensure that climate policy is embedded throughout the local plan policy narrative (see **case studies PP2 and PP3** on Salford and Old Oak & Park RDC).
- Ensure that climate mitigation and adaptation policies are developed in an integrated and holistic way which secures maximum benefit for communities in terms of other outcomes such as health and wellbeing (see **case study GI1** of Belfast and **ER2** of Greenspace Scotland).
- Recognise that adaptation responses are wholly dependent on the success of mitigation strategies in securing climate stabilisation (see Fig. 4 on page 36). Plans should acknowledge the potential need for the relocation of some communities in vulnerable areas.
- Take a target-led approach to policy on mitigation and climate resilience, ensuring, for example, that there is direct reference to the 2008 Climate Change Act carbon budget regime.

109 *The Sustainable Development Goals*. United Nations. https://sdgs.un.org/goals

- Ensure that requirements placed upon development are clear and precise wherever possible, in order to create certainty for the community and applicants.
- Make reference to relevant local commitments and targets and the local plan's contribution to achieving these (for example, where a climate emergency has been declared by the local authority).

3.4 Mitigation policy

3.4.1 Reducing carbon dioxide emissions

A powerful basis for local action is created by the requirement to achieve radical reductions in carbon dioxide emissions in order to be consistent with and support the Sixth Carbon Budget published by the Climate Change Committee in December 2019. Local development plans need a strong and precise policy narrative to show how reductions within their direct control or influence will be achieved.

It is therefore important that the carbon impact of development is understood, and local authorities should consider how this will be assessed to inform locations for growth and policy development. (See **case study ST5** on the Greater Cambridge Local Plan approach to carbon impact modelling).

Principles

- Local development plans must contain policies which, taken as whole, secure radical reductions in carbon dioxide emissions in line with the Sixth Carbon Budget. Plans should achieve this by identifying a range of policies that reduce carbon dioxide emissions and encourage renewable energy generation.
- These policies should be carefully assessed using the analysis that emerged from evidence-gathering to ensure the most powerful mix of policies that accord with local priorities. There are legitimate choices of emphasis to be made on, for example, renewable technologies, ***but*** the package choice must, taken as a whole, deliver the necessary local contribution to national carbon budgets.
- Local plans should consider *all* areas where greenhouse gas emissions can be reduced, including wider resource efficiency and its link to carbon emissions (for example water efficiency can reduce energy demand by reducing the need for water heating). This will ensure that climate change mitigation is addressed in relevant policy areas, including sustainable travel, net zero buildings, design, energy and water efficiency, renewable energy, supporting the circular economy and green infrastructure (for example through the protection of carbon sinks and carbon sequestration). Waterwise have produced advice on measures to achieve water efficient new homes.[110]
- Local authorities must have an effective monitoring regime to ensure that there is clear evidence of progress on reducing carbon dioxide emissions, and this progress must be clearly recorded in their Annual Monitoring Reports.

110 *Advice on water efficient new homes in England.* Waterwise, September 2018. https://www.waterwise.org.uk/knowledge-base/advice-on-water-efficient-new-homes-for-england-september-2018/

3.4.2 Renewable low-carbon energy and associated infrastructure

The UK decarbonisation strategy[111] as a whole is largely based on the electrification of transport and heat provision and on decarbonising electricity generation. The rapid roll-out of renewable energy is therefore a pre-condition to wider decarbonisation, and local planning authorities should give this policy area appropriate weight in plan-making. The most effective way to do so is to take a whole-system, integrated approach to energy and spatial planning and develop a comprehensive energy plan which reflects how the various renewable technologies can be best tailored to local spatial development ambitions. The Centre for Sustainable Energy (CSE) and Energy Systems Catapult have developed a methodology for the delivery of local area energy planning (LAEP),[112] and this whole-systems approach has been embedded in the latest edition of Planning Policy Wales.[113] Done well, local area energy planning can provide sound foundations for effective and sustained action to cut carbon dioxide emissions.

Principles

- Building on the evidence base approaches set out in Section 3.2, local planning authorities are advised to provide a positive strategy to maximise renewable and low-carbon energy developments (see **case study ER4** on Cornwall Council). Sites for decentralised energy projects should be allocated in the local development plan.
- Given the need to build public consent for renewable energy projects, local planning authorities may wish to consider community led approaches to energy planning at the neighbourhood scale, built around engagement to foster informed consent for renewables. This work is being pioneered by the Centre for Sustainable Energy (CSE),[114] which is currently working to scale up this approach.
- Local planning authorities should proactively support civic and community-led renewable energy activities.

111 *Net Zero Strategy: Build Back Greener.* Department for Business, Energy and Industrial Strategy. Oct 2021. **https://www.gov.uk/government/publications/net-zero-strategy**

112 *Local Area Energy Planning: The Method.* Centre for Sustainable Energy and Energy Systems Catapult, for Ofgem, Jul. 2020. **https://es.catapult.org.uk/reports/local-area-energy-planning-the-method/**

113 *Planning Policy Wales.* Edition 11. Welsh Government, Feb. 2021. **https://gov.wales/sites/default/files/publications/2021-02/planning-policy-wales-edition-11_0.pdf**

114 See Centre for Sustainable Energy's 'Future Energy Landscapes' project webpage, at **https://www.cse.org.uk/projects/view/1315**

Good practice

It is recommended that local planning authorities:

- Identify the most, and least, environmentally sensitive areas for deployment of different renewable technologies, and communicate this information to developers and communities, making explicit what criteria have been applied, including the relevant approaches set down in the applicable national planning policy on renewable energy.
- Ensure local criteria-based policies (including local approaches for protecting landscape and townscape) are used to inform allocations and assess planning applications for renewable energy and associated infrastructure:
  - provide appropriate safeguards, so that any adverse impacts are addressed satisfactorily, but ensure that the cumulative benefits of carbon reduction are fully recognised and given sufficient weight in the decision-making process;
  - require the scale and impact of developments affecting recognised landscape, biodiversity and heritage designations are compatible with the purpose of the designation and appropriately mitigated; and
  - are informed by the national approach and policies for nationally significant energy infrastructure.
- Align renewable energy policies with the commitments set out in climate emergency declarations and action plans, and give positive weight to the benefits of proposals in these terms (see **case study ER3** on Stroud District Council).
- Support opportunities for community-led renewable and low-carbon energy developments, including the production, processing and storage of bio-energy fuels.
- Actively support neighbourhood planning groups and community energy groups in developing renewable energy policies and proposals, including through the provision of suitable supporting evidence (for example publishing outputs from renewable energy capacity studies as interactive online maps).
- Integrate local area energy plans and local development plans, including engaging in detail with the Distribution Network Operator at forward planning stage to help anticipate, plan for and overcome distribution grid constraints, by considering the implications of local development plan policy for grid capacity and the inter-relationships between spatial and grid planning.

3.4.3 Setting requirements for using decentralised energy and district heating networks in new development

Principles

- Local requirements for decentralised energy can be set out in a development plan document and could be derived from an assessment of local opportunities, in line with Section 3.2.
- Where there are existing, or firm proposals for, decentralised energy supply systems with capacity to supply new development, local planning authorities can expect proposed development to connect to an identified system, or to be designed so that it can connect to it in future. In such instances, and in allocating land for development, it is recommended that local authorities set out how the proposed development would be expected to contribute to the decentralised energy supply system.
- Where a local requirement relates to a decentralised energy supply system fuelled by bio-energy, local planning authorities could ensure that fuel sources meet the objectives of sustainable development by not creating demand for bio-energy fuels known to result in net carbon emissions (through production methods, transport requirements, loss of carbon sinks) or other environmental harm (such as loss of habitat or damage to landscapes).

