Greater Cambridge Local Planning Support on Net Zero Carbon:

Changes in the national policy landscape since previous (2021) work

24 July 2025

Version 2

Published as part of the Draft Local Plan - Regulation 18 consultation (December 2025 - January 2026)

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Introduction

Bioregional, along with colleague organisations Etude and Currie & Brown, is appointed to support Greater Cambridge Shared Planning Service (GCSP) in formulating approaches through which the Greater Cambridge Local Plan could strive towards net zero carbon in the plan area.

This builds on a previous appointment in 2019-2021 in which this consultant coalition produced:

a. Exploration of the definition of net zero and the associated planning mandates and powers for net zero carbon policy in local plans, including via legislation, national policy and precedents elsewhere
b. Analysis of the impact of different spatial choices on the carbon emissions associated with new development
c. Establishing reasonable and justifiable carbon reduction targets that the area as a whole could aim for, and policies that would be effective in delivering these
d. Energy modelling to test the feasibility of meeting the new build performance standards on energy and carbon
e. Cost modelling of the net zero carbon new build standards, which was fed into the 2021 viability assessment
f. Exploring the role that carbon offsetting could and should play in policy implementation.

Our current appointment to support GCSP in this effort comprises the following:

1. **National policy review exploring changes since the previous work (2021)** that may impact the mandate or powers for net zero carbon local plan policy.
2. **Summary of the voluntary UK Net Zero Carbon Buildings Standard** and consideration of whether it could or should be used in policy.
3. **Assessment of the local area's carbon budgets (as a share of overall UK carbon budgets) and contribution of the proposed policies towards achievement of those carbon budgets.**
4. **Updating the estimated costs to meet the proposed local policy, to bring these in line with today's costs and to reflect the change in baseline since the update to building regulations Part L that came into force in mid-2022.**

This report comprises Output 1. Along with this report itself we are also providing a review of GCSP's draft 'Net Zero' topic paper in which some of this content is referred to.

As this this report involves complex concepts and is an update to the 2021 work, we advise familiarising oneself with the previous reports (to be found here where they were published in August 2021 by GCSP. Here in this abstract we also provide some of the headline points from this update work.

Purpose of this document

Local planning authorities (LPA) have a legal duty to mitigate climate change (deliver carbon reductions) via the planning process, and national planning policy confirms these reductions should be in line with the Climate Change Act. The Climate Change Act includes both the 2050 goal for a net zero carbon UK, and sharply declining five-yearly carbon budgets until then.

These points were referred to in the previous 'Literature Review' and non-technical summary report for GCSP (produced 2019-2021, finalised July 2021) which also explored how national policy and other legislation either empower or constrain the local plan's ability to act on delivering the local area's share of those carbon budgets. However, since that previous work, there have been several changes to national policy, regulation, legislation, relevant legal cases, and new guidance from the industry that is now relevant to review. Those changes include:

- **Legislation**
  - The Environment Act 2021
  - The Levelling Up & Regeneration Act 2023
- **National policy:**
  - December 2024 updated National Planning Policy Framework (NPPF)
  - Changes to extant Written Ministerial Statements (WMS), specifically that a previously important WMS from 2015 is now fully obsolete but a new WMS on energy efficiency in local planning was introduced in 2023
- **Progress towards the UK's legislated carbon budgets:**
  - The latest carbon budget(s) that have been legislated or are now proposed
  - The latest evidence on the extent to which national forces (policy or industry momentum) are or are not delivering the required carbon reductions, thus implying a need for local policy to go further
- **Regulation**
  - Updates to Part L of Building Regulations (the part of Building Regulations that sets national minimum standards for energy and carbon of buildings)
  - Third-party evidence of the energy and carbon performance of these new versions of Part L (current, and 2025 i.e. the Future Homes Standard)
- **Precedent policies elsewhere**
  - Three plans adopted in 2023 that include 'net zero carbon' buildings policies using metrics other than the national ones
  - Planning Inspectors' reactions to such policies (and alternative 'net zero' policy formulations) at examination in public
- **Legal cases and legal correspondence**
  - High Court case finding that the rejection of a 'true net zero' policy was unlawful because the rejection was based on improper interpretation of national policy
  - Legal correspondence and court case(s) seeking to demonstrate unlawfulness of a specific national policy that purports to constrain local policy on net zero
  - Court case finding national carbon reduction strategy unlawful in its insufficiency.

Coverage and topics of this document

This report's purpose is to inform the GCSP on how those changes may impact the extent to which local plans can and should act towards reducing carbon emissions, ultimately to 'net zero'. This report therefore has two functions:

- To enable GCSP to make informed choices about policy that is aimed at carbon reduction (and ultimately net zero carbon) in the emerging Greater Cambridge Local Plan.
- To support the logical basis by which such policies can be justified at the Examination in Public, which will be necessary for the Planning Inspector to approve their adoption.

This report does this by reviewing the new literature available on the subject, including legislation, relevant national policies, planning sector expert organisation guidance, carbon accounting sector expert guidance and data at national and local level, sustainable construction industry analysis, open legal advice, and recent 'precedents' of various carbon-reducing policies in local plans elsewhere since 2021, including how Planning Inspectors have reacted to these.

The intent is that with this deeper and broader understanding, the GCSP will be enabled to proceed to the next stages of formulating robust policies towards carbon reduction and making the arguments necessary to demonstrate at Examination in Public (EIP) that its policies are sound. Insights from this document may also eventually form part of the EIP evidence base.

This document's function is not to identify specific policy options. Rather it is to inform GCSP about any recent changes to the imperatives laid upon the local plan to act on carbon reduction, and the ways in which this can be and has been done in the current context.

Headline insights

The key driving force to justify such policy remains the legal duty for the local plan to mitigate climate change, which was originally set by the Planning & Compulsory Purchase Act 2004 but is now reiterated in the Levelling Up & Regeneration Act 2023 (LURA). The extent to which that mitigation is to be taken remains defined in the NPPF 2024, i.e. it should be in line with the Climate Change Act 2008. This means action should be taken to achieve not only the 2050 net zero goal, but also the intermediate 5 yearly carbon budgets that are devised by the Climate Change Committee and legislated by Parliament via that 2008 Climate Change Act.

Data still shows that national progress (policy and industry) is not going far or fast enough to meet the carbon budgets and net zero goal, including in many topics that a local plan could influence, for example:

- Exemplary energy efficiency in new builds, especially in thermal fabric
- Clean heat in new buildings (not gas, oil, coal or other fossil fuel)
- Renewable energy provision on new buildings
- Other renewable energy capacity growth, whether standalone or on existing buildings
- Active travel / public transport
- Enabling energy retrofit of existing buildings (upgrading fabric to retain heat, switching from gas to heat pumps or waste heat, and adding renewable energy equipment).

The local plan has powers to act on these topic areas, stemming from the provisions in the Planning & Energy Act 2008 (P&CPA) and Town & Country Planning Act 1990 S106 (T&CPA). This includes the power to set standards for energy efficiency, renewable energy provision and carbon reductions that exceed national building regulations Part L (PCP Act), and to seek payment from developers to remedy where their proposals fail to meet standards (T&CPA). Additionally, local plans can make spatial choices that minimise carbon emissions from transport. These powers have been used in various ways by other local authorities, although this report focuses mainly on policy for low or zero-carbon buildings.

As explored in the previous (2021) work, the definition of the carbon for which a building is responsible (thus a 'zero carbon building') is subject to differing approaches in the industry and therefore in the precedent policies from elsewhere. These broadly fall into two camps:

- Building regulations Part L – this defines a building's energy use and carbon by using the National Calculation Methodologies, named SAP (for homes) or SBEM (for other buildings). It sets limits per m^2 per year for carbon, heat demand, and "primary energy." These calculations only cover part of the operational carbon (energy use) but omit embodied carbon (materials/construction) and 'unregulated' energy use. As a result, the Part L definition of zero carbon is not truly net zero. **This remains the case in the current version of Part L that came into force in mid-2022 ("Part L 2021") and in the indicative specifications for the version that is due to come into force in 2025 (Future Homes Standard / Future Buildings Standard).**
- Industry professional bodies LETI and RIBA, and now also the new UKNZCBS coalition, all agree that Part L metrics and calculation methods are insufficient and that the more effective metrics that should be used instead are EUI (total energy use intensity), space heat demand per m^2, and that a 'net zero' building must have renewable energy to annually match the entirety of that energy use.

While the majority of 'net zero' policy precedents use Part L metrics, these are mostly older examples. A more recent vanguard (of which three adopted precedents to date, all of which were adopted in 2023) instead uses the EUI/SHD metrics. These are Cornwall Climate Emergency DPD, Bath & North-East Somerset Local Plan Partial Update, and Central Lincolnshire Local Plan. However, despite the industry's general message that EUI/SHD are more effective, and necessary for the national carbon budgets, the erstwhile Government released a new national policy in the form of a written ministerial statement in 2023 (WMS2023) which purports to require the use of Part L metrics instead. A section of the current report discusses the extent to which that national policy is or is not binding in light of the legal obligation to mitigate climate change. Also, it is noted that since that WMS2023 there have been further local plan documents progressing through the examination process with policies based on EUI/SHD targets, therefore diverging from the WMS2023. At least one of those has come through EIP with the EUI/SHD targets still intact (Tendring Colchester Borders Garden Community DPD), although the reverse is true in the case of the emerging Isle of Wight 'Island Planning Strategy'.

For further context, this report explores the recent carbon emissions of Greater Cambridge local plan area.

Glossary of terms and acronyms

BREDEM	Buildings Research Establishment Domestic Energy Model. A methodology to estimate the energy use and fuel needs of a home based on its characteristics. BREDEM is the basis for SAP, but BREDEM retains more flexibility by allowing the user to tailor some assumptions made in the calculations to better reflect the project.
Carbon, or carbon emissions	Short for 'carbon dioxide emissions' but can also include several other gases with a climate-changing effect, that are emitted to the atmosphere from human activities (see 'GHG', below).
Carbon budget	Amount of greenhouse gas that can be emitted by an individual, organisation or geographic area. Usually set to reflect a 'fair share' of the global amount that can be emitted before reaching a level of atmospheric carbon that causes severely harmful climate change.
Carbon intensity/ carbon factors	A measure of how much carbon was emitted to produce and distribute each kWh of grid energy at a certain point in time. For electricity, this has been falling as coal-fired power stations have been phased out over years. It also varies on an hourly basis: at times of high renewable energy generation, the carbon intensity is lower than at points where gas-fired electricity dominates the generation mix.
CIBSE	Chartered Institution of Building Services Engineers.
CO_2	Carbon dioxide. Often shortened to 'carbon'.
CO_2e	Carbon dioxide equivalent. The sum of a mixture of gases, in terms of their climate-changing impact in a 100-year period expressed as the amount of CO_2 that would have the same effect. Often shortened to 'carbon'.
Embodied carbon	Carbon that was emitted during the production, transport and assembly of a building, infrastructure, vehicle or other product, before the product is in use. As opposed to 'operational carbon' which is emitted due to energy use when operating the building / infrastructure / vehicle / other product.
EUI	Energy use intensity, a measure of how much energy a building uses per square metre of floor. Expressed in kilowatt-hours per square metre of floor space per year.
FHS / FBS	Future Homes Standard / Future Buildings Standard. These are updated versions of Part L of Building Regulations, expected to be implemented from 2025.
GHG	Greenhouse gas (CO_2 and several other gases: methane, nitrogen dioxide, and fluorinated refrigerant gases). Often collectively referred to as 'carbon'; see above.
ICROA	International Carbon Reduction and Offset Alliance.
ICVCM	Integrity Council for Voluntary Carbon Markets.
IPCC	Intergovernmental Panel on Climate Change. An international entity set up via the United Nations, of which the UK is one of the 195 member states. The IPCC's role is to assess the consensus within the global scientific studies on climate change, including the extent and effects of climate change and future predictions about how much climate change will occur depending on how much greenhouse gas is emitted.
LETI	Low Energy Transformation Initiative. A coalition of built environment professionals working to establish and achieve the energy performance needed for net zero.
LPA	Local Planning Authority.
MVHR	Mechanical Ventilation with Heat Recovery
NPPF	National Planning Policy Framework. A central government document laying out how the planning system should function, including plan-making and decisions.
Part L	Building regulations section that sets basic legal requirements regarding buildings' energy and CO_2 emissions, for a certain scope of buildings' energy use.
Performance gap	The difference between the amount of energy a building is predicted to use during design, versus the actual amount of energy it uses. The gap is due to poor prediction methodologies, errors in construction, and unexpected building user behaviour.
PV	Photovoltaics: solar panels that generate electricity.
PHPP	Passivhaus Planning Package: A tool to accurately predict a building's energy use. It is used to design buildings that seek Passivhaus certification, but can equally be used to improve any building design process even without pursuing certification.
Regulated energy or carbon	Carbon emissions associated with energy uses that are 'regulated' by Building Regulations Part L. This covers permanent energy uses in the building, (space heating, space cooling hot water, fixed lighting, ventilation, fans, and pumps).
RIBA	Royal Institute of British Architects.
SAP	Standard Assessment Procedure – the national calculation method for residential buildings' energy and carbon, used to satisfy building regulations Part L. SAP is based on the BREDEM model, but with fixed assumptions and thus less flexibility.
SAP Appendix L	An appendix to the SAP (explained above) which estimates unregulated energy use, whereas the main body of SAP estimates only regulated energy use. Appendix L was created when it was anticipated that national regulations would require fully zero carbon homes from 2016, which in fact never was enacted. As Appendix L has not since been updated, it overestimates unregulated energy demand because it was based on older data about the energy efficiency of household appliances.
SBEM	Simplified Buildings Energy Model – the national calculation method for non-residential buildings' energy and carbon, used to satisfy building regulations Part L.
Sequestration	Removal and storage of greenhouse gases from the atmosphere, to prevent their harmful climate-changing role. Currently only achieved at scale by trees/plants/soil.

Space heat demand	Amount of energy needed to heat a building to a comfortable temperature. Expressed in in kilowatt-hours per square metre of floor space per year.
TER	Target Emission Rate – a limit set by Part L of building regulations on CO_2 emissions per square metre of floor, from regulated energy use in the building.
TPER	Target Primary Energy Rate – limit set by Part L of building regulations on 'primary energy' use per square metre of floor. Unlike metered energy, 'primary energy' takes into account energy lost to inefficiencies during power generation and distribution.
TFEE	Target Fabric Energy Efficiency – limit on space heat energy demand per square metre of floor, set by Part L of building regulations. Based only on fabric; not affected by building services like heating system, lighting, ventilation[i].

TM54,	A method to accurately calculate buildings' energy use. Devised by CIBSE (as above).
Unregulated energy or carbon	Carbon associated with energy use in a building or development but which is not covered by Building Regulations Part L. Includes plug-in appliances, lifts, escalators, external lighting, and any other use not covered by Part L.
UKNZCBS	UK Net Zero Carbon Buildings Standard. A standard to align buildings to the performance necessary for the UK's transition to net zero carbon (in line with the carbon budget needed to limit climate change to 1.5°C as per the Paris Agreement). Please note the meeting this standard aligns buildings with that carbon budget, but does not necessarily make the building net zero carbon in itself. This standard was devised by a coalition of leading UK building industry experts and standard-setting bodies including LETI, CIBSE, RIBA and others. The standard was first released in pilot form in the second half of 2024.

Full Report

Recap of previous reports 2020-21

The previous 'Literature review and position statement' report for Greater Cambridge (2020), the March 2021 Addendum, and the July 2021 Non-Technical Summary, identified the following key points:

The local plan's legal duty to mitigate climate change (Planning & Compulsory Purchase Act 2004)

The local plan is legally obliged to have "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" – as established in the Planning & Compulsory Purchase Act 2004, section 19.

National legislated transition to net zero by 2050 (Climate Change Act 2008 & 2019 update)

The previous report highlighted that:

- The Climate Change Act 2008 not only requires the UK to reach net zero greenhouse gas emissions by 2050, but also obliges the UK parliament to set legally binding 'carbon budgets' for each 5-year period from 2008 to 2050, no less than 12 years before the respective period.
- The analysis that sits behind those legislated carbon budgets, produced by the Climate Change Committee (CCC), had shown that in order for those legally binding carbon goals to be achieved, the following would all be necessary:
    - New homes from 2025 should have very low space heat demand (15-20kWh/m^2/year) and low-carbon heating (such as a heat pump, instead of a gas boiler)
    - Near-complete elimination of greenhouse gas emissions from all UK buildings
    - Both of the above were established in analysis published in February 2019, when the Climate Change Act's 2050 target was only an 80% reduction on 1990 emissions. Later in 2019, the Act's 2050 target became 'net zero', thus the minimal space heat demand and low carbon heat specifications may now be even more vital.
    - Almost all replacement heating systems for existing homes to be low-carbon by 2035, so that the share of low-carbon heating is 90% in 2050, up from 2019 baseline of 4.5%
    - A quadrupling of the UK's renewable energy capacity by 2050, compared to 2018/19
    - 1/5 of UK agricultural land to convert to woodland, biomass, or peatland restoration
    - Widespread deployment of carbon capture and storage technologies (CCS) (in a 2050
- The CCC analysis had also strongly recommended that the UK's legally binding carbon budgets (including the 2050 net zero goal) should be met within the UK, without using any 'carbon credits' from overseas (e.g. overseas tree planting), whether or not the legislation allows this. The exception was for sectors that are considered unfeasible to fully decarbonise at source (e.g. aviation and cement production) and even for those, the CCC advised that overseas credits should only be considered if the anticipated CCS and hydrogen technologies fail to emerge.

Our previous reports noted that the UK had committed to the 2015 Paris Agreement which aims to limit climate change to ≤2°C and ideally 1.5°C, which could be considered a piece of 'national policy' that local plans should align to. The binding carbon goals of the Climate Change Act represent, in theory, the UK's domestic implementation of the Paris Agreement. However, our reports also noted that research from leading UK climate academics (Tyndall Centre) had found that the Act's carbon budgets set by the CCC are twice as large as they would need to be to fulfil the aims and equity principles of the Paris Agreement. This was because the CCC carbon budget included allowances from the EU emissions trading scheme and assumed the future emergence of carbon-removal technologies. We also noted uncertainty on the extent to which the Paris Agreement (as opposed to the Climate Change Act) affects the UK planning system, illustrated by a legal case on Heathrow third runway.

Existing legislation or regulation regarding the energy and carbon performance of new buildings

Building Regulations Part L was and still is the section of building regulations that set minimum standards regarding the design of buildings regarding energy and carbon emissions. At the time of the previous work, the version of Part L in place was Part L 2013, which had been in place for approximately 7 years without improvement in the standards that buildings needed to meet.

Key observations about Part L in the previous Greater Cambridge reports included that:

- Part L 2013's standard for heating in new homes was a gas boiler, which is incompatible with the UK's carbon budgets from 2025 onwards in new homes (or from 2035 in existing homes).
- An update to Part L would occur in 2021 (more roof insulation and addition of solar panels, but still with a gas boiler) then a further update was in 2025 (the Future Homes Standard, anticipated to consist of further insulation and glazing, and 'low carbon heating' instead of a gas boiler, but without solar panels, thus not net zero until the electrical grid is net zero).
- The targets set by Part L are derived from applying a certain specification of fabric and services to a building the same size and shape (form) as the proposed building – therefore the targets vary by the form of the building, rather than being absolute targets, and therefore Part L does not incentivise the design of buildings to have an inherently thermally efficient form.
- Part L calculation methodologies SAP and SBEM (which generate Part L's targets and calculate whether a building meets those targets) do not cover the building's total energy use nor are they accurate in predicting the energy uses that they do attempt to cover. They are therefore:
    - Not suitable to set standards for true net zero carbon buildings (as per the industry general consensus that 'net zero carbon' should mean equal renewable energy generation as demand on an annual basis)
    - Not suitable means to ensure that buildings' energy efficiency performance meets any specific standard of actual performance in reality.
- Given that the UK's legislated carbon budgets are absolute and must be achieved in reality, this means that Part L SAP/SBEM metrics are not suitable for expressing local plan policies to align with the Climate Change Act, nor the local plan's duty to mitigate climate change (given the NPPF instruction that this mitigation should be in line with the Climate Change Act).
- The 2021 and 2025 updates to Part L would still use the same logic of setting targets that vary by building form, thus they too would be unaligned with the UK's binding carbon goals.

It was noted that alternative energy prediction methods do exist (PHPP or TM54), which were endorsed by green buildings industry thought leaders such as LETI.

Additionally, the report noted that neither Part L nor any other part of Building Regulations addressed embodied carbon – that is, the carbon emissions caused by the production, transport and assembly of construction products to create a building (or replacement/maintenance of those products over their lifecycle, and their eventual demolition and disposal). The report cited data from industry-leading green buildings bodies showing that embodied carbon can represent between 67-76% of the whole-life carbon of new buildings, but noted that the majority of this would occur outside the local plan area (unless manufactured locally) and also that there was variation between different building carbon inventory approaches on whether embodied carbon must be included as part of a 'net zero carbon' building or not. Still, we noted that there was an industry consensus standard on how to account for whole-life embodied carbon and that several industry bodies had set targets using this method.

Local existing carbon emissions context and commitments to carbon reductions

Our work acknowledged that both of the respective councils that govern the Greater Cambridge Local Plan Area had declared a climate emergency, and that they had made respective commitments:

- Cambridge City Council had committed to making its area net zero carbon by 2050.
- South Cambridgeshire District Council had pledged that "all strategic decisions, budgets and approaches to planning decisions by the council [would be] in line with a shift to zero carbon"

We also summarised existing analysis by local academics that explored the County-wide area's emissions (territorial only). It had found that the largest contributor by far was transport, followed by non-residential buildings, then domestic buildings. However, it had found that if peatland emissions were also included, these increased the total by 65%-90. It had also explored future scenarios for a net zero carbon Cambridgeshire, including exploring the extent to which tree planting could contribute. Our reports also explored other estimations of the GCLP area's emissions (Tyndall Centre and SCATTER), including what should be included and what reduction trajectory should be pursued.

Definitions of 'net zero' carbon at different scales

We established that, depending on what scale is being looked at – from national to local to building-level – there is variance in scope of what carbon emissions count towards "net zero". We also noted differences in opinion in industry and government. For example, some entities consider that 'embodied carbon' is part of the scope of a 'net zero carbon building'; however, some embodied emissions occur outside the UK, thus would not be part of the 'net zero carbon UK' scope in the law that forms the primary justification for policy. As a result, local policy should logically be designed to tackle a specific emissions scope, whether that is 'net zero Greater Cambridge', 'net zero UK', or 'net zero building'.

To conceptualise the appropriate scope, the report explored several carbon accounting methodologies:

- National: The scope of emissions in the UK's legislated carbon budgets and progress reports by the CCC. This includes only UK territorial emissions (not overseas emissions to produce or transport products to the UK). The legislation allowed overseas carbon credits to meet UK carbon targets, but the CCC advised not to, and they had not been used to meet UK targets yet.
- Local or regional area level carbon accounting:
    - Global Greenhouse Gas Protocol for Cities (GP): Dividing emissions into 'scope 1, 2 and 3' depending on whether they are directly or indirectly caused by the local area.
    - PAS2070 – laying out two possible scopes; one aligned with the GPC as above, or one that is consumption-based and not divided into scopes.
    - Tyndall Centre – analysis of what the UK's national and local carbon budgets should be if the UK is to deliver on its Paris Agreement commitment to limit climate change to 2°C. Local carbon budgets were energy-only, CO_2-only (excluding other greenhouse gases or any CO_2 emissions from activities other than energy and fuel use, e.g. agriculture).
    - SCATTER by Anthesis – a tool that builds on the Tyndall Centre carbon budgets to add back in the other greenhouse gases and emissions sources other than fuel use.
    - CUSPE – academic research into Cambridgeshire's 2019 territorial carbon emissions (no imported goods); this noted that if peatlands are included they add 65-90% to the total.
- Building-level:
    - Building Regulations Part L
    - Low Energy Transformation Initiative (LETI) operational net zero: Setting limits for energy demand, space heat demand, and requiring 100% renewable energy.
    - UK Green Building Council Framework Definition of Net Zero.

Additionally, the report also noted that energy efficiency targets (energy use intensity, EUI) are set in the RIBA Climate Challenge although this was not a carbon accounting framework.

It was noted that in these varying carbon accounting methodologies, some only look at CO_2, while others look at a group of gases that have a greenhouse effect, with the most common 'full set' including methane, nitrous oxide and F-gases alongside CO_2.

Additionally, the local area carbon accounting methodologies varied in the scope of which activities' carbon emissions are counted, depending on the purpose for which each methodology was designed.

Comparing the above methodologies for 'net zero' buildings, it was noted that:

- Part L only covers fixed heating, fixed lighting, fans and pumps (thus neglecting a lot of the energy use and associated carbon emissions that are part of the local and national carbon account) and entirely neglects to cover embodied carbon. It also is calculated using methodologies (SAP and SBEM) that have a track record of dramatically underestimating buildings' energy use and space heat demand. Part L and its calculation methods were therefore not considered an appropriate way to define and deliver 'net zero carbon buildings' in any local plan policy whose goal is to proactively help deliver the UK's legislated carbon targets, the UK's Paris Agreement pledge, or any goals for a net zero carbon local area by any set date.
- Part L targets are all set in relation to the proposed building's size and shape, meaning any Part L metrics are relative and thus miss opportunities to ensure sensible choices in size and shape that would reduce absolute energy use through reduced heat loss from building surfaces and joins. Along with Part L calculation methods' inaccuracies and limited scope described above, this is a further reason why Part L metrics are not suitable to ensure that buildings are in line with the UK's legislated carbon budgets, which are absolute not relative.
- LETI and RIBA both emphasise that energy use calculations should include all energy uses in the building, not just the regulated ones, and that energy efficiency targets should be absolute, not varying by building shape and size nor as a percentage reduction relative to a baseline. Neither LETI nor RIBA require energy use to be converted to carbon, but LETI's required 'net zero energy' balance would effectively ensure net zero carbon in operation.
- The approaches differed in whether embodied carbon should be part of the 'net zero' scope (UKGBC), or should be separately reduced albeit not to zero (LETI) or completely neglected the topic of embodied carbon at all (Building Regulations Part L).
- The approaches differed in whether the carbon emissions of energy use must be mitigated using on-site renewable energy generation, or could be met through offsetting credits or green tariffs if these meet certain additionality criteria (UKGBC).