Good practice

It is recommended that local authorities set requirements for decentralised energy that:

- relate to identified development areas or specific sites;
- are consistent with giving priority to energy-efficiency measures; and
- focus on opportunities at a scale that developers would not be able to realise on their own in relation to specific developments.

Local planning authorities should consider requiring developers to submit energy strategies to demonstrate how green energy requirements have been considered. For large scale development, energy masterplans can be required, to demonstrate that expectations for district heating have been considered in masterplanning and scheme design from the earliest stage (see **case study ER5** on the GLA approach to energy masterplanning).

If a local requirement is set out as a target for the use of decentralised energy in new development, the target could be expressed as:

- the percentage reduction in carbon dioxide emissions to be achieved (in doing so, local planning authorities should set out how the target relates to standards for carbon dioxide emissions set by the Building Regulations); or
- an amount of expected energy generation, expressed in megawatt-hours per year.

3.4.4 Binding net-zero standards for new development

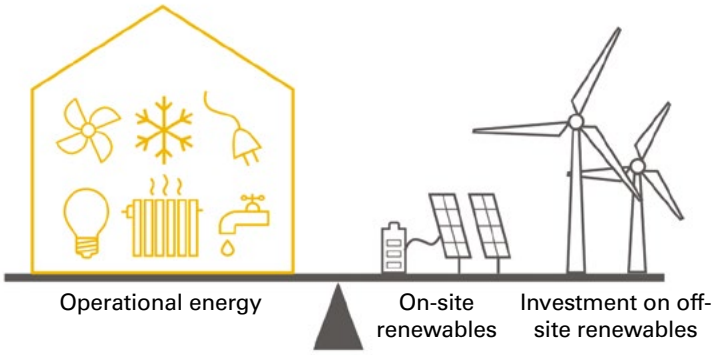
Recent revisions to Part L of the Building Regulations promise to significantly reduce baseline emissions from new buildings (by 31% from 2021-2022, and 75% from 2025). Remaining emissions reductions to reach net zero are assumed to come from the future decarbonisation of national electricity production. However, the pace and ultimate extent of grid decarbonisation cannot be guaranteed.

Ultimately, we cannot escape the truth that we need to build genuinely net-zero (and in terms of climate science, carbon negative) buildings as soon as possible. A significant role therefore remains for local planning authorities in setting binding net-zero policies that are more ambitious than the Building Regulations.

The powers in the Planning and Energy Act 2008 that enable local authorities in England to set targets for on-site renewable energy generation and energy efficiency standards beyond the Building Regulations remain in place (see section 2.5.1), and local authorities can require such measures, subject to the viability test (see section 3.2.1).

Recently adopted and draft local plans are providing examples of the use of such requirements and provide helpful examples for other authorities in relation to setting targets and developing robust local evidence (for example see the methodology contained in the London Plan, Greater Cambridge draft plan and the Cornwall Climate Emergency Development Plan (see **case study NZB1**) and B&NES Local Plan Partial Update.

The abolition of the national zero-carbon regime creates an opportunity for local planning authorities to fill this space and achieve local ambitions for zero carbon and energy-positive



Net-zero operational balance

Fig. 5 Summary of the principle of the net-zero operational balance at the building scale

Source: LETI Climate Emergency Design Guide: How New Buildings Can Meet UK Climate Change Targets. London Energy Transformation Initiative (LETI), Jan. 2020. https://www.leti.uk/cedg

development. However, local authorities are recognising that in the absence of strong national policy on net zero building requirements, there are advantages to achieving some level of consistency in approach and working with guidance and targets that have industry buy in. This will help to provide clarity to deliver the required changes in the design and construction industries and to demonstrate that standards are deliverable and viable.

One such approach, highlighted in **case study NZB1** on Cornwall Council's Climate Emergency DPD, is largely based on the LETI Climate Emergency Design Guide.[115] This approach is framed around energy rather than carbon, and sets direct objective standards for energy use intensity (measured in kilowatt-hours per square metre per year – kWh/m2/yr) for new development, as opposed to the indirect policy wording adopted in many local plans to date (such as 'a percentage improvement on the Building Regulations'). Energy use targets are more reliable that measuring carbon use in the context of a decarbonising national grid, and also allows for easier verification and in-use monitoring using meter readings. The approach forbids the use of fossil fuels in space and water heating, and requires any renewable energy not generated on-site to be met by investment into new renewable energy off-site. Thus a net-zero operational energy balance (see Fig. 5) is achieved within new development, and the development is made net zero. This policy approach also has the potential to make offsetting more robust than current commonly used policy approaches.

Principles

- To deliver on the ambition of zero-carbon and energy-positive communities, local development plans should develop binding net-zero standards for new development, aligned with the energy hierarchy (use less energy e.g. through optimal fabric efficiency - energy efficiency – onsite renewable energy – offsite renewable energy).
- Policies should be based on a robust evidence base (covering technical feasibility and viability) and should be linked to the wider ambition of delivering radical cuts in carbon dioxide emissions.
- Policy should maximise the emissions reductions achieved on-site through fabric efficiency and renewable energy, with carbon offsetting seen as a last resort.

Good practice

It is recommended that local planning authorities:

- Encourage the integration of energy storage and smart energy technologies (which limit and move peak energy demand) within net-zero policies. However, it is unlikely that planning policy will be able to keep up with the pace of technological development. Any policies should therefore be flexible to accommodate future technological change by being outcome oriented, and should allow the resultant carbon emissions reductions to be counted towards net-zero standards, provided that a robust methodology is provided.
- Carbon offsetting regimes, where established, are significant undertakings and require careful set-up and dedicated resource to ensure they stimulate and can demonstrate genuinely *new, additional* carbon savings that would not otherwise have been achieved. Carbon offset funds must be deployed without delay. Authorities should be clear about the limitations of carbon offsetting and require their use as a last resort only where it is demonstrated that onsite carbon reduction measures cannot be achieved. At their worst, carbon offsetting schemes can give false comfort that development is net zero, while obscuring the more fundamental changes needed in our development model.

115 *LETI Climate Emergency Design Guide: How New Buildings Can Meet UK Climate Change Targets.* London Energy Transformation Initiative (LETI), Jan. 2020. https://www.leti.uk/cedg

debstheleo/Canva

3.4.5 Fossil fuel extraction

There are significant differences in fossil fuel extraction policy across the four nations and regions of the UK. However, to meet the UK's net-zero ambitions, fossil fuel extraction can have no medium- or long-term role in energy generation or industrial processes. The Sixth Carbon Budget provides for a limited short-term role, but this does not normally require the consenting of any new mineral extraction.

Principles

- In planning for any form of fossil fuel extraction, local planning authorities must ensure that all greenhouse gas emissions from the extraction and consumption are aligned with the objectives and provisions of the Climate Change Act 2008 and any locally determined climate targets. If there is any uncertainty, a precautionary approach should be applied.
- When considering applications for fossil fuel extraction, local planning authorities should adopt a presumption against approval unless there are exceptional demonstrable reasons why the application should be approved.

Good practice

- Local planning authority policy should be to bring a managed end to the extraction and use of coal. The model set out in **case study CM3** represents an example of a strategic policy on fossil fuel extraction by the Welsh government, but the approach can be applied to all energy minerals.

3.4.6 Setting requirements for sustainable buildings

Local planning authorities have the power to set requirements regarding sustainable building standards for homes, non-domestic buildings, and the public realm. In this context there are a range of building standards and assessment frameworks that local authorities can adopt (see also section 3.2.3), subject to viability testing, including:

- BRE's Home Quality Mark;[116]
- BRE's BREEAM;[117]
- BRE's CEEQUAL (for public realm/ infrastructure);[118]
- BRE's BREEAM Communities;[119]
- Passivhaus standards (led in the UK by the Passivhaus Trust);[120] and
- the SHIFT standard.[121]

The BRE schemes are holistic in their scope and include criteria that address a wide range of climate change issues (including energy and carbon efficiency, water use, flooding, and mitigation of the risks of overheating). Other kinds of design advice are available on specific issues such as overheating (see Section 3.5.4).