However, commonalities across the local-level approaches included that:

- It is reasonable to set a scope that reflects the purpose of the carbon accounting exercise
- Any offsetting credits bought from outside the local area should not be deducted from the area's net emissions balance; if these are used at all they should be treated separately from the territorial emissions.

Therefore, it was concluded that any policy aiming to realise a goal for a 'net zero Greater Cambridge' would need to ensure new buildings are net zero carbon on their own, without offsets from outside the plan area (and certainly never from outside the UK as this would not contribute to UK carbon budgets).

Powers available to the local plan to mitigate climate change:

The previous report identified that the following pieces of legislation were the key sources of power that the local plan could use to ensure that development in its area would have improved carbon performance compared to an absence of policy:

- Planning & Energy Act 2008 – empowering the local plan to set "reasonable" requirements for:
  - Energy efficiency standards that exceed those set by Building Regulations (defined 'energy efficiency standards' as standards for energy efficiency that are endorsed by the secretary of state – whereby the report noted that this could be interpreted to mean a standard expressed using the energy efficiency metrics of Building Regulations).
  - A proportion of energy use at the development to be from renewable sources (whereby 'energy use' is not defined in the Act, thus is not limited to only regulated energy use).
- Town & Country Planning Act 1990
  - Section 106 – contributions by developers to mitigate development impacts (which in some cases had been used to raise carbon offset payments)
  - Section 61a – local development orders can be made which grant default or streamlined permission to certain types of development (which in some cases had been used to support renewable energy development or low carbon energy network expansion).

In addition to specific powers, the local plan's general function of deciding *where* growth could occur was noted to present great opportunities in minimising the likely amount of transport emissions that would be associated with new development and GHG emissions associated with land use change (noting that this local plan takes place in a region with a significant amount of the UK's remaining peatlands, which can be a major sink and store for greenhouse gases, but which become a significant source of emissions when drained or farmed). The point on transport carbon was supported by the separate analysis by the same consultant team, showing the estimated differences in carbon emissions of new growth in Greater Cambridge, depending on where that growth occurs.

National policy on what the local plan should pursue in terms of carbon reductions and what sort of steps were appropriate in that pursuit

The National Planning Policy Framework (NPPF) was the primary source of national policy considered in the previous report. The version of the NPPF in place at the time of writing the previous report was the 2019 edition, within which the following content was noted as particularly relevant:

- Paragraphs 7-8: "The purpose of the planning system is … the achievement of sustainable development" which is made up of "three overarching objectives" of which one is "an environmental objective" which includes "mitigating and adapting to climate change, including moving to a low carbon economy".
- Paragraph 148: "The planning system should … shape places in ways that contribute to radical reductions in greenhouse gas emissions".
- Paragraph 149 & footnote 48: "Plans should take proactive approach to mitigating … climate change … in line with the objectives and provisions of the Climate Change Act 2008"
- Paragraph 150: "New development should be planned for in ways that … help to reduce greenhouse gas emissions, such as through its location, orientation and design".

This was interpreted to mean that the NPPF 2019 provided a strong mandate to design policy that would ensure new growth in Greater Cambridge is aligned with the Climate Change Act carbon targets.

However, the report also noted the existence of contradictory pieces of national policy that might inhibit that goal, including the Written Ministerial Statement 2015 (WMS2015, which purported to limit new build carbon policies to requiring no more than 19% reduction on the Building Regulations Part L 2013 TER) and certain parts of the Planning Practice Guidance (PPG) which repeated the content of that WMS2015. Yet the report noted that several adopted local plans had since successfully exceeded the limit purportedly set by the WMS2015, and the report also cited a 2018 national government statement that confirmed "local authorities are not restricted in their ability to require energy efficiency standards".

It was concluded that the national policy position was highly ambiguous (whereby the WMS2015 and PPG were contradicted by the 2018 NPPF statement) whereas the duty to mitigate climate change at national level (Climate Change Act) and at local level (Planning & Compulsory Purchase Act) were much clearer.

Finally, although it was not mentioned specifically in the previous report, we note that the NPPF 2019 footnote 49 stated that wind energy development should not be approved unless in a location specifically identified in the local plan as suitable for this and if the proposal's "impacts identified by the affected local community have been fully addressed and the proposal has their backing". This effectively worked as a moratorium on wind energy development as it meant that any wind development proposal could be prevented by even a single objector.

Precedents of local plans that had pursued carbon reduction policies

In the previous report, as far as the research was able to uncover, all the available precedents had either been expressed in terms of Building Regulations metrics (% reductions on the Part L Target Emission Rate) or simply "net zero carbon" without the policy itself clarifying the scope of which building-related emissions should be brought to zero (for example, regulated or unregulated energy, and by what methodology this should be calculated). Several such policies had also been structured around the increasing levels of the Code for Sustainable Homes, which had already been withdrawn in 2015 (which, along with the aforementioned WMS2015, made such policies obsolete).

The report noted that despite the WMS2015 (see 'national policy' above), several adopted local plans went beyond the 19% TER reduction limit that the WMS2015 had purported to set. Examples included:

- Milton Keynes 2019: 19% reduction on Part L 2013 TER, plus a further 20% reduction via renewable energy (these together would compound to create a total of 35.2% reduction on Part L 2013 TER). Applies to all major residential, and non-residential over 1,000m^2 floorspace.
- London Plan adopted 2016: A 35% reduction on Part L 2013 TER, in all major development
- Reading Local Plan adopted 2019: A 35% reduction on Part L 2013 TER, in major residential
- Oxford Local Plan adopted 2020: A 40% reduction on Part L 2013 TER, in all residential and in non-residential over 1,000m^2 floorspace, rising to a 50% reduction from 31 March 2026.

It was noted that some of these policies were structured around ensuring that a certain degree of carbon reduction (on TER) must be made through specific types of energy performance improvement:

- Via energy efficiency measures - in the London Plan this was 10% in residential and 15% in non-residential, respectively.
- Via renewable energy – in Milton Keynes this was 20%, or in South Cambridgeshire's existing local plan (2018) it was 10%.

Some other local plans expressed the requirement for renewable energy generation at new development in terms of a percentage of that development's energy demand. In some cases this was a percentage of regulated energy only, while in others it was a percentage of total overall demand (Merton Plan 2003, and Spelthorne Borough DPD 2009; both 10%).

In London, Reading and Milton Keynes these policies also required the remainder of regulated carbon emissions (for a 30 year period) to be offset via a payment to the local authority that would be spent on delivering the equivalent amount of carbon reductions in the local area.

These policies were generally noted to have a successful track record of implementation, although it was noted that the mechanism of offsetting through payments was somewhat risky in that it might not be spent on projects that save the required amount of carbon, or if unspent in the required timeframe it would have to be handed back to the developer. However, this was fairly rare.

There was great variation in the degree of evidence that each of these plans had taken to justify the policies at examination, for example on how the % reduction levels were chosen and about feasibility and cost uplift.

Recap of Greater Cambridge Local Plan draft policy (GCLP First Proposals version, 2021)

Following the 2019-2021 net zero carbon evidence report suite, the GCLP First Proposals plan went to consultation in November-December 2021. That included an entire climate chapter, whose aim is to "Help Greater Cambridge transition to net zero carbon by 2050", with reference to the UK's legislated carbon goals, the Tyndall Centre local carbon budgets, and the local plan's legal duty on climate.

This included a proposed **Policy CC/NZ** which would require that:

- New buildings are net zero carbon in operation, by meeting the following points:
    - No fossil fuel use in the building and no connection to gas grid (all building types)
    - A. Space heat demand (all building types) of 15-20kWh/m^2 floorspace/year
    - B. Total Energy Use Intensity (EUI, including regulated and unregulated energy):
        - Offices: ≤55 kWh/m^2 floorspace/year
        - Schools: ≤65 kWh/m^2 floorspace/year
        - Residential, including multi-residential: ≤35 kWh/m^2 floorspace/year
        - Retail: ≤55 kWh/m^2 floorspace/year
        - Leisure: ≤100 kWh/m^2 floorspace/year
        - Research facility: ≤150 kWh/m^2 floorspace/year
        - Higher education teaching facilities: ≤55 kWh/m^2 floorspace/year
        - Light industrial: ≤110 kWh/m^2 floorspace/year
        - GP surgery: ≤55 kWh/m^2 floorspace/year
        - Hotel: ≤55 kWh/m^2 floorspace/year.
    - C. Generate at least the same amount of renewable energy (preferably on-plot) as they demand over the course of a year. This should include all energy use (regulated and unregulated), calculated using a methodology proven to accurately predict a building's actual energy performance.
    - D. Where part C (above) cannot be met in certain circumstances, the development must still be designed so that future occupiers can easily retrofit or upgrade the building to net zero carbon in future, and also the developer must offset to net zero carbon, whereby these offset payments would only be spent on additional renewable energy generation.
    - Use of an assured performance method to ensure that the operational energy performance reflects design intentions and addresses the performance gap.
    - Large developments (150+ homes / 1,000m^2+ non-residential floorspace) calculate whole-life carbon via a nationally recognised method and show actions to reduce this.

These performance metrics are clearly different from those used in Building Regulations Part L (TER, TFEE, TPER). The policy also expresses that these would need to be "calculated using a methodology proven to accurately predict a building's actual energy performance", which implicitly rules out the use of the Building Regulations methodologies SAP and SBEM because of the aforementioned inaccuracies of SAP and SBEM that were observed in the net zero carbon evidence report suite. These policies therefore now conflict with the newer Written Ministerial Statement 2023 (discussed later), but still remain the most effective means (in new buildings) to meet the legal duty to mitigate climate change.

The supporting text to this policy explained why it was considered to be necessary, i.e. in light of the legal duty to mitigate climate change and the fact that failure to have this policy would mean Greater Cambridge could not develop in line with the Paris Agreement or Climate Change Act carbon budgets (even when taking into account the imminent introduction of the Future Homes Standard). It also noted that local plans do have the power to set such standards and that national government consultations at that time had recently confirmed this power was still in place.

Other relevant policies to support climate change mitigation, but which did not set specific performance standards, included:

- **Policy GP/CC: Adapting heritage assets to climate change**. This policy would require any retrofit works to be in line with PAS 2035 framework and Historic England guidance on energy improvement in heritage assets, and evidence that a 'whole building' approach has been taken. It confirms that GCSP will give consideration to actions that are proposed to reduce emissions.
- **Policy CC/CE: Reducing waste and supporting the circular economy**. This policy would require applications to include Construction Environmental Management Plans (CEMP) showing how design and construction would minimise material demands (including via reuse/recycling of demolition materials) and enable building disassembly for component reuse at end of life.
- **Policy CC/RE: Renewable energy projects and infrastructure"**. This policy establishes a general positive stance towards the development of renewable energy generation, storage and distribution infrastructure, subject to certain criteria (including various impact criteria that were yet to be defined but proposed to include amenity, landscape character, biodiversity, geodiversity, water quality, heritage, highway safety, and other infrastructure). Importantly, this policy recognised that while national policy generally indicated that renewable energy infrastructure would constitute "inappropriate development" in Green Belt areas unless there are "very special circumstances", the environmental benefits of the zero-carbon energy could considered be part of those "special circumstances".
- **Policy CC/CS: Supporting land-based carbon sequestration**. This does not set any requirements but establishes a positive stance from the local planning authority towards creation and protection of landscapes that have a 'carbon sink' function, including "approaches that minimise soil disturbance, compaction and disposal during construction projects".
    - The rationale for this policy included recognition that the local plan area contains significant areas of peatland, which is a particularly rich carbon store compared to other land types but also has a potential to release that carbon as greenhouse gas if degraded.
- **Policy S/DS: Development strategy**. This policy would "set out the … pattern, scale and design quality of [development] in Greater Cambridge, not only for the plan period but beyond to 2050". Its map shows that the sites proposed to be included are primarily around the urban area and on public transport routes. Supporting text to this policy emphasises that this is specifically designed "to direct development to where it has the least climate impact, where active and public transport is the natural choice", drawing on the insights from the carbon modelling that had been conducted to show the emissions difference between different locations.

New legislation and regulation since Summer 2021

Environment Act 2021

Passed in November 2021, this Act brings new powers and duties to national government to regulate environmental issues. This may one day affect the scope or justification available to local plan policies.

Firstly, it empowers the Secretary of State (SoS) to set measurable, time-bound, 15-year targets on "any matter which relates to— (a)the natural environment, or (b)people's enjoyment of the natural environment." The regulations *can* also "make provision about how the matter in respect of which a target is set is to be measured". The SoS is responsible for the targets' achievement and reporting.

The Act defines "natural environment" as "living organisms … their habitats, [and/or] land (except buildings or other structures), air and water, and the natural systems, cycles and processes through which they interact". This might logically be interpreted to include the climate as a "cycle or process".

Secondly, the Act obliges the SoS to regulate at least one target each in four priority areas:

- Air quality (in addition to a separate target for the level of fine particulate matter [$PM_{2.5}$])
- Water
- Biodiversity (in addition to a separate target for species abundance by 2030)
- Resource efficiency and waste reduction.

While none of these directly mention greenhouse gas emissions, it is possible that 'air quality' or 'resource efficiency' might overlap with our topic depending on what regulations and targets are set.

Thirdly, Section 8 obliges the SoS to create and report on "an environmental improvement plan" of the steps Government intends to take for that improvement across at least 15 years. It establishes that the existing 2018 document "A green future" is the first such plan, but we note this was replaced with a new plan in 2023[ii] whose 10 goals include one on climate, which cites the Paris Agreement.

Fourthly, section 16 obliges the SoS to "make arrangements for obtaining … data about the natural environment" to monitor progress towards the targets and plan described above.

Fifthly, section 17 obliges the SoS to create "a policy statement on environmental principles" explaining "how the environmental principles should be interpreted and … applied by Ministers … when making policy". The statement must be expected to "contribute to — (a) the improvement of environmental protection, and (b) sustainable development." The "environmental principles" are:

> "(a) the principle that environmental protection should be integrated into the making of policies,
> (b) the principle of preventative action to avert environmental damage,
> (c) the precautionary principle, so far as relating to the environment,
> (d) the principle that environmental damage should as a priority be rectified at source, and
> (e) the polluter pays principle."

The Act's section 18 establishes that Government ministers "must, when making policy, have due regard to the policy statement on environmental principles currently in effect." The extant Environmental Principles Policy Statement, set in 2023[iii], establishes that "Policymakers should take a holistic, common sense approach when thinking through the potential environmental effects of a policy", including how far "it will contribute to climate change, and our net zero commitment". **This was a key ground of a recent legal challenge against a national policy statement that obstructs local plan policies on net zero** (see "Written Ministerial Statement of December 2023".)

The Act's section 22 also establishes a new "Office for Environmental Protection" (OEP) whose objective is to "to contribute to — a) environmental protection, and b) the improvement of the natural environment". The OEP's first steps established in the Act are that it must:

- Prepare a strategy setting out how it will exercise its functions. This strategy must:
  - Explain how the OEP will further its objective (as above) objectively and impartially.
  - Delineate the OEP's role from that of the Climate Change Committee (CCC).
  - Set out the approach to enforcement, including how environmental harms or breaches of environmental law will be identified as 'serious' and how the enforcement will avoid conflict with other statutory regimes.
- Monitor and report on progress towards "improving the natural environment in accordance with the current environmental improvement plan" and any targets set (as described above).
  - However, this must *exclude* "implementation of, or report on, a matter within the remit of the Climate Change Committee", i.e. any of the CCC's duties established in the Climate Change Act 2008, Part 1, sections 34-36 and section 48.

In the ongoing term, the OEP's roles include:

- Section 29: The OEP must "Monitor the implementation of environmental law" (but again, excluding any matters that are instead within the remit of the CCC, as above).
- Sections 31 – 41: The OEP can hear complaints, conduct investigations and initiate enforcement where public authorities fail to act in accordance with environmental law, including failures to take account of environmental law when exercising their functions or "unlawfully exercising, or failing to exercise, any function [that the public authority] has under environmental law." This may imply that a local plan could be subject to OEP enforcement if climate policies are weak.

The Act defines key terminology as follows:

- "**natural environment**" means "(a)plants, wild animals and other living organisms, (b)their habitats, (c) land (except buildings or other structures), air and water, and the natural systems, cycles and processes through which they interact". **This might logically be interpreted to include the climate as a "cycle or process".**
- "**environmental law**" means "any legislative provision to the extent that it … is mainly concerned with environmental protection". **This might logically be interpreted to include the Climate Change Act 2008 and potentially also the local plan's 'climate mitigation' duty within the Planning & Compulsory Purchase Act 2004**.

The Act does not mention the word "carbon", but makes provisions for **demarcating the role of the OEP versus that of the Climate Change Committee (CCC)**. It is implied that the OEP's role may include taking action on breaches of law related to carbon emissions, in that the Act includes that:

- (35:7) "Where the OEP intends to give an information notice to a public authority in respect of an alleged failure to comply with environmental law which relates to emissions of greenhouse gases (within the meaning of the Climate Change Act 2008), the OEP—(a) must notify the [CCC] of its intention before it gives the notice to the authority, and (b) must provide [the CCC] with such information relating to the alleged failure as the OEP considers appropriate."

Greenhouse gas emissions are mentioned in two further places in the Act:

- Schedule 6: "Resource Efficiency Information", Part 1, point 1(1) empowers the Secretary of State to create regulations requiring "specified information about the resource efficiency of products" to be provided by "specified persons, in specified circumstances".
- Schedule 7: "Resource Efficiency Requirements", Part 1, point 1(1) empowers the Secretary of State to create regulations requiring that "products … meet specified resource efficiency requirements".

In both Schedule 6 and 7 (points 2[1] and 2[3] in both schedules), it is stated that **the information or resource efficiency standards can include "greenhouse gases … released or emitted at any stage of the product's production, use or disposal**." This includes a note that greenhouse gases for this purpose are defined as those "within the meaning of section 92 of the Climate Change Act 2008."

If the Secretary of State does make use of these regulatory powers regarding construction products specifically, **this could make embodied carbon information more easily available** (Schedule 6), or **might even improve the embodied carbon performance of those** (Schedule 7). If so, these might have the effect of improving the feasibility of meeting the draft Greater Cambridge emerging policy CC/NZ's requirement for whole life carbon assessments in large developments.

In summary, the Environment Act 2021:

- Does not appear to immediately constrain the Local Plan in the way it can express policy towards net zero carbon, whether in buildings or otherwise
- Does not appear to immediately provide any new powers on the Local Plan regarding net zero
- Obliges the Secretary of State to create new national strategies and regulations, which (depending on how they are implemented) may indirectly support the goal of net zero carbon buildings policies in local plans by improving the embodied carbon performance of materials or by making embodied carbon information more widely available across more products
- Obliges national ministers to consider a particular set of environmental principles when making national policies – and these environmental principles have since been stated in national policy to include the impact on climate. This is feeding into legal cases where there is a claim that certain national policies have obstructed local plan net zero carbon policy formulation and therefore that the national policymaker failed in their 'environmental principles' duty. However, the single legal case to date has not been successful on that ground (see WMS2023).
- Establishes a new Office of Environmental Protection (OEP) which has duties, investigatory and enforcement powers relating to environmental law. "Environmental law" could be interpreted to include the Climate Change Act and the local plan's climate mitigation duty in the Planning & Compulsory Purchase Act 2004. The OEP's remit is strictly demarcated from that of the Climate Change Committee; however the Climate Change Committee does not currently have an enforcement function and so there is potential that the OEP may eventually take up enforcement action where the CC Act and PCP Act are not followed.

Levelling Up & Regeneration Act 2023 (LURA)

Passed in 2023, this Act will affect the planning system in a variety of ways. Some of these may be relevant to local plan policy formulation on net zero carbon; however, most of the actual effects of the Act are uncertain until the enactment of secondary legislation/regulation or new national policy statements.

It *empowers* local plan action on net zero carbon in the following ways:

- **Reiterates the legal duty to mitigate climate change**, which the Planning & Compulsory Purchase Act 2004 already applied to the local plan. The LURA also extends that duty to spatial development strategies, neighbourhood plans, minerals/waste plans and supplementary plans.
- **Empowers national government to bring in a new 'Infrastructure Levy'** that would entirely replace the Community Infrastructure Levy and was also expected to replace most uses of Section 106.
    - The Infrastructure Levy would be set by gross development value (GDV).
    - The Act does not scrap Section 106 or CIL, but empowers the Secretary of State to do so and to make regulations for the new Levy. It was originally thought that these regulations might scale-back S106's role to limited purposes[iv], which could alter the ability to use Section 106 to raise carbon/energy offset funds (as it has been in several precedents). However, until the Secretary of State creates the new levy regulations, it is unknown whether S106 would remain usable for the purpose of raising carbon offsetting funds, or for any other purposes related to reducing developments' carbon impact.
    - Within the conditions that the LURA places on these new Infrastructure Levy, it includes that they must be spent on infrastructure, whose definition includes "facilities and spaces for the mitigation of, and adaptation to, climate change." This could continue the basis for local plan policies to raise carbon/energy offset payments via the new Levy.
    - However, these S106/CIL reforms were proposed by the previous government. The new government (2024) has indicated[v] it will not implement the new IL and instead "focus on improving the existing system of developer contributions". It remains to be seen whether these 'improvements' will affect the scope for S106 as a carbon/energy offsetting tool.

However, it may *constrain* local plan action on net zero carbon in the following ways:

- **New 'national development management policies' (NDMP)** with which local plan policies must not be inconsistent. The Act does not define the NDMP topics but empowers the Secretary of State to create NDMPs by direction, in which process he or she must "Have regard to the need to mitigate … climate change". It is as yet unknown whether the NDMP regime will affect local plans' ability to set their own carbon and energy performance standard (see Appendix 2).
- **A new 'Environmental Outcomes Report'** to replace the existing system of Sustainability Appraisals, Strategic Environment Assessments and EU Environmental Impact Assessment. The Outcomes' topics are yet to be clarified but may conceivably include carbon. Certain text within the Act could be interpreted to allow climate mitigation to be part of those Outcomes' topics. However: Neither climate nor carbon is specifically mentioned in Part 6. Recent national consultations on the Environmental Outcomes regime have been either vague or silent on carbon, and there has not yet been a national response to those consultations (see Appendix 2). Therefore it appears unlikely that the Act's 'Environmental Outcomes' approach will affect the local plan's scope to require carbon reduction standards in developments.
- **Supplementary Planning Documents (SPDs) to be replaced with "Supplementary Plans":** Until the LURA, the production of supplementary documents with significant but less material weight than the local plan itself was established in the Town and Country Planning (Local Planning) (England) Regulations 2012. The LU&R Act provides for the creation of a new type of document, 'Supplementary Plans'. The previous Government's 2023 consultation[vi] explained that these would replace SPDs entirely and have the same weight as the rest of the local plan. However, "[existing] SPDs will remain in force until planning authorities adopt a new style local plan or minerals and waste plan". The new national government's response to that 2023 consultation (2025[vii]) confirms this. For more detail, see Appendix 2. However, the online text of the Town & Country Planning Regulations 2012 still refers to SPDs, and the new NPPF 2024 still retains existing references to SPDs. It is therefore as yet uncertain whether SPDs will remain a useful tool to assist implementation of any local plan policies aimed at carbon reduction.
- **New universal prescribed metrics for local plan implementation monitoring:** These may help anticipate what policies local plans are expected to have (or even the NDMPs as above).
    - The former Government's 2023 consultation [vi] had proposed 15 metrics in 6 themes: Housing, Economy, Environment & Open Space, Minerals, Waste, and Environmental Outcomes Reports. Some of these were well-defined, yet others were not, including:
        - The Environment & Open Space theme included a proposed metric described as "Progress toward net zero emissions from buildings (to be developed)" – acknowledging that it was unknown what the metric would actually be.
        - The 'Environmental Outcomes Reports" theme metric was similarly vague, termed "Assessment of the contribution to meeting Environmental Outcomes and identification of any remedial action that needs to be undertaken".
        - National government would create reporting templates, which would include the fixed metrics but also have "flexibility … to enable authorities to capture their own specific metrics", with which "planning authorities should monitor … the success of implementation of their specific [local plan] vision [which should have been] underpinned by evidence and based on measurable outcomes that [can be] monitor[ed]", albeit not every local plan policy must be monitored.
    - The February 2025 response[viii] to that consultation confirmed the new Government's intent to introduce universal reporting metrics with templates and data standards. It stated that the metrics list will be edited to include "an expanded range of metrics on housing", "more nuanced metrics on employment floorspace", and a metric on local infrastructure. It also stated intent to "revise several metrics in response to [the consultation]" for example measuring total affordable housing creation rather than net, due to local authorities not having the means to track losses to get the net figure. However, the "net zero emissions buildings" metric is not mentioned in that consultation response, and therefore it has neither been clarified what the metric might be nor confirmed whether that metric will be taken forward at all.

Building Regulations Part L 2021 and imminent Future Homes Standard

Future Homes Standard Consultation Response (2021)

This is the government's response to public consultation on the new Future Homes Standard, which is supposed to update building regulations in 2025 with tighter standards in energy and carbon (although this has not yet occurred nor has there been government confirmation of when this will occur, as of writing the current report in April 2025). The consultation response document also lays out an 'interim uplift' titled Part L 2021, which is now in force as of June 2022.

The government asked whether it should now enact the changes to Planning and Energy Act that would remove local planning authorities' power to require higher standards of energy efficiency and renewable energy, as per the 2015 Written Ministerial Statement. 86% of responses said no. The response confirms that "in the immediate term" it will not enact those changes and that local plans thus retain their existing powers. It notes the previous "expectation" set by the 2015 Ministerial Statement, but does not say that this still applies, and recognises that many local plans exceed this.

The response document also lays out an indicative specification for the 'notional building' for the 2021 & 2025 Part L. This is the imaginary building with several energy efficiency and renewable energy measures, whose carbon emissions rate the proposed building must not exceed. See table below. It was later confirmed that the document forms a piece of official government policy.