Principles

- Any local requirement for a building's sustainability should be set out in a development plan document and applied appropriately to specific sites.

Good practice

It is recommended that local authorities:

- Ensure that any local standards for a building's performance (both for measuring a building's performance and for matters relating to construction techniques, building fabric, products, fittings and finishes) do not duplicate the Building Regulations or enhanced national energy standards.
- Consider specifying a recognised assessment framework in policy, including the following approaches:
  - Consider the stages and timings of certification, so as to ensure that development is not impeded and that a specific performance level has been met – for example, a final certificate issued under a BRE scheme would have been assessed using as-built evidence, providing the highest level of rigour and confidence in performance.
  - Take account of the impact and size of the development. Some local planning authorities prefer to set higher performance levels based on floor area, cost and/or unit number, and this can enable higher standards to be met where viability is potentially stronger, while ensuring a minimum standard across the board (see **case study SD3** on Reading's Sustainable Design and Construction Policy).
  - Focus on policy resilience and long-term aspirations. The BRE schemes are updated regularly to ensure that the performance criteria remain relevant and challenging where appropriate. As such, a BREEAM 'Excellent' rating under a 2011 scheme version will be less onerous to achieve in comparison with that under the 2018 scheme. Local planning authorities should consider their long-term objectives, and may wish to set standards aligned to annual targets.
  - Consider the flexible application of ratings. The highest rating under the BRE schemes (i.e. 'Outstanding') has been gained by less than 2% of all projects assessed – it is designed to be challenging and, while the highest level of performance should be encouraged, it may not be suitable for every project.

BRE

There are a range of building assessment frameworks that can be used

116 See BRE's Home Quality Mark website, at https://www.homequalitymark.com/
117 See BRE's BREEAM website, at https://www.breeam.com/
118 See BRE's CEEQUAL website, at https://www.ceequal.com/
119 See BRE's BREEAM Communities website, at https://www.breeam.com/discover/technical-standards/communities/
120 See the Passivhaus Trust website, at https://www.passivhaustrust.org.uk/
121 See the SHIFT website, at https://shiftenvironment.co.uk/

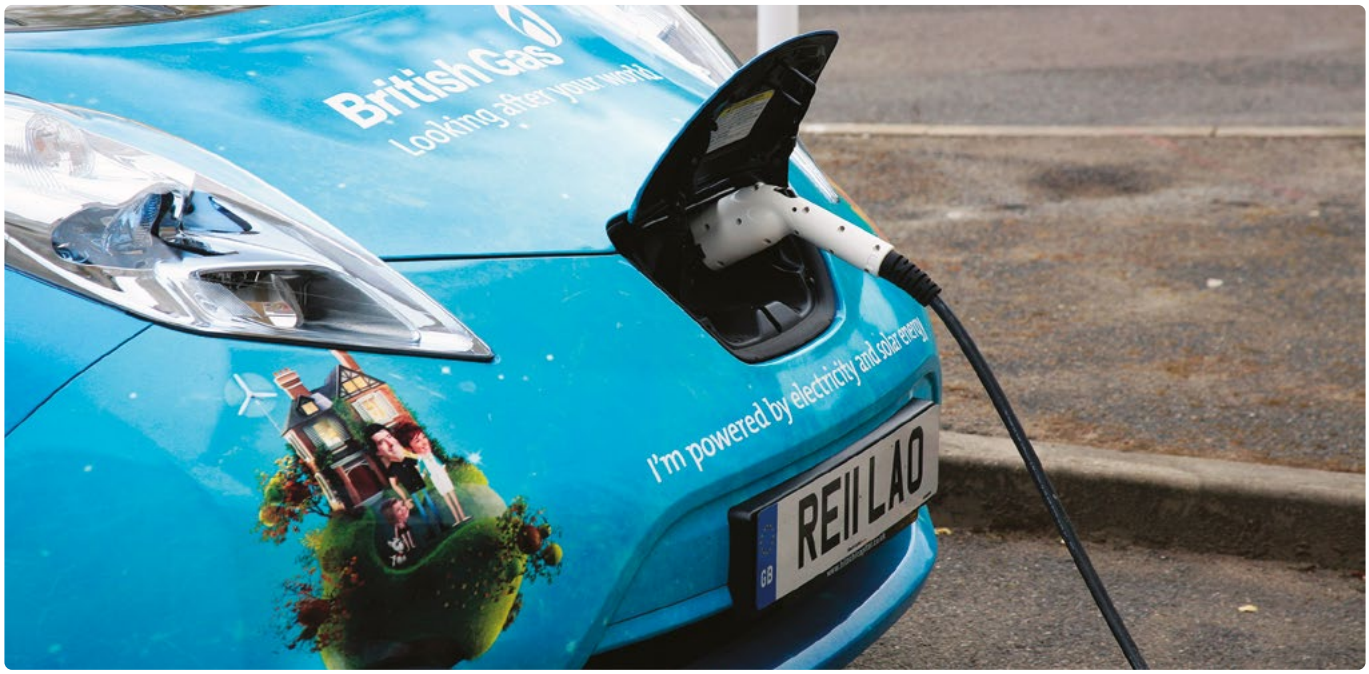
3.4.7 Sustainable transport

Transport is the largest contributor to greenhouse gas emissions by sector (27% of the UK total in 2019), and very little progress has been made to effect reductions (although a significant reduction was recorded in 2020, as a result of the Covid-19 pandemic). Emissions from private vehicles make up 56% of the transport total.[122] Well planned development can create opportunities for more sustainable transport choices to be made and healthy lifestyles to be adopted. Planning must also consider the technological transformation of transport systems, with the rapid introduction of electric vehicles, the use of autonomous vehicles, and radical changes in the nature of work and leisure, all of which may alter travel patterns. The Climate Change Committee advises that local development plans or transport plans should deliver a 33%-35% shift from cars to walking/cycling/public transport for shorter trips to meet net-zero targets, and cities can be even more ambitious than this.[123]

To achieve this, sustainable transport must be a fundamental driver for local plans, informing both the location and form of new development.

Principles

- A development's location has significant implications for its sustainable transport potential. Significant development should be focused on locations which are or can be made sustainable, through limiting the need to travel and offering a genuine choice of transport modes.
- Sustainable transport needs to be considered in an integrated manner at the beginning of the plan-making process, so that development patterns are shaped by existing and planned sustainable transport infrastructure.
- Opportunities to walk and cycle and the convenience of public transport are essential factors in creating high-quality places (see **case study ST1** on promoting active travel in Brighton & Hove). Planners should seek to 'tip the balance' by making use of any route for a sustainable mode within a development quicker, easier and cheaper than the alternative offered by private car (see **case study ST2** on Glasgow's cycle network).
- Where there is a need for car use, zero-emission vehicles should be prioritised over petrol/diesel cars. Local planning authorities should consider how the rapid and large-scale deployment of electric vehicles will impact on their plan policies and how local development plan policy can support this transformation.