Part L Interim uplift 2021 (changes vs 2013)	Part L Future Homes Standard 2025
Minor improvements to roof, windows, doors Solar PV panel m^2 equal to 40% of ground floor Wastewater heat recovery system Still has gas boiler as basic assumption	Major improvements to walls, roof, floors, windows, doors Low carbon heat pump Solar panels and wastewater heat recovery are not part of notional building spec
Result: 31% reduced target emissions rate compared to 2013	**Result: 75% reduced target emissions rate compared to 2013 (low enough to rule out gas boilers)**

Table 1: Comparison of 'notional building' specification of current Building Regulations (Part L 2021) and the Government's first indication of the Future Homes Standard as published in 2021, both as an improvement on the previous Building Regulations (Part L 2013).

Future Homes Standard second consultation (2023-24)[ix]

In December 2023 – March 2024, Government ran a new round of consultation on the forthcoming FHS. We here summarise the content of this FHS consultation to inform Greater Cambridge of the potential future national policy direction. This contributes further evidence of need for local policy on buildings' carbon and energy performance, because the approaches laid out in this FHS consultation do not meet the standards needed for the national carbon budgets as described previously.

The consultation puts forward two options that Government may adopt as the FHS, both of which are significantly weaker than the previously drafted standard that had been described in 2021. Essentially, these are the least stringent two options from the range of six 'Contender Specifications' laid out by the Future Homes Hub[x] (a collaboration of major developers, industry bodies and government).

The two options now on the table are shown in Table 2. Please note the 'DFEE' and 'space heat' figures are not taken from the consultation itself, but rather from prior analysis by the Future Homes Hub[iii].

We note that the consultation proposes to replace the SAP calculation methodology with a new model 'HEM', the Home Energy Model, which is intended to be more transparent, accurate and adaptable although this has not yet been tested in reality. There is no such replacement planned for SBEM.

Table 2: FHS options consultation 2023-24, versus current standard and previously indicated FHS

Part L 2021 (today's standard)	FHS (as in previous consultation)	FHS 2023 consultation Option 1	FHS 2023 consultation Option 2
Fabric: [see *Table 1*]	Fabric: [see *Table 1*]	Fabric: All U-values identical to Part L 2021. Small improvement to airtightness.	Fabric: No improvement on Part L 2021.
Heat: Gas boiler.	Air-source heat pump.	Air-source heat pump and wastewater heat recovery	Air-source heat pump.
PV equal to 40% of ground floor area.	PV: None.	PV: Equal to 40% of ground floor area.	PV: Removed; none.
Results: [Carbon – see *Table 1*] • Heat bill/year: £640 • DFEE: 19.3-55.9 kWh /m^2 /year	Results: [Carbon – see *Table 1*] • Heat bill/year: Unknown • DFEE: 13.5-51 kWh/m^2/year	Results in semi-detached: • Carbon emissions: 0.05t/year • Heat bill/year: £520 • DFEE & space heat demand unknown, as this Option does not match any of the Future Homes Hub Contender Specifications.	Results in semi-detached: • Carbon not given. • Heat bill/year: £1,220 • DFEE: Identical to Part L 2021.

As a consultation only, looking at multiple options, its contents presumably do not yet constitute a formal statement of national policy, but the Government's consultation response (when available) would. That full response has not been released as of July 2025, only a June press release that there will be some degree of requirement for solar panels on new homes (effectively ruling out the 'Option 2' shown in the table above, at least the part on PV). It is uncertain whether the full response will arrive in time for consideration within the present scope of work for Greater Cambridge.

Progress at national level towards the UK's legally binding carbon targets

The 'tests of soundness' in the NPPF establish that local plans are expected to be in line with national policy (of which the NPPF is one). The NPPF (cited in previous reports and with updated references in the current report) also explicitly instructs plans to "take a proactive approach" to climate mitigation "in line with the objectives and provisions of the Climate Change Act". We therefore here recap what those objectives and provisions are, and lay out in more detail the analysis on what it would take to achieve them and the latest available progress reports. We do this in order to reveal whether it appears they will be achieved without local policy intervention – as a key basis for local plan policy design and justification, especially on how stringent the local standards should be.

As noted in the previous reports for Greater Cambridge, the UK's legally binding carbon targets stem from the Climate Change Act 2008 (and 2019 update which amended the 2050 goal to net zero). In addition to the 2050 net zero goal, the Act also comes with **legislated interim 5-yearly carbon budgets** that are devised by the independent Climate Change Committee (CCC) and then passed into law by Parliament 12 years in advance of the respective budget period.

The latest *legislated* carbon budget[xi] is the 6th Carbon Budget. This was legislated in 2021, covering the period 2033-2037, and legally commits the UK to achieve a 78% reduction by 2035 compared to the 1990 baseline[1]. That would be roughly equivalent to a 65% reduction compared to current levels, which would require an average drop of about 4.3% a year[2].

The Climate Change Committee has very recently (February 2025) delivered its recommendations for the 7th Carbon Budget which will cover the period 2038–2042. That will be considered by Parliament before being signed into law as it is or with any amendments Parliament thinks necessary.

The Climate Change Committee also conducts the analysis on which the legislated carbon budgets and overall route to net zero are based, revealing what would need to occur in each sector to fulfil the carbon budgets and 2050 net zero goal. That analysis shows that in order to achieve the legislated goals, the sectors of buildings, energy and land transport should all achieve steep and rapid reductions and reach zero or near-zero emissions on their own terms (see *Figure 3*), not relying on offsetting.

The Climate Change Committee explains that "a little more or a little less may be achieved in any area, or alternative low carbon options could be used, but the overall level of ambition and delivery must match" the proposed carbon budgets. Given that all sectors face a huge challenge in achieving their own required reductions, this means there **is very little room to offset emissions in one sector by reductions or removals in another sector**. For example, even highly ambitious levels of tree planting would barely be enough to offset unavoidable emissions from agriculture – see *Figure 3* overleaf - thus the buildings and energy sectors should not rely on tree planting to make up for insufficient reductions in their own emissions.

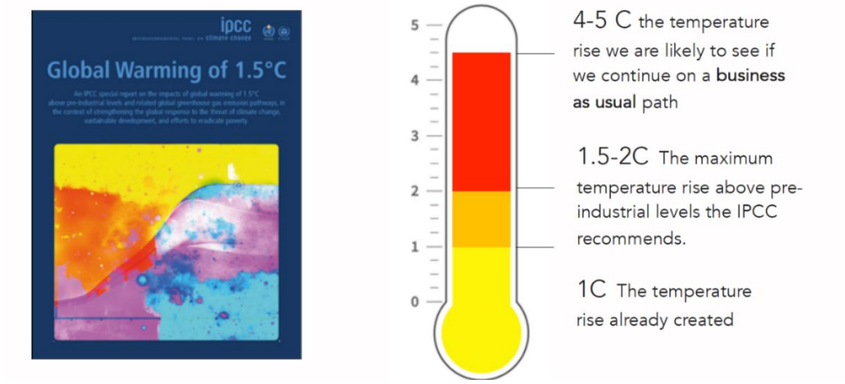

Figure 1: Special Report on 1.5C by IPCC, and diagram of the potential range of climate change to 2100 (Diagram credit: Etude, 2021).

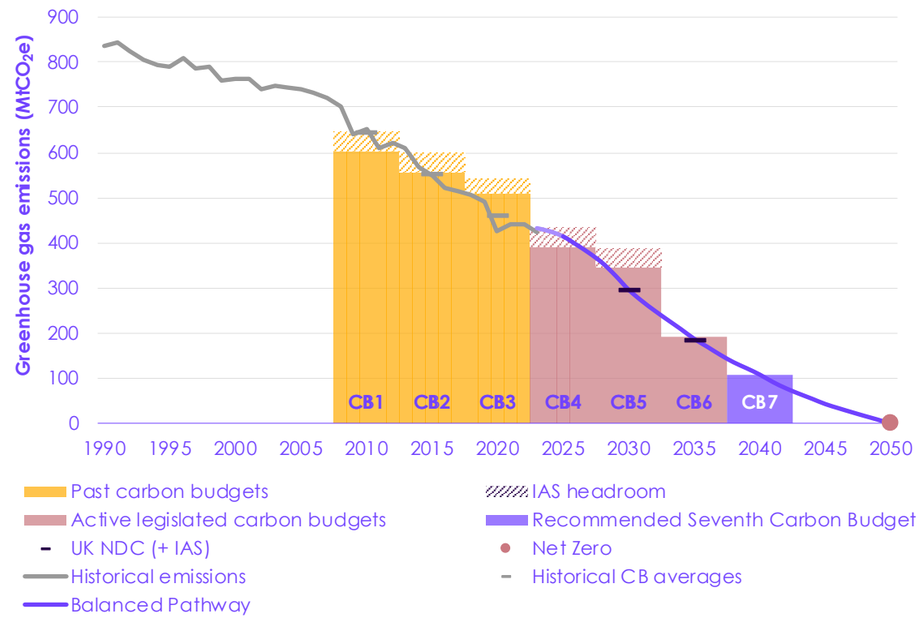

Figure 2: UK legislated carbon budgets under the Climate Change Act and yet-to-be-legislated carbon budget. From Climate Change Committee (2025), *The Seventh Carbon Budget*. "IAS" = international aviation & shipping.

[1] We note also that separately and more recently (2024), national government also made a commitment on the international stage to an 81% target by 2035, but that 81% target represents the UK's contribution to the goals of the Paris Agreement which is not legally binding and is distinct from the Climate Change Act. These two different 2035 targets also differ somewhat in scope.

[2] For context, the UK's carbon emissions fell by 9.5% in 2020 due to the COVID pandemic but rebounded by about half that figure in 2021, while global carbon emissions fell by about 5% in 2020, but then in 2021 rebounded to even higher levels than before COVID.

The UK carbon budgets also come with **progress reports, and analysis detailing a combination of actions necessary to meet the budgets**[3]. These include ambitious changes to buildings (new and existing), energy, transport, agriculture/forestry, industry and waste. Most relevant to local plans are:

- **No new homes connected to the gas grid from 2025** at the latest[xii] (and ideally be zero carbon[xiii]), instead using low-carbon heat such as heat pumps or gas-free heat networks
- **New homes to have a very low space heat demand of only 15-20kWh/m2/year** (a 60-70% reduction on a new home that just complies with the previous 2013 building regulations[xiv])
- **Accelerate and scale-up rollout of low carbon heat to existing buildings**, with 3.3. million heat pumps installed in existing homes by 2030, expansion of low carbon heat networks in the 2020s, and a limited role for hydrogen in the existing gas grid in some locations after 2030
- **End the installation of any fossil fuel boilers by 2033 for all existing buildings** including homes, commercial and public buildings, unless in hydrogen gas grid areas
- **Rapid rollout of insulation and other energy efficiency measures to existing buildings**, so that all existing homes for sale from 2028 have EPC rating of C or better, and 15 million homes to receive insulation to their walls, floors or roofs by 2050, to include by 2025:
    - Loft insulations to reach 700,000 per year (from current level of just 27,000/year)
    - Cavity wall insulations to reach 200,000/year (current level: 41,000/year)
    - Solid wall insulations to reach 250,000/year (current level: 11,000/year)
- **Construction materials to be used more efficiently and switching to low carbon materials** (e.g. timber and low-carbon cement) – although this has only a very small role overall
- **Fully decarbonise the electricity grid by 2035**, by:
    - Scaling-up renewable electricity to represent 80% of generation by 2050 – primarily wind power but also solar, with much of the wind power being offshore – in step with greater electricity demand as buildings and transport switch away from fossil fuel
    - Adding energy storage to the system, including batteries, hydropower, and hydrogen
    - Maintaining or restoring the existing nuclear power capacity by building new capacity in the 2030s to replace existing plants that are being retired in the 2020s
- **Reduction in travel mileage by car**, and phase out of new fossil fuel cars and vans from 2032 in favour of fully electric vehicles – and relatedly, decisions on investment in roads should be contingent on analysis justifying how they will contribute to the UK's pathway to net zero and not increase emissions[xv]
- **Increase woodland cover to 18% of UK land** [xvi], up from 13% today, and restore peatlands.

It is vital to note that to realise the 'balanced pathway' to net zero and the carbon budgets, all of the above changes must be achieved in combination, not either/or. This is because there are many interdependencies, and each sector faces such a large challenge in addressing its own emissions that none of the sectors (buildings/energy/transport/land use/agriculture/waste) can be reasonably expected have the capacity to reliably pick up slack from others that underperform.

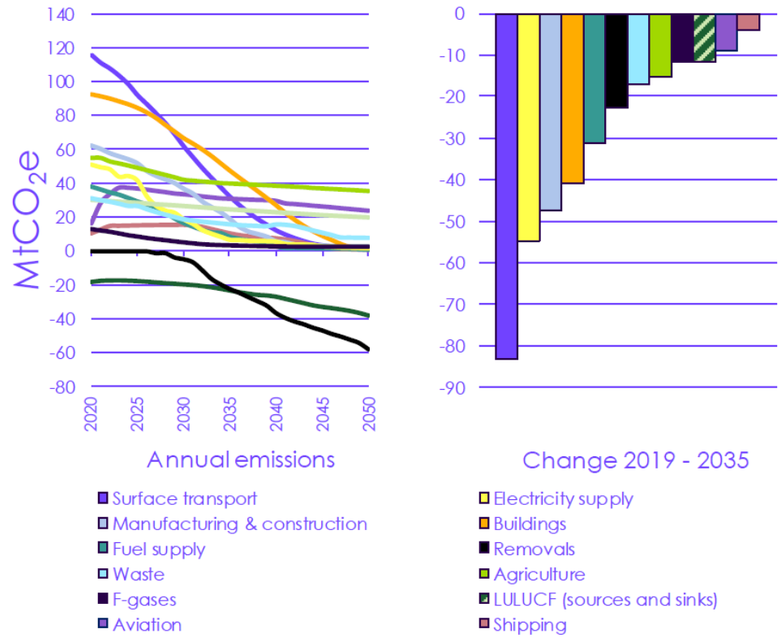

Figure 3: Chart showing how each sector's emissions must fall in the 'balanced' pathway to net zero in 2050. LULUCF=Land use and Forestry. Climate Change Committee (2020), *The Sixth Carbon Budget*.

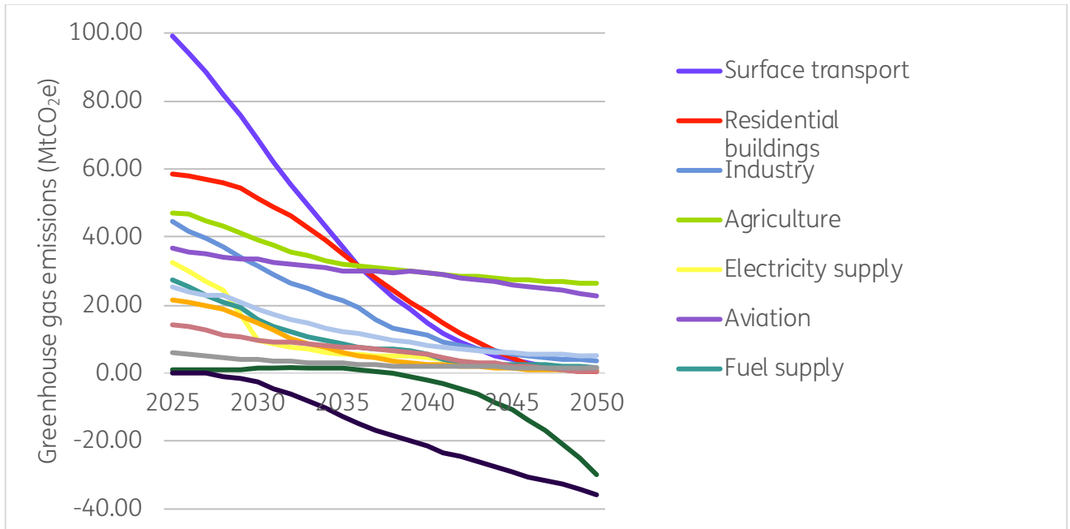

Figure 4: Equivalent of previous Figure 3, but from the CCC 7th Carbon Budget published 2025.

[3] It is vital to note that the carbon budgets, while challenging, are the minimum degree of action necessary for the UK to play its proportionate role in preventing catastrophic climate change. Other expert analysis (Tyndall Centre) finds that, following the equity principles in the Paris Agreement, the UK's share of the global carbon budget should be about half the size of the budgets set by the CCC.

To what extent is the necessary mitigation for the UK's legislated carbon budgets being delivered by national regulation or the wider industry?

As discussed previously, the local plan has a duty to mitigate climate change (i.e. actively reduce carbon emissions) and the NPPF indicates that this should be 'in line with the Climate Change Act' (including, as of the 2024 NPPF, that "the planning system should support the transition to net zero").

Where there are already national programs or policies in place to reduce carbon emissions and these are thought to be effective, the local plan therefore clearly needs to support those or be compatible with them. It should also of course exercise its other powers to pursue carbon reductions in whatever ways are more suited to local rather than national decision-making (for example, setting a spatial strategy to direct growth to the locations most likely to reduce car use).

However and furthermore, the extent to which local plan policy logically needs to go *beyond* those national interventions must logically depend on whether or not those national initiatives (or the development industry itself), are already on track to deliver the actions needed to fulfil the Climate Change Act carbon budgets and 2050 net zero. Where these are lacking, this evidence will support the justification set local policy that goes further or faster in its required standards.

We therefore here explore the latest available evidence on whether the UK is already delivering the type, scale, speed and degree of changes that the Climate Change Committee has analysed to be necessary to fulfil those national carbon budgets and 2050 net zero goal. We here focus only on the changes that are relevant to the local plan's sphere of influence, i.e. buildings that require planning permission, and transport (we do not cover changes that the local plan cannot influence, such as changes to existing agricultural or industrial practices).

Please note that this section deals with the picture at national level.

Building regulations (current and planned future) do not deliver the performance needed

Building on findings of our previous reports, we now reference further new evidence that, the national Building Regulations on energy and carbon – Part L – neglects the following:

- Does not cover the entire scope of buildings' energy use, thus does not cover its full operational emissions.
- Does not require its energy and carbon targets to be met in real life, only through estimation methods that have been repeatedly found to be inaccurate (SAP and SBEM; see glossary).
- Embodied carbon (glossary) – neither current nor future Building Regulations deals with this.
- The current Part L (2021) does not rule out gas, and many buildings granted under this regime will actually be completed post-2025.
- The Future Homes Standard (FHS; supposed to arrive in 2025) is expected to ensure that new homes are gas-free, but not net zero carbon from first operation, going against the Climate Change Committee's recommended "rapid and forceful pursuit of zero-carbon new-build"[xvii].
- The FHS will not deliver a low enough space heat demand[xviii] for the UK's carbon budgets. This is true whether calculated with SAP[xix] or a more accurate energy prediction method[xx,xxi], in all three of the indicative FHS specifications that the Government has released to date.
    - To achieve the necessary 15-20kWh/m^2 limit, improved fabric is needed. Government's first FHS consultation had indicated that the FHS would include fabric improvements (albeit not enough), but the 2023-2024 consultation[xxii] presented two options that both make little to no improvement on today's fabric. If modelled in SAP, a building fabric similar to the recent FHS consultation would have space heat demand of up to 54kWh depending on home type[xxiii], even before adjusting for SAP's underestimation of this.

Government carbon strategy to date, as a whole, is insufficient to meet the UK's carbon budgets

National Government plans for the achievement of national carbon goals have twice been deemed by the High Court to be so ineffective as to be unlawful in their failure to deliver on the Climate Change Act: in 2022 the Net Zero Strategy[xxiv], and in 2024 the Carbon Budget Delivery Plan[xxv].

The Climate Change Committee annual progress reports reveal the UK's progress towards emissions targets, including progress towards the necessary changes in each sector. Its analysis in 2022 found that the **government's policy plans were insufficient to deliver the full suite of necessary actions for the carbon budgets**[xxvi]. The Committee's 2023 and 2024 reports also note a lack of progress on crucial issues. The 2024 headlines on the (former) Government's policies include that:

- **Of the emissions reductions that must be achieved by 2030, around half lack credible plans** for their delivery and/or carry significant risk to the plans that are in place
- **From 2024 onwards, the majority of reductions in coming years need to come from sectors other than electricity generation**, which carried the bulk of reductions achieved in 2008-23.

Further findings from the 2023 and 2024 progress reports are provided overleaf in a summary table.

Topic	UK-wide changes needed to hit legislated carbon goals (note: non-exhaustive)	CCC 2023 progress report[xxvii]	CCC 2024 progress report[xxviii]	Therefore what local plan policies may be logically needed to 'mitigate climate change in line with the Climate Change Act' as per the NPPF?

Overarching	• Decrease emissions by 2.9% per year between 2014-22 (excluding aviation & shipping)
	• Decrease emissions by 5.6% per year in 2022-2030 (excluding aviation & shipping)
	• 68% emissions reduction by 2030 (from 1990 level)
		• **The 2014-22 rate was achieved, but the bulk of this was via the electricity sector** whose low-hanging fruit is now gone – therefore other sectors' decarbonisation needs to accelerate from now on (non-electricity sector emissions have only fallen by 1.2% per year in 2014-22; must be 4.4% per year from now on).
		• **Government's plans (Carbon Budget Delivery Plan) are insufficient**; about half of the necessary reductions from 2023-2037 lack credible plans for their delivery, especially in the sectors of buildings, industry, surface transport and agriculture.
		• **Of the 50 key indicators, only 9 are on track**; 11 are significantly off track; 14 are slightly off track. The remaining 16 are not yet assessable.
		• The planning system is identified as a particular barrier to rapid progress.
			• **2022-23 emissions dropped by 5.4%, which exceeds the average annual drop in 2015-22 but still short of the required 5.6%. The drop was mostly delivered by external factors including:**
			  ○ A return to normal levels of electricity imports from France as their nuclear power came back online after a period of downtime
			  ○ Overall less gas use in buildings and industry, but this is likely due to high prices rather than efficiency or lasting behaviour change.
			• **Emissions reduction excluding the electricity sector was only 3.2%**
			  ○ This must rise to 4.6% per year in the period 2023-30 if the UK is to meet its 2030 target of 68% reduction on 1990 emissions – a goal set towards the UK's commitment to the Paris Agreement.
			• **Of the emissions reductions that must be achieved by 2030, around half still lack credible plans** for their delivery and/or the plans in place carry significant risk.
			• **Of the 28 key indicators, only 5 are on track;** 7 are significantly off track, and a further 7 are slightly off track. The remaining 9 are not yet assessable or not associated with a specific benchmark/target.
				Design policies to accelerate the rate of carbon reduction overall beyond what is being achieved by national mechanisms – especially in sectors noted to have nationally fallen behind what is necessary, such as:
				• Expansion of renewable electricity generation – whether by promoting the development of standalone renewables, addition of renewables to existing properties, and/or by requiring renewable energy generation capacity to be delivered as part of other types of development
				• Energy and carbon performance of buildings (beyond what national regulation already requires)
				• Spatial allocations to minimise car use
				• Take a positive stance towards infrastructure for public transport, electric vehicles and hydrogen vehicles (although the latter is unlikely to emerge except for heavy logistics)
				• Take a positive stance towards development of premises for specific industry or commercial sectors that are needed for the UK's low-carbon transition, such as research and manufacturing facilities for low-carbon technologies
				• Take a positive stance towards proposals for changes to existing buildings that would improve their energy / carbon performance.

Topic	UK-wide changes needed to hit legislated carbon goals (note: non-exhaustive)	CCC 2023 progress report[xxvii]	CCC 2024 progress report[xxviii]	Therefore what local plan policies may be logically needed to 'mitigate climate change in line with the Climate Change Act' as per the NPPF?

Rollout of low carbon heating, and fabric improvements, to existing buildings	• Dramatically increase the rollout of heat pumps to existing buildings, so that installations reach 600,000/year by 20228 and 100% of heat system sales are low carbon ones from 2033
	• 3.3 million heat pumps into existing homes by 2030 and expand heat networks throughout 2020s
	• Hydrogen only plays a very limited role in the buildings sector trajectory of the 6th Carbon Budget devised in 2020. Its role dwindled further in 2023, as Government cancelled two village pilots and will decide in 2026 if hydrogen will have a role at all in heating[xxix].
	• No installation of new gas boilers from 2033
		• Heat pump installation rates are very off-track, at one-ninth of what they should be
		• Energy efficiency retrofits to existing buildings are significantly off track, due to national policy failures.
		• Significant risk to market-based incentives for heat pump installations, as government has not balanced the cost of electricity vs gas.
		• Policy gaps remain for energy efficiency measures in buildings.
			• Heat pump installations remain very off-track, only 4% higher than the previous year and far behind other countries on this
			  ○ By 2030, 10% of existing homes should have heat pumps (currently only 1%)
			  ○ Installation rates in homes need to increase by a factor of 10 by 2028 (of which ~40% in new homes and ~60% in existing homes)
			  ○ A recommended priority action is to remove planning barriers to heat pump installations.
			• Energy efficiency retrofits are still significantly off-track:
			  ○ The rate of properties receiving Government-funded energy efficiency improvements fell, and is significantly off-track both for the CCC's trajectory and the Government's own plans.
			• Insufficient progress on policy & plans to support energy efficiency and clean heat in buildings:
			  ○ The (former) Government took several backward steps, exempting 20% of homes from the 2035 phase-out of gas boilers and not implementing the plans to require landlords to meet minimum energy efficiency standards
			  ○ The buildings policy outlook is therefore now worse than the previous year.
			• The buildings sector now lacks credible national delivery plans for almost 100% of the necessary emissions reductions up to 2030.
			• Buildings remain the second highest-emitting UK sector.
				• **Take a permissive stance towards proposals relating to existing buildings that would improve their energy efficiency and carbon emissions, including where these changes are visible from the street, such as:**
				  ○ Improvements to fabric, including external insulation, upgraded windows, and roof replacements
				  ○ Heat pump installation, including on front and side elevations, subject to an acceptable noise impact on neighbours
				  ○ Proposed connections to heat networks (subject to the network being gas-free)
				  ○ Where the proposal relates to a legally protected heritage asset such as a listed building or conservation area, work constructively with the applicant to identify ways that clean heat and improved fabric can be implemented in a way whose impacts would be acceptable
				• **Avoid new builds adding to the problem,** by devising policy for new buildings that would require them to be fossil fuel free (including gas-free) and use either a heat pump or other equally efficient low-carbon heat
				• **Take a positive stance towards proposals for business premises that manufacture, sell, install or maintain heat pumps or fabric retrofit products, including training facilities**

Topic	UK-wide changes needed to hit legislated carbon goals (note: non-exhaustive)	CCC 2023 progress report[xxvii]	CCC 2024 progress report[xxviii]	Therefore what local plan policies may be logically needed to 'mitigate climate change in line with the Climate Change Act' as per the NPPF?