BRE

Local authorities should support the rapid deployment of electric and plug-in hybrid vehicles

122 *Transport Statistics Great Britain: 2019.* Department for Transport, Dec. 2019. https://www.gov.uk/government/statistics/transport-statistics-great-britain-2019

123 *Local Authorities and the Sixth Carbon Budget.* Climate Change Committee, Dec. 2020. https://www.theccc.org.uk/publication/local-authorities-and-the-sixth-carbon-budget/

Good practice

Local authorities are recommended to:

- Set planning policy which prioritises a move away from car dependency. Such policy could include:
  - Using the 20-minute neighbourhood concept[124] to design **complete, compact, connected** places. Shops and services, including pre-school and primary education facilities, should be located within walking distance of people's homes.
  - Securing better conditions for walking and cycling by lowering speed limits, managing motor traffic levels, providing convenient cycle storage (see **case study ST3** for an example from Watford) and widening route options, for example by improving rights of way networks.
  - Securing better public transport services, including new demand-responsive and community transport, as well as integration between existing services and opportunities to set up car clubs.
  - Prioritising development that focuses on improving local high streets and town centres and prevents urban sprawl and low density development far from local amenities, which locks in car dependence.
  - Setting targets to ensure that all developments are air quality neutral and do not lead to further deterioration of existing poor air quality.
  - Use measures to disincentivise the use of cars for journeys where alternatives are readily available, for example through restricting parking, low emissions zones and traffic calming (see **case study ST8** on Surrey's local transport plan).
- Ensure that planning, transport and public health policies are joined up so that actions and priorities in local health strategies and transport plans are supported by planning policies.
- Secure the phasing of development so that sustainable travel infrastructure is provided prior to occupation, giving the best chance for sustainable travel use to become the norm for new residents.
- Set appropriate targets on the proportion of trips made by walking, cycling or public transport within travel plans for new development, particularly for new neighbourhoods, and ensure that infrastructure delivery plans include investment in transport infrastructure, including public transport, that will contribute towards the achievement of these targets.
- Work in partnership with the regional or local transport authority and local transport providers (bus/train operators and community transport) to:
  - identify and establish within the local development plan a strategic and local transport network to serve the needs of the area throughout the plan period;
  - support the delivery of the associated infrastructure and services throughout the period of the plan; and
  - establish the extent and levels of service that should underpin the strategic and local networks for existing and new developments, ensuring that they are consistently underpinned by other relevant policies.
- Support the rapid deployment of electric and plug-in hybrid vehicles and set requirements for charging points (see **case study ST6** on Salford's EV charging policy).
- Consider how accessibility and safety can be improved for different users, particularly vulnerable groups (including children and young people, women, older people and disabled people) through the inclusive design of places and transport provision.
- Establish a car parking management strategy and maximum car parking standards that follow the principle that walking, cycling or public transport should be easier than using a private car.
- Monitor the numbers of trips and the proportions undertaken by different modes of transport.

Further guidance on how to integrate sustainable transport into plan-making is set out in Chapter 2 of the CIHT's *Better Planning, Better Transport, Better Places* report.[125] Other useful resources include the RTPI's *Net Zero Transport: The Role of Spatial Planning and Place-Based Solutions*,[126] the TCPA's *Sustainable Transport* practical guide for creating successful new communities,[127] and CIHT's *Buses in*

124 See *20-Minute Neighbourhoods – Creating Healthier, Active, Prosperous Communities. An Introduction for Council Planners in England.* TCPA, Mar. 2021. **https://www.tcpa.org.uk/the-20-minute-neighbourhood**

125 *Better Planning, Better Transport, Better Places.* Chartered Institution of Highways and Transportation, Aug. 2019. **https://www.ciht.org.uk/knowledge-resource-centre/resources/better-planning-better-transport-better-places/**

126 *Net Zero Transport: The Role of Spatial Planning and Place-Based Solutions.* RTPI, Jan. 2021. **https://www.rtpi.org.uk/research/2020/june/net-zero-transport-the-role-of-spatial-planning-and-place-based-solutions/**

127 *Sustainable Transport.* Guide 13. Practical Guides for Creating Successful New Communities. TCPA, Sept. 2020. **https://www.tcpa.org.uk/tcpa-practical-guides-guide-13-sustainable-transport**

Urban Development.[128] *Streets for a Healthy Life*[129] was published by Homes England as a companion to the Building for a Healthy Life assessment, giving further guidance to highways authorities and developers on best practice for street design. From 1 June 2023, Active Travel England will become a statutory consultee on planning applications where developments meet the following minimum thresholds:

- 150 residential units (dwellings)
- 7,500m2 commercial area; or
- Sites with area of 5 hectares or more.

Active Travel England has been set up to put active travel at the heart of plan-making and decision-making. Their remit includes promoting good design so the opportunity to build active travel routes into development proposals is fully maximised.

An update to the government's Manual for Streets is also anticipated soon.

3.5 Adaptation policy

The scale of global action on reducing greenhouse gas emissions will affect the scale of the adaptation challenge that we face (see Fig. 4 on page 34). However, the impacts of climate change are already being felt severely around the world. Climate adaptation requires the radical re-making of places to respond to the complex and dynamic impacts of climate change.

There are four high-level factors to bear in mind in developing successful adaptation policy for local development plans:

- ***Place:*** Climate impacts play out very differently across the diverse physical and social geography of the UK. Urban and rural areas, upland and coastal places – all require different and fine-grained responses.
- ***People:*** Climate impacts affect different people in different ways, with consequences that are particularly significant for social groups least equipped for resilience. Adaptation solutions also have direct and lasting impacts on everyday lives, so taking action means working with communities and communicating an effective narrative for change.
- ***Space:*** Building resilience requires interlocking measures, from major spatial-scale coastal realignment to the detail of the way that buildings are wired. The interdependence of decisions on such matters is vital in determining long-term solutions, and is often complicated by catchments and coastal systems which do not fit with local government boundaries.
- ***Time:*** Building resilience requires thinking about the very long term – and at least 100-year planning horizons. For some critical infrastructure longer periods will be appropriate. This implies new ways of thinking and working. Time is also running out for us to begin building resilience, so we need to act now and act radically.

Because of its visible impact, flood risk is often the top priority of any adaptation strategy; but planning for flood risk is not always carried out with sufficient grasp of the long-term risks, nor of the opportunities to design resilient places. However, successful adaptation policy involves much more than simply addressing flood risk and has to take account of a range of severe and complex climate impacts. Dealing with this reality requires holistic planning over the long term based on an understanding of how such changes will interact and affect people's health and wellbeing. Building climate resilience requires an inter-organisational, inter-departmental local response in which the local development plan can be an integrating aspect. Above all, climate adaptation must be understood as the main priority for long-term planning, and must be seen as being as important as meeting housing need.

The design of communities and buildings is also an important consideration for climate adaptation, and the National Model Design Code guidance notes highlight the need for well-designed places to respond to adaptation to anticipated events, including the increasing risk of flooding.[130]

128 T Pharoah: *Buses in Urban Developments*. Chartered Institution of Highways and Transportation, Jan. 2018. https://www.ciht.org.uk/media/4459/buses_ua_tp_full_version_v5.pdf

129 *Streets for a Healthy Life*. Homes England, July 2022. https://www.gov.uk/government/publications/streets-for-a-healthy-life

130 *National Model Design Code Part 2: Guidance notes*. Ministry of Housing, Communities and Local Government, Jan. 2021. https://www.gov.uk/government/publications/national-model-design-code

Principles

- Local development plans should set out how the local planning authority area will be planned in relation to long term climate risks including those set out in the Environment Agency's flood risk allowances. To ensure that development can be made safe over its lifetime, planning authorities need to understand the future resilience of their communities and how climate change will impact the authority area over the next one hundred years.
- People – and particularly disadvantaged communities – should be front and centre of thinking about planning for climate change. The input of marginalised groups into decisions about climate change policy should be consciously sought.
- Climate change risk should be understood at the global, national, regional and local scales. The Met Office holds data and research on climate impacts based on climate projections.[131] These include regional summaries and a number of City Packs[132] which provide an overview of localised impacts.