Renewable energy generation capacity	• Increase in renewable energy generation capacity to reach 60% of total grid electricity generation by 2030 and 80% by 2050, while catering for a doubling in the amount of electricity demand
	• Solar: increase generation by 3 GW per year on average (nationwide)
	• Wind (onshore & offshore combined): 3 GW of new generation per year, and repower older sites
		• Development of wind energy capacity is slightly off track – deployment rates will need to increase to meet the CCC's or the Government's own ambitious targets.
		• Development of solar energy capacity is significantly off track (far too low); has not been growing fast enough.
			• Wind power capacity (both offshore and onshore) remains slightly off-track. By 2030:
			  ○ Offshore wind installation rate needs to treble
			  ○ Onshore wind installation rate needs to double (noting that new government's intent to remove planning barriers is a positive first step)
			• Solar energy capacity still significantly off-track; the installation rate needs to quintuple by 2030.
				• **Take a positive stance towards the development of specific types of standalone renewable energy generation facilities,** including by explicitly identifying areas that are suitable for this
				  ○ This approach must take into account that onshore wind turbines are no longer under a national policy moratorium as of December 2024 (see this report's section on the NPPF 2024)
				• **Require new development to include a certain proportion of renewable energy generation capacity –** this can be expressed either as a % of energy use, or as an amount of generation capacity per footprint of building area, or as a percentage of the building's carbon emissions reduction that must be delivered through this renewable energy
				• **Take a permissive stance towards proposals for the addition of solar panels to existing premises** – including where these are visible from the street (subject to legal requirements around heritage protection as noted above in this table in the 'overarching' topic)

Topic	UK-wide changes needed to hit legislated carbon goals (note: non-exhaustive)	CCC 2023 progress report[xxvii]	CCC 2024 progress report[xxviii]	Therefore what local plan policies may be logically needed to 'mitigate climate change in line with the Climate Change Act' as per the NPPF?

Embodied carbon (via manufacturing & construction)	• Manufacturing & construction sector to reduce emissions 70% by 2035, from 2018 baseline
	• By 2035, improve production resource efficiency to reduce annual emissions by 5 megatonnes, including by designing buildings to reduce material use, especially cement, lime, iron and steel
	• More substitution of low embodied carbon materials for high embodied carbon ones
	• Government should "Introduce mandatory disclosure of whole-life carbon in buildings … as soon as possible", then "a mandatory minimum whole-life carbon standard for … buildings and infrastructure which strengthens over time, with differentiated targets by function and usage … [which] should be included within the Future Homes Standard."
		• Government's Carbon Budget Delivery Plan is fails to drive industrial electrification which is vital for decarbonisation of steel in particular.
		• There is still no national mandatory disclosure of whole-life carbon of buildings.
		• There is no sign of Government intent to mandate a whole-life carbon targets for buildings.
		• Thus regulation and national policy continue to neglect the steps needed to reduce embodied carbon in line with the goals of the Climate Change Act.
			• There was a significant drop of 8.1% in emissions from this sector* this year, but this is suspected to be influenced by high gas prices leading to reduced output, rather than reflecting any long-term lasting efficiency improvements
			  ○ Industrial energy intensity (energy consumption per unit output) has been steady, whereas it should ideally be reducing in the long term
			  ○ Reductions in total energy consumption have been due to reduced output
			  ○ Industrial electrification is off-track (there needs to be more electrification to replace use of gas) and although there has been some progress in development of Government policy to remedy this compared to the previous year's report (via deals to switch specific steel sites to electric arc furnaces), this is still insufficient across the sector (the UK Emissions Trading System will not achieve this on its own and the current carbon trading price is too low to incentivise it).
			• There remain significant gaps in plans for the necessary increase in industrial resource efficiency
			• The recommendation to introduce mandatory whole-life carbon reporting in buildings (and then targets for whole-life carbon) remains but no progress is reported on this.
			
			*Assuming that the 'Industry' sector in the 2024 report is equivalent to what had previously been titled the 'Manufacturing & Construction' sector in the 2023 report.
				• **Set ambitious policies specifying target limits for embodied carbon in new development** – or at least for the reporting of embodied carbon (as this will educate developers who generally are not aware of their buildings' embodied carbon, and data from this reporting can form a baseline on which future target limits can be based). Such targets are typically expressed in $kgCO_2$ per m^2 floorspace, and can be based on existing industry guidance such as that of LETI or the UKNZCBS.
				• **Set policies that seek to favour the reuse of existing buildings wherever suitable, feasible and viable**, rather than demolition and rebuilding (albeit recognising that there will be cases where demolition is not always avoidable, e.g. where the existing building is not suitable for the necessary proposed use; also recognising that in some cases there could be wider carbon benefits e.g. where the replacement building(s) could increase density in a location where car use would be very low)
				• **Set ambitious policy for carbon reductions in proposals for new non-residential premises including manufacturing** – this policy could be broken down into specific requirements for energy efficiency and renewable energy, or could be a carbon reduction target regardless of how it is achieved in the building
				• **Take a positive stance towards proposals for business premises that primarily support low-carbon construction industry** (for example that manufacture, supply or install or maintain low-carbon construction products or services, including training facilities for low-carbon construction techniques)

Topic	UK-wide changes needed to hit legislated carbon goals (note: non-exhaustive)	CCC 2023 progress report[xxvii]	CCC 2024 progress report[xxviii]	Therefore what local plan policies may be logically needed to 'mitigate climate change in line with the Climate Change Act' as per the NPPF?

Transport	• New cars/vans majority EV by 2030 and all EV by 2032
	• Reduce average car mileage by 6% by 2030, reaching 17% by 2050 (from pre-2020 level)
	• Road investment should depend on evidence that this would not increase overall emissions, and should be accompanied by proportionate investment in EV charging, active & public transport[xxx]
	• Electrify 55% of rail network by 2050 (requires 200km/year)
	• Remove all diesel passenger trains from network by 2040
		• The rate of EV car sales was positive (slightly higher than in the CCC pathway)
		  ○ But: government's EV uptake goals from 2025 onwards are too low and the Government has delayed its 2030 target for 100% clean vehicle sales to 2035.
		• The rate of EV van sales is significantly too low and van traffic is increasing fast.
		• Government's Carbon Budget Delivery Plan does not sufficiently estimate the emissions savings that could be made through traffic reduction.
		• Transport is the highest-emitting sector in the UK.
			• Rollout of public EV charge-points is on track (this is the only indicator of low-carbon technology uptake that is on-track)
			• Car traffic is still below pre-pandemic levels, putting 'total car km travelled' on track, but van km travelled is slightly off-track (still too high)
			• Uptake of EV cars is now off-track because sales stalled in the most recent year's data
			• Uptake of EV vans remains significantly off-track, and has been increasing much too slowly
			• Transport remains the UK's highest-emitting sector
			• There remain significant gaps in plans for reduction in transport demand (driving)
			• A recommended priority action is to remove planning barriers to installation of EV charge-points at existing premises
				• **Set policies that require generous EV charging provision in development that has parking:**
				  ○ Building Regulations Part S (in force since 2022) will largely take care of this for typical residential parking that is outdoors and directly associated with residences (whether new build or major refurbishment).
				  ○ However, Part S only requires very minimal EV charging provision in non-residential and 'covered' car parking, and does not cover public car parking – therefore these are the gaps that local policy could most usefully aim to remedy by setting higher targets for the proportion of proposed spaces that must have EV charging provision, especially in parking that is likely to be used mostly by vans (e.g. logistics premises).
				  ○ Part S also only requires a charging speed of 7kW, which could take circa 10 hours to fully charge a car[xxxi] - therefore local policy could seek higher speed chargers in development that proposes parking at short-stay locations such as shopping centres.
				• **Structure the approach to transport planning to reflect the CCC's point about not investing in roads without evidence that this would not increase emissions and balancing this with investment in active and public transport –** the local plan specifically could reflect this in their developer contributions charging schedule, and bear this in mind wherever development is required to mitigate its impacts on the road network.
				• **Take a positive stance towards proposals that are necessary to fully electrify the rail network,** if these should arise.

Topic	UK-wide changes needed to hit legislated carbon goals (note: non-exhaustive)	CCC 2023 progress report[xxvii]	CCC 2024 progress report[xxviii]	Therefore what local plan policies may be logically needed to 'mitigate climate change in line with the Climate Change Act' as per the NPPF?
Land use	Forest cover to reach 18% of land use by 2050 (up from 13% in 2020)	• New woodland creation is significantly off track; today's rate must double by 2025. • Peatland restoration rates have been a factor of 5 less than recommended rate.	• New woodland creation remains significantly off-track. No improvement since the 2023 report, meaning there remains a need to more than double by 2025 and maintain that doubled rate in future. ○ This is a serious problem because tree's growth rate creates a long lag before they begin to remove significant amounts of greenhouse gas from the air – thus today's low afforestation rate is already curtailing the amount of carbon savings achievable in the 2040s and beyond • Peatland restoration rates remain significantly off-track.	• Take a generally negative stance to proposals that would result in the destruction of woodland, or where the benefits of the development outweigh that loss, require their like-for-like replacement elsewhere in the local plan area (including arrangements and funding for long-term maintenance of that new woodland or that restored peatland) • Likewise take a stance that dissuades destruction or drainage of peatland.

To clarify: Please note that where the table above uses the term 'take a positive stance' towards certain types of proposal, this is not to say that all such proposals must always be permitted in all circumstances. Rather, it is an indication that the benefits of such proposals should be explicitly acknowledged as vital parts of the UK's transition to net zero, which the NPPF instructs the planning system, including the local plan, to proactively support. As such, these benefits should be given a significant amount of material weight in the planning decision in proportion to their carbon savings impact and crucial role in that net zero transition, especially if being weighed up against more subjective concerns. Yet all such proposals of course remain subject to legal constraints such as biodiversity protections and heritage protections, and all application decisions are the result of a balance of policy priorities. Taking a 'positive stance' to such proposals would mean that the proposal's compatibility with the net zero transition is a central consideration as opposed to a peripheral one, and only refusing such applications if they really do have an unavoidable detrimental impact on other vital policy priorities that are equally as objectively important as the national net zero transition.

To conclude: The 2023 and 2024 CCC reports on national progress in reducing carbon emissions show that, although there has been some good progress in absolute emissions cuts overall, the majority of recent years' success have come from the phase-out of coal power and reductions in gas use due to high prices rather than to sustained improvements in efficiency. Moreover, key changes in relevant sectors to local planning (i.e. the built environment) are already behind where they need to be, and will need to accelerate in coming years in order to realise the UK's future legislated carbon budgets. In particular progress has been too slow on buildings energy efficiency, uptake of heat pumps, and embodied carbon in manufacturing / construction. In these points and overall, the reports have found that national government's current policies and plans are insufficient to drive forward large parts of this transition.

Therefore, this leaves a strong justification for local planning policy standards to be set to drive forward the necessary changes beyond or ahead of national standards, in order to compensate for the failure of national government action to do so. Without such action by the local plan, it would fail to mitigate climate change 'in line with the objectives and provisions of the Climate Change Act' as per the requirement set by the NPPF.

Bioregional Etude

Further notes on progress towards national carbon targets, beyond commentary found in the Climate Change Committee Progress Report 2023 and 2024

Regarding transport: We note that the Government's introduction of the new Part S of Building Regulations, which requires electric vehicle charging provision at all development that has associated parking, will go a long way towards supporting increased uptake of electric vehicles. This requires at least one EV charging point of 7kW speed or more to be provided for each home that has associated parking, and for one EV charging point at each non-residential development that has at least 10 associated parking space. Both of the above are subject to some exceptions, such as covered car parking (although Part S does not explain its rationale for this exception).

However, Part S *non-residential* requirements are not optimal in that they *do not scale up in proportion to the number of non-residential parking spaces*. Part S requires one EV charging point to be provided where there are 10 or more parking spaces associated with non-residential development, but its wording does not appear to require more than 1 EV charging point even if there are far more than 10 (e.g. it appears to require just 1 space no matter how large the non-residential parking provision is).

This is concerning in that the Climate Change Committee progress report cited above shows that electric *van* sales are behind where they need to be, and that *van* traffic is increasing fast. Vans are more likely to be business vehicles, thus likely to be parked in *non-residential* spaces, which as noted above is not ensured to have *proportional* provision of EV charging by Part S.

Part S also does not require any EV charging provision where parking spaces are not directly "associated with" a particular home or building. For example, where a developer proposes that residents or building users would use on-street parking or parking that is separated from the building by a highway or public footway, that parking appears not to be considered to be directly 'associated' with the development. Please note we do not find Part S completely clear on this.