Good practice

- Set out how new development should be planned to avoid significant vulnerability to impacts arising from climate change over at least the next 100 years.[133] Planning should be tailored to the local area and the lifetime of the proposed development.
- Identify and allocate land in the local development plan to be safeguarded for climate adaptation measures that will be needed in future, including land for new traditional flood defences, natural flood management schemes, and urban cooling measures such as green infrastructure.
- Tailor policy to meet the needs of those likely to be most vulnerable to climate change.
- Set requirements in policy for the implementation of climate change adaptation measures that also address a range of other social issues. For example, the provision of green infrastructure in urban areas is effective at addressing overheating, flooding and soil erosion, but it also has a range of benefits for mental and physical wellbeing (see **case study G14** on City of London Corporation).
  The UKGBC's guidance on nature recovery and climate resilience[134] includes detailed information on how multi-benefits of green infrastructure can be achieved through spatial planning.

iStock / PhotoEngland

Advantage must be taken of opportunities to implement active water management and sustainable drainage systems

131 Available from: **https://www.metoffice.gov.uk/research/approach/collaboration/ukcp**

132 Available from: **https://www.metoffice.gov.uk/research/approach/collaboration/spf/ukcrp-outputs**

133 UKCP18 sea level rise figures include exploratory projections out to the year 2300, which could be useful in understanding the long-term sustainability of coastal communities or developments such as major infrastructure, new settlements, and major urban extensions

134 Available from: **https://www.ukgbc.org/ukgbc-work/the-nature-recovery-and-climate-resilience-playbook/**

Anastasia Nikologianni

Pressures to develop in areas of flood risk must be resisted

3.5.1 Selecting sites for new development

Local planning authorities are under intense pressure to allocate sites for new housing in local development plans, but site selection is a foundational component of dealing with climate change. Reducing the need to travel, connecting to existing heat networks and avoiding areas of flood risk are obvious considerations that can sometimes be in tension with each other.

Principles

- In assessing sites for their suitability for new development, local authorities should consider their potential to support the move to a net zero carbon future and to adapt to or mitigate the impacts of climate change. Where sites perform poorly against any of the criteria identified below, local authorities should consider alternative site allocations, including opportunities for new communities.

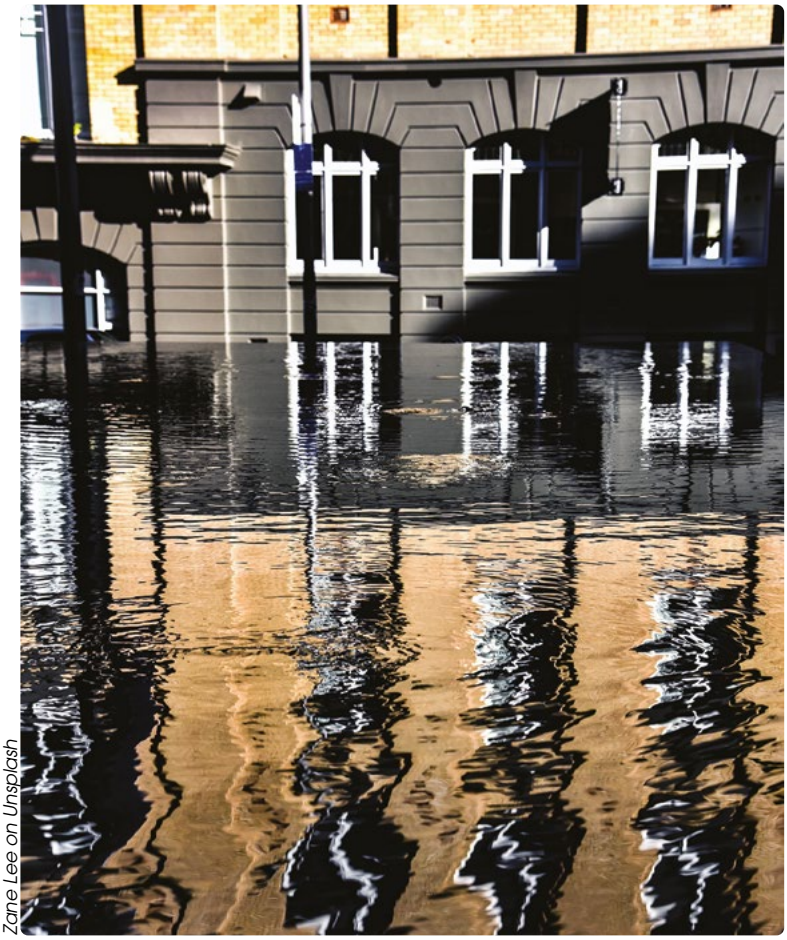
Good practice

It is recommended that local planning authorities assess the suitability of sites for new development, and for the type and intensity of development, against the following criteria:

- Whether the site is appropriate for development, having regard to the long-term suitability of building in the location, as well as the intended lifetime of the proposed development and any increases in risk resulting from climate change to known physical and environmental elements such as sea level rise, flooding, increased temperatures, instability, and extremes of weather;
- Whether development of the site would offer opportunities to help the existing community to adapt to impacts arising from climate change, including through active water management (taking existing communities out of flood risk) and sustainable drainage systems;
- The potential to deliver multi-functional green infrastructure – well designed green infrastructure can reduce flood and overheating risks, provide space for species to adapt and become more resilient, and provide land for food growing as well as helping to increase carbon sequestration and storage;
- The effect of development of the site on the capacity of biodiversity to adapt to likely climate change;
- Whether the development provides gardens and plots for allotments or other community areas to maximise opportunities for local food sourcing;
- Whether the development can improve sustainability through the provision of services locally, the creation of new jobs or by increasing the competitiveness of the area; and
- The potential for the site to be serviced by a choice sustainable and active travel modes (see section 3.4.7).

3.5.2 Flood risk

One of the most important roles of the planning system in relation to climate change is to understand the risks of flooding in a plan area and secure the safety of future development. This requires a strong understanding of flood risk from all sources (including surface water, tidal and fluvial), not just where flooding is a risk factor now, but also how this spatial pattern might change in the future.



Zane Lee on Unsplash

Development needs to be flood-resistant over its lifetime

In England, Planning Practice Guidance on flood risk and coastal change was updated in August 2022. The update provides more clarity on the application of the sequential and exception tests, encourages an integrated approach to flood risk management and consideration of flood risk at a water catchment scale, and makes clear the measures that should be taken to make sure new development does not increase the risk of flooding for nearby communities.

There are many planning tools that can be used to minimise or reduce flood risk in an area. Each nation has policy and guidance from government and the environment agencies on how to plan for flood risk (see Sections 2 and 3.2.2) that should be followed closely.

Principles

- Development should be steered away from current and future flood risk areas.
- Development should be required to be safe and not increase risk elsewhere over its lifetime.
- Development should be designed to be flood resilient over its lifetime.
- Opportunities should be taken to reduce overall flood risk, for example through natural flood management (see **case study FR2** on Devon County Council). Extensive data, case studies and evidence on the role of natural flood management in reducing flood risk are available.[135]
- Land needed for future flood risk management infrastructure should be safeguarded.
- Opportunities to relocate development from unsustainable locations should be sought and taken.
- Developer contributions could be required for flood and coastal risk management infrastructure.
- Evidence on flood risk should be kept up to date and reflect the most recent data and information. The Environment Agency, ADEPT and CIWEM have produced a good practice guide for Strategic Flood Risk Assessments in England.[136]

135 See, for England, 'Working with natural processes to reduce flood risk'. Webpage. Environment Agency/Flood and Coastal Erosion Risk Management Research and Development Programme. https://www.gov.uk/flood-and-coastal-erosion-risk-management-research-reports/working-with-natural-processes-to-reduce-flood-risk; for Scotland, *Natural Flood Management Handbook*. Scottish Environment Protection Agency (undated). https://www.sepa.org.uk/media/163560/sepa-natural-flood-management-handbook1.pdf; and, for Wales, 'Maps for Natural Flood Management'. webpage. Natural Resources Wales. https://naturalresources.wales/flooding/managing-flood-risk/maps-for-natural-flood-management/

136 This is available from: https://www.adeptnet.org.uk/documents/strategic-flood-risk-assessment-good-practice-guide

Good practice

- Ensure that the relevant environment agency's advice on flood risk assessment and the local development plan is adhered to.
- Apply the sequential test[137] correctly and thoroughly in order to steer development away from flood risk areas. Where development is necessary in flood risk areas, the exception test should be applied to demonstrate that the wider sustainable benefits to the community that the development will bring outweigh the flood risk. To satisfy the exception test, the development also needs to be safe over its entire lifetime, not increase flood risk elsewhere and, wherever possible, reduce flood risk overall.
- After exhausting opportunities to avoid flood risk, including through site layout and raising development above estimated flood levels, use property flood resilience measures to mitigate against any residual flood risk, particularly in existing buildings (change of use/ conversions, etc.) where avoidance approaches may not be feasible. The Construction Industry Research and Information Association (CIRIA) has produced a code of practice for property flood resilience and advice for planners on how it should be used as guidance.[138]
- Consider positive policy in local development plans and design codes to allow existing properties at risk of flooding to install kitemarked property flood resilience measures.
- Design new buildings and developments to incorporate the resilience standards necessary to deal with increased surface water flooding events. Anywhere can be affected by surface water flooding, although of course it is much more common in dense, concreted urban areas. Integrating green and blue infrastructure into new developments can also reduce surface water flood risk.[139]
- Ensure that multi-functional sustainable drainage systems (SuDS) are delivered as part of new development (see **case study FR3**). CIRIA has produced technical guidance for practitioners on the delivery of SuDS.[140]
  In Wales, it is a legal requirement for all new developments to include SuDS which comply with national statutory SuDS standards. Developers must gain approval for their drainage scheme from a SuDS approval body (SAB) before construction can begin.[141]
  In England, all new development will be expected to incorporate SuDS once Schedule 3 of the Flood and Water management Act 2010 is enacted. This expected to be implemented during 2024.
- When identifying opportunities for on- and off-site biodiversity net gain, seek approaches that also reduce flood risk.
- Consider how the broader strategy for water management across the catchment area should influence planning policy and decisions. Use local evidence such as flood risk management plans, catchment plans and river basin management plans to inform how development can contribute to achieving the broader water management strategy for the area.

137 *Flood Risk Assessment: The Sequential Test for Applicants*. Guidance. Environment Agency/Department for Environment, Food and Rural Affairs, Apr. 2012 (updated Feb. 2017). **https://www.gov.uk/guidance/flood-risk-assessment-the-sequential-test-for-applicants**

138 *Code of Practice for Property Flood Resilience*. C790F. CIRIA (Construction Industry Research and Information Association), Jan. 2021. **https://www.ciria.org/CIRIA/Item_Detail.aspx?WebsiteKey=3f18c87a-d62b-4eca-8ef4-9b09309c1c91&iProductCode=C790F&Category=FREEPUBS&OrderLineId=9812564b-73b6-45b6-bcb0-f250c041726b**

139 *Sustainable Drainage Systems: Non-Statutory Technical Standards for Sustainable Drainage Systems*. Department for Environment, Food and Rural Affairs, Mar. 2015. **https://www.gov.uk/government/publications/sustainable-drainage-systems-non-statutory-technical-standard**s

140 *The SuDS Manual*. C753. CIRIA (Construction Industry Research and Information Association), Dec. 2015. **https://www.ciria.org/CIRIA/Memberships/The_SuDs_Manual_C753_Chapters.aspx**

141 *Sustainable Drainage Systems (SuDS)*. Natural Resources Wales, May 2020. **https://naturalresources.wales/guidance-and-advice/business-sectors/planning-and-development/advice-for-developers/sustainable-drainage-systems-suds/?lang=en**

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Coastal erosion at Skipsea on the East Yorkshire coast

3.5.3 Relocation

It will not be possible to secure a long-term resilient future for every home and every community. In some cases, such as coastal change resulting from sea level rise, long-term flood defence will be unachievable, and planning authorities will need to urgently consider the inclusion of policy to enable the relocation of existing homes, businesses and infrastructure. In some cases the longer-term strategic relocation of whole communities will need to be considered. This process requires early, open and honest dialogue with the community so that their needs are embedded in the decision-making process.

3.5.4 Overheating

Heatwaves are already by far the deadliest weather-related disasters now occurring in Europe. The record breaking heatwave of summer 2022 is estimated to have caused at least 20,000 deaths in Europe according to national health agencies, including 3,200 in the UK.[142]

Cooling is particularly important in cities that face rising temperatures exacerbated by the urban heat island effect. This results from concrete, tarmac and roofs absorbing the sun's power and radiating it out as heat long after the sun has gone down. Often, poorer neighbourhoods are more affected as residents have less access to air conditioning and cooler green spaces, and are more likely to be living in over-crowded homes, putting vulnerable people at greater risk of heat-related health issues.

Updated Building Regulations Part O for overheating mitigation in residential buildings in England took effect in June 2022. These ensure buildings make reasonable provisions to limit unwanted solar gains in summer and provide a means to remove heat from the indoor environment.[143]

Planning authorities are not required to duplicate the requirements set out in Part O guidance, but planning authorities may consider incorporating design approaches to reduce the risk of overheating in policies. The National Model Design Code[144] includes considerations for orientation, glazing and aspect that can reduce risk.

142 Statement by WHO Regional Director for Europe. World Health Organisation, 7 November 2022. **https://www.who.int/europe/news/item/07-11-2022-statement---climate-change-is-already-killing-us--but-strong-action-now-can-prevent-more-deaths**

143 *Overheating: Approved Document O.* Department for Levelling Up, Housing and Communities, December 2021. **https://www.gov.uk/government/publications/overheating-approved-document-o**

144 *National Model Design Code Part 2: Guidance notes.* Ministry of Housing, Communities and Local Government, Jan. 2021. **https://www.gov.uk/government/publications/national-model-design-code**

Principles

- Urban areas will need significant redesign of the wider built environment to withstand rising temperatures.
- Policy should focus on those communities most at risk and seek design solutions that do not impose additional energy costs for those on low incomes.
- New buildings should be designed to maintain comfortable temperatures even in extreme heat, through consideration of orientation, shading, internal layout, solar reflection, fenestration, insulation, ventilation and use of features such as green roofs and walls.
- Street tree planting and green infrastructure can help to mitigate the urban heat island effect and can deliver multiple other benefits.
- Local planning policies should deter the use of cooling systems that further contribute to greenhouse gas emissions (through use of energy and refrigerants).