Dense urban developments, which are more likely to be served only by on-street or covered car parking, are therefore less likely to be provided by Part S with sufficient EV charging provision to accelerate EV uptake needed for the UK's carbon goals. This concern is especially relevant to Cambridge as an urban area.

Regarding embodied or whole-life carbon of buildings: An industry coalition in the development sector drafted and proposed a "Part Z" to building regulations. This was then put forward by a House of Lords member as an amendment to the Levelling Up & Regeneration Act but was never debated and thus never implemented.

In the absence of any action by national government to introduce mandatory standards for whole-life carbon, the industry has acted to develop these. There is a single formal established standard for the accounting of whole-life carbon (BS/EN15978) and this has been translated into a methodology or 'Whole Life Carbon Assessment' by RICS. In turn, leading bodies and coalitions within the industry have developed benchmarks and targets using that RICS methodology, differentiated by building type. The prominent examples are the RIBA and LETI aligned carbon targets[xxxii] or the targets found in the UK Net Zero Carbon Buildings Standard (see separate report on the UKNZCBS). Given that target-setting policy is necessary on embodied carbon in order to fulfil the UK's carbon budgets, and given the absence of any national government standard with which local policy needs to be consistent, there is a clear role for the local plan to play and no reason why the LETI/RIBA targets could not be adopted if feasible and viable.

UK DESNZ/BEIS official subnational emissions inventories

As cited in previous reports for Greater Cambridge in 2020-21, The Department of Energy Security and Net Zero (DESNZ, formerly BEIS) releases annual figures that break the UK's carbon emissions down to a local level[xxxiii] to help local authorities make decisions. Until the 2021 data release this counted CO_2 only, but since 2022 now **includes CO_2, methane and nitrogen dioxide (although not F-gases)**. It uses data from the National Atmospheric Emissions Inventory and national statistics on local area's energy consumption. It excludes aviation, international shipping and military transport because there is no clear basis for how these would be allocated to local areas.

These DESNZ figures are one of several datasets used by Cambridge City Council to track progress in its Climate Change Strategy 2021-26[xxxiv] towards its goal of achieving a net zero city by 2030. South Cambridgeshire also has a Zero Carbon Strategy (2020[xxxv]) which quotes similar figures that are likely to come from this same DESNZ dataset although the Strategy does not explicitly disclose its data source.

These DESNZ figures include only **local direct emissions** (including from land use, chemical use and waste processing, as well as fuel use) **and grid energy use**. They do not include consumption-based emissions (embodied emissions of goods produced elsewhere but transported to and consumed in Greater Cambridge area). They are not broken down into 'scopes' as in the GPC's concept (explained in the previous GCSP reports), but would mostly equate to Scope 1 + Scope 2 as they do not include emissions from the local area's consumption of goods produced elsewhere (except electricity).

The DESNZ figures are **broken down into several sectors**: industry, homes, commercial buildings, public buildings, transport, and land use/forestry ('LULUCF'). We note that at the time of the previous (2020-21) reports for Greater Cambridge, this dataset used not to differentiate the public sector from other non-residential buildings. Each sector's data is also further broken down into the different activities within that sector (most include electricity use, gas use and other fuel use; whereas transport is broken down into railways, different types of roads, and 'other'). Transport emissions are calculated based on traffic flow data on local roads, plus fuel use on inland waterways and trains. Electricity use in railways is accounted for separately (in the 'industry/commercial' sector instead of 'transport').

As the DESNZ figures are presented by local authority area, we have here summed the Cambridge and South Cambridgeshire figures to derive the Greater Cambridge emissions, presented here in Figure 5 and Figure 6. These are from the latest available data release (from 2024, which, due to the time lag in data production, shows the figures relating to calendar year 2022).

These latest DESNZ figures show that buildings (of all different types grouped together) are responsible for 38% of emissions (Commercial + Public sector + Domestic). This would be even higher if industrial or agricultural buildings were included. This helps justify GCSP's draft net zero buildings policies.

The DESNZ figures also reveal how important it is to plan for reduced car use and enable low-emissions deliveries – as transport is responsible for 35% of the area's emissions.

These DESNZ figures also reveal how much carbon is removed by the area's grassland and woodland (see Figure 6, overleaf). This is positive, but also shows the scale of the challenge: The woodland/ grassland in the local area is nowhere near enough to counterbalance the area's emissions even if the green areas were expanded many times over, currently sequestering only 2% of the area's emissions.

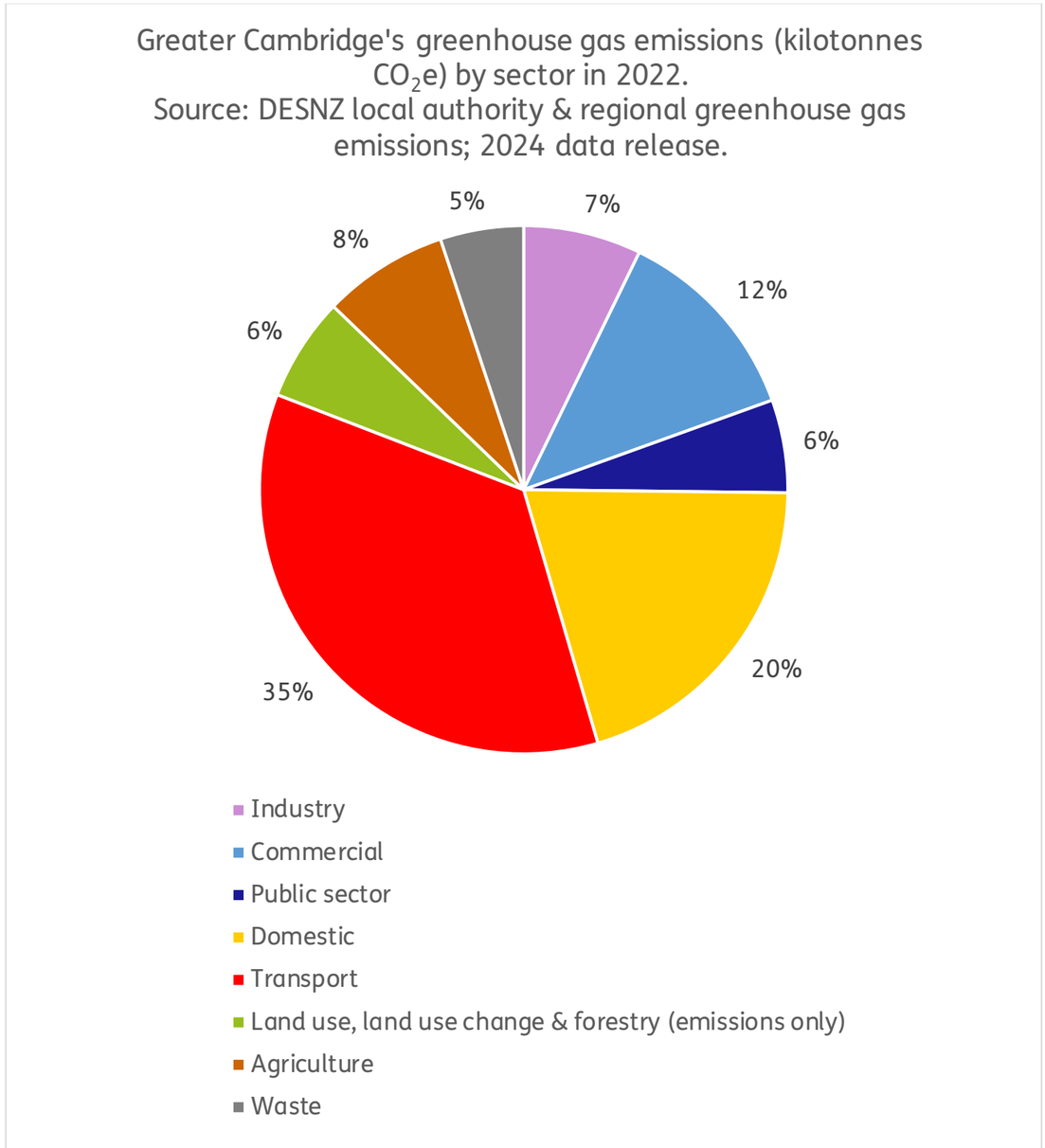

Figure 5: Greater Cambridge's greenhouse gas emissions (kilotonnes CO_2e) by sector in 2022. DESNZ 2024 data release

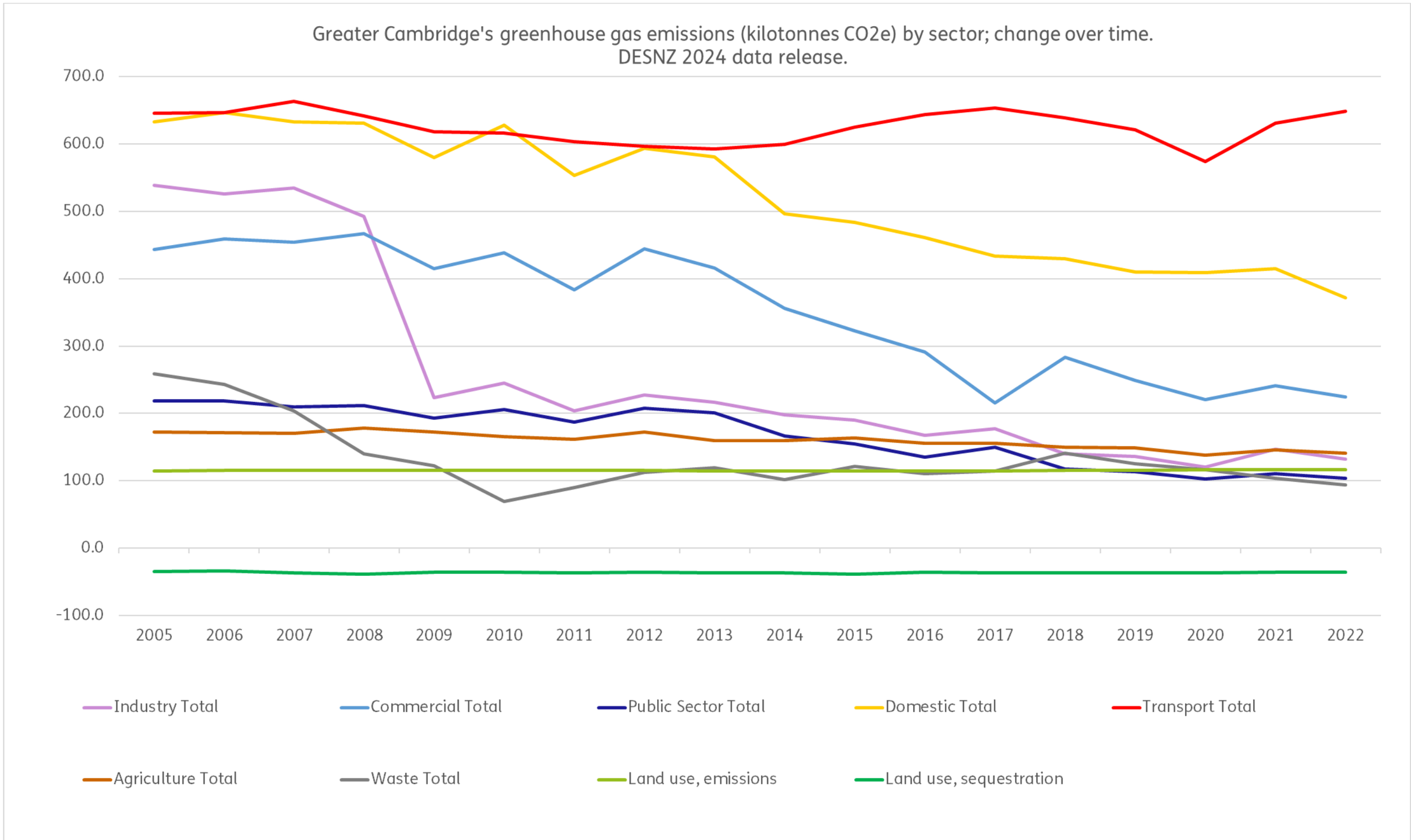

Figure 6: Greater Cambridge's greenhouse gas emissions (kilotonnes CO_2e) by sector; change over time. DESNZ 2024 data release.

National policy changes since Summer 2021, and legal cases relating to these

National Planning Policy Framework (NPPF) 2024

The new NPPF[xxxvi] retains (and in some cases strengthens) all the pro-climate content found in the NPPF versions cited in our previous reports for GCSP in 2020-21 regarding the duty of local plans (and whole planning system) to mitigate climate change and support the growth of renewable energy. The most relevant paragraphs, as they are numbered in the NPPF 2024, are:

- Paragraph 161: "The planning system should **support the transition to net zero by 2050** … contribute to radical reductions in greenhouse gas emissions … encourage the reuse of existing resources … and support renewable and low carbon energy and associated infrastructure". **This 'net zero' wording is new**, as older NPPF versions only mentioned a 'low carbon economy'.
- Paragraph 162+footnote 61: "Plans should take a proactive approach to mitigating … climate change … In line with the objectives and provisions of the Climate Change Act 2008".
- Paragraph 164: "New development should be planned for in ways that … help to reduce