Good practice

- Ensure that guidance contained in design codes is consistent with the need to tackle overheating.
- Consider referencing assessment frameworks or guidance on avoiding overheating in local development plan policy. The Chartered Institution of Building Services Engineers (CIBSE) has published guidance on design methodology for the assessment of overheating risk in homes.[145]
- For instances where technical assessment regimes are not yet in place, make use of the Good Homes Alliance's non-technical guide and tool for assessing and mitigating overheating in new homes.[146]
- Plan green infrastructure as part of wider infrastructure networks in order to deliver urban cooling and local access to shady outdoor space, as well its many other benefits. Forest Research has published research that includes a summary of design strategies to maximise the cooling potential of green infrastructure.[147]

145 *Design Methodology for the Assessment of Overheating Risk in Homes.* TM59. CIBSE (Chartered Institution of Building Services Engineers), May. 2017. **https://www.cibse.org/knowledge/knowledge-items/detail?id=a0q0O00000DVrTdQAL**

146 *Overheating in New Homes.* Good Homes Alliance, Jul. 2019. **https://goodhomes.org.uk/overheating-in-new-homes**

147 *The Role of Urban Trees and Greenspaces in Reducing Urban Air Temperatures.* Research Note. Forest Research, Jan. 2019. **https://www.researchgate.net/publication/332902468_The_role_of_urban_trees_and_greenspaces_in_reducing_urban_air_temperatures**

section 4
development management

Development management decisions must be based on sound evidence, assessing likely climate impacts

Under the plan-led system all planning decisions should be taken in line with the local development plan, which must contain detailed policy on climate mitigation and adaptation. It is vital that development management decisions made when a plan is absent or out of date reflect the principles identified in Section 3 of this guide. Decisions must be based on sound evidence, assessing and reflecting the likely climate impacts, including carbon dioxide emissions, of a scheme over the full lifetime of the development (at least 100 years for residential buildings). Just as with plan policy, changes in climate impacts on the new development itself over time must also be considered, including responses to increased temperatures, river flows and sea level rise[148] over its full lifetime.

National policy and guidance contain well established advice on the application of the sequential and exemption tests for flood risk. There is much less guidance for other adaptation issues. In particular, more attention must be paid to overheating and the impacts it has on human health and wellbeing – a full understanding of how the design of green infrastructure can reduce summer temperatures and the impact of this on people's health and wellbeing is necessary. Local planning authorities must be aware of the extent of permitted development in their area,[149] and should keep track of the cumulative impacts that this type of development may have on the urban environment, particularly while other new policies on increasing housing densities are being promoted. High-density living can work well, but only when development meets the highest design standards and takes factors such as the urban heat island effect into account. The Climate Change Committee's 2021 progress report to Parliament[150] highlighted the need to improve understanding of, and support action, on overheating in residential buildings.

Box 9
Dealing with the presumption in favour of development in England

The general presumption in favour of development set out in paragraph 11 of the NPPF is qualified for where development would conflict with NPPF policy. Footnote 7 of the NPPF lists examples of development subject to this qualification, and identifies flood risk as an example.

148 Expressed in Environment Agency climate change (flood risk) allowances

149 Applications are submitted to local authorities under permitted development rights through the prior-approval process – but it is much harder to understand changes that have occurred through the deregulation of Class E, where changes in use require no form of planning application

150 *Progress in Reducing Emissions 2021: Report to Parliament.* Climate Change Committee, Jun. 2021. https://www.theccc.org.uk/publication/2021-progress-report-to-parliament/

4.1 Mitigating climate change

4.1.1 Delivering a low-carbon and climate-resilient future

Principles

- Local planning authorities should engage constructively with developers to deliver well designed sustainable buildings and high-quality local environments suitable for net-zero living. It is reasonable for local planning authorities to expect proposals to demonstrate how the new development complies with the criteria set out as good practice below. Local authorities should also use national and local design policy and guidance (such as local design codes and the *National Design Guide*[151]) to ensure developers are appropriately considering climate change mitigation and adaptation. Encouraging the use of design review for development schemes can help identify design approaches to support climate change mitigation and adaptation.
- Local planning authorities are encouraged to support innovation which secures well designed sustainable developments. Some features that are essential for securing a zero-carbon or energy-positive building, or for adapting to impacts arising from climate change, may give rise to concerns about incompatibility with an existing townscape. Such concerns should not, in themselves, normally warrant planning applications being refused permission. Planning permission may be refused only where the concern relates to a designated heritage asset and the impact would cause material harm to, or the removal of significance in relation to, the asset or its setting, and this is not outweighed by the proposal's wider social, economic and environmental benefits.

Good practice

In determining planning applications, local planning authorities are advised to expect proposed new development to:

- Avoid adding to the vulnerability of existing or other proposed development to impacts arising from climate change.
- Maximise the opportunities of new development to enhance resilience by, for example, reducing the causes of flooding.
- Be consistent with national targets to reduce greenhouse gas emissions set out in the relevant Climate Change Acts and relevant carbon budgets by:
  - using landform, layout, building orientation, tree planting, massing and landscaping to reduce likely energy consumption and increase resilience to increased temperatures;
  - using the layout, density and mix of development to support identified opportunities for decentralised energy;
  - connecting to an existing decentralised energy supply system that has capacity to supply the proposed development or is being designed for a future connection where there are firm proposals for such a system;
  - not creating demand for bio-energy fuels known to result in net carbon dioxide emissions through production methods, transport requirements, and/or the loss of carbon sinks.
- Provide public or private open space so that an accessible choice of shade and shelter is offered, recognising the opportunities for people, biodiversity, flood storage and carbon management provided by multi-functional green spaces and green infrastructure networks.
- Give priority to the use of sustainable drainage systems, paying attention both to the potential contribution to water harvesting to be gained from impermeable surfaces and to layouts that accommodate waste water recycling.
- Support sustainable waste management by providing space for recycling and composting.
- Increase the proportion of trips in the local area made by sustainable modes (particularly active travel modes), by:
  - giving comparative advantages to sustainable travel – for example by placing cycle parking closer to a main entrance than car parking (other than disabled parking);
  - implementing travel plans (unless the scale of the development is small) so as to reduce greenhouse gas emissions;
  - requiring safe and attractive walking and cycling opportunities for all new developments, including secure cycle parking and, where appropriate, showers and changing facilities;
  - managing the provision of car parking (including consideration of charging for use), so that it is consistent with cutting greenhouse gas emissions, including the provision of electric vehicle charging infrastructure; and
  - improving public transport and utilising a travel planning approach.
- Reflect, in cases where the site has not been allocated for development in a development plan document, the site selection criteria set out in Section 3.5.1 of this guide.

151 *National Design Guide*. Department for Levelling Up, Housing and Communities and Ministry of Housing, Communities and Local Government. January 2021. https://www.gov.uk/government/publications/national-design-guide

- Local planning authorities should ensure robust monitoring and reporting regimes for climate mitigation and adaptation, and include climate change indicators in any development management checklists.

4.1.2 Greenhouse gas emissions as a material consideration

There is no doubt that carbon dioxide emissions are a material consideration in planning decision-making. A decision made by the Secretary of State for Housing, Communities and Local Government in 2018 provides useful clarification on how government might expect these issues to be considered, including the importance of the cumulative effect of greenhouse gas emissions:

'The Secretary of State has given careful consideration to the Inspector's analysis at paras IRC112-C115. For the reasons given he agrees that greenhouse gas (GHG) emissions from the proposed development would adversely impact upon measures to limit climate change. He further agrees that most of the GHG emissions would be emitted in the short term, resulting in an adverse effect of substantial significance reducing to minor significance in the medium term; and that greenhouse emissions in the long term would be negligible, but that the effects of carbon in the atmosphere would have a cumulative effect in the long term (para. IRC115). Given that cumulative effect, and the importance to which the Government affords combating climate change, he concludes that overall the scheme would have an adverse effect on greenhouse gas emissions and climate change of very substantial significance, which he gives very considerable weight in the planning balance.'[152]

Batuhan Toker/Thinkstock

Carbon dioxide emissions are a material consideration in planning decison-making

152 See *HJ Banks & Co Ltd v Secretary of State for Housing Communities and Local Government* [2018] EWHC 3141 (Admin). Available at **https://unece.org/fileadmin/DAM/env/pp/compliance/C2018-156/Correspondence_with_the_Party_concerned/frPartyC156_22.10.2019/9_HJ_Banks.pdf**

4.1.3 Assessing renewable energy generation, storage, and distribution

Principles

- Development management should support and not prevent, delay or inhibit proposals for renewable and low-carbon energy and associated infrastructure which could be permitted having regard to the objectives and advice set out in this guide.
- Decision-makers should recognise that energy technologies are rapidly improving, and they should be prepared to deal positively with the implications of new transport and energy technologies, such as battery storage at scale, infrastructure for electric vehicles, and the deployment of hydrogen technology.[153]

Thinkstock

Development management should support proposals for renewable and low-carbon energy

Good practice

In determining planning applications for the development of renewable or low-carbon energy and associated infrastructure, local planning authorities are recommended to:

- Expect applicants to have taken appropriate steps to avoid and then mitigate any adverse impacts through careful consideration of location, scale, design and other measures, including ensuring that all reasonable steps have been taken, and will be taken, to minimise any negative impacts.
- Give significant weight to the wider environmental, social and economic benefits of renewable or low-carbon energy projects and fuel sources, whatever their scale, recognising that small-scale projects provide a valuable contribution to the local area and contribute to security of supply and to cutting greenhouse gas emissions – do not reject planning applications simply because the level of output, or the number of buildings involved, is small.
- Not require applicants for renewable energy development to demonstrate the overall need for renewable or low-carbon energy.
- Expect developers of decentralised energy to support the local planning approach for renewable and low-carbon energy set out in the local development plan, and, if not, to provide compelling reasons to justify the departure – but, otherwise, not question the energy justification for why a proposal for renewable and low-carbon energy must be sited in a particular location.
- Require all major new development to set a robust net-zero energy strategy as a core part of the overall corporate strategy and infrastructure delivery plan. This should cover all aspects of energy consumption, generation, distribution, management, and ownership. Further information on net-zero energy strategies is available in the *Masterplanning for Net-Zero Energy* guide.[154]
- Recognise that, when located in the Green Belt, elements of renewable energy projects may be classed as 'inappropriate development'. Careful consideration should be given to projects' visual impact, and developers will need to demonstrate very special circumstances that clearly outweigh any harm. Such very special circumstances may include the wider environmental benefits associated with increased production of energy from renewable sources.

153 The UK Hydrogen Strategy makes clear that low-carbon hydrogen will be crucial in meeting the UK's legally binding commitment to achieve net zero by 2050. Hydrogen can be manufactured through a carbon-intensive process or a low-carbon process. Today, most hydrogen produced in the UK is high carbon, but to reach the net-zero targets all current and future production will need to be low carbon

154 *Masterplanning for Net-Zero Energy*. Guide 4. Practical Guides for Creating Successful New Communities. TCPA, Nov. 2020. https://www.tcpa.org.uk/tcpa-practical-guides-guide-4-masterplanning-for-net-zero-energy

4.2 Adapting to climate change

An effective and up-to-date plan is vital in ensuring that decisions fully reflect the need to manage the climate crisis. The effectiveness and efficiency of development management depends on the quality and precision of development management policy. Such policy should always set out precise requirements for action on climate mitigation and adaptation.

'Good' development management[155] is a balance between efficient process, policy-compliant outcomes, and effective delivery. Since climate change action is a key legal and policy outcome, it is important that there is an organisational culture that places the climate emergency as a significant material consideration in all decision-making. Where applications are made for development contrary to the development plan, or where a plan is absent or out of date, it is vital that the principles set out in Section 3 of this guide in relation climate impacts are fully applied to development management decisions.

Principles

- Climate change adaptation should be fully considered in all development decisions.
- Local planning authorities should set out clear expectations for the information they require from applicants on climate impacts and ensure that this information is accessible to applicants and the community. These requirements should be made clear in the pre-application process.
- Local planning authorities should ensure applicants are aware of and have access to local evidence on climate change risk, including areas vulnerable to increased flood or heat risk.
- In determining planning applications, the scale, vulnerability and risks generated by a development should be dealt with in proportionate way, depending on nature of the application. Climate impacts must always be considered over the whole lifetime of the development.
- Local planning authorities should ensure that new development does not increase the climate impact risks to existing development or constrain future adaptive pathways designed to deal with overheating or flooding.
- The cumulative impact of minor decisions, for example in relation to paving over gardens, must be fully considered in relation to issues such as surface water flooding.
- Local planning authorities should recognise the growing needs of those seeking to relocate development from vulnerable areas and ensure that such needs are fully considered in decision-making.

155 *Good Development Management*. Planning Advisory Service, Jun. 2019. https://www.local.gov.uk/pas/development-mgmt/good-development-management-practice

Good practice

Local planning authorities are recommended to:

- Consider and prioritise the use of nature-based solutions and natural capital approaches in the design of a new design of development. Guidance issued by the Environment Agency[156] details how nature-based solutions can be used to reduce flood risk.
- Build in resilience to future risks (using climate change allowances to identify these risk) in the design of new development (for example flood defences or finished floor levels that mitigate risk to future flood levels based on the climate change allowances).
- In flood risk areas promote design of development that includes property level flood resilience to manage residual risks (as well as built-in resilience, outlined above).
- Use multi-functional approaches to policy delivery in development to maximise outputs for climate resilience and wider objectives. For example, use biodiversity and environmental net gain targets as opportunities to adapt to climate change through multi-functional green infrastructure; and also use multi-functional sustainable urban drainage systems rather than 'grey' drainage – for example underground tanks – that also deliver wider gains for climate change adaptation, biodiversity and the community.
- The design of sustainable drainage systems and long-term canopy cover should be considered from the outset, and local planning authorities should work closely with landowners, engineers, designers, and contractors. GreenBlue Urban's *Trees and Water Sensitive Urban Design*[157] offers more detailed guidance on this.
- Ensure that water efficiency policies in the local development plan (i.e. higher levels of water efficiency) are delivered in new residential development. Seek voluntary additional measures to further improve domestic water efficiency where there is evidence of local needs.
- Ensure that water efficiency policies in the local development plan for commercial development are met. Seek additional water efficiency measures to further improve commercial water efficiency where there is evidence of local needs.
- Ensure that homes are designed and built with overheating in mind (see **case study CA4** on Eastleigh Borough Council's policy on overheating). Consider using assessment frameworks to ensure that criteria are met.
- Monitor the outcomes of adaptation measures to build the case for further projects in future.

156 *Use Nature-Based Solutions to Reduce Flooding in Your Area*. Guidance. Environment Agency, Jun. 2021. **https://www.gov.uk/guidance/use-nature-based-solutions-to-reduce-flooding-in-your-area**; and *Working with Natural Processes to Reduce Flood Risk*. Flood and Coastal Erosion Risk Management Research and Development Programme and Environment Agency, Feb. 2021 **https://www.gov.uk/flood-and-coastal-erosion-risk-management-research-reports/working-with-natural-processes-to-reduce-flood-risk**

157 *Trees and Water Sensitive Urban Design: Volume 2*. GreenBlue Urban, Jun. 2019. **https://greenblue.com/gb/resource-centre/trees-and-water-sensitive-urban-design-volume-2/**

section 5
conclusion

Addressing climate change must be a central priority of the planning system if we are to secure our future economic, environmental and social wellbeing. This guide sets out some of the ways that local authorities and communities can make a real difference in tackling the climate crisis. ***The threat of climate change is real, and time is running dangerously short. A resilient and sustainable future is achievable, but only if we act now.***

section 6
sources of further information

The key legal and policy documents relating to planning for climate change are set out in Section 2 of this guide. This Section provides a list of useful documents related to various aspects of tackling the climate challenge through planning. For up to date examples of policy, guidance and best practice visit the TCPA Planning for Climate Change Case Study Hub at **www.tcpa.org.uk/resources/climate-guide-case-studies**

6.1 Climate change mitigation

Energy

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Sustainable transport and active travel

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London SW1Y 5AS

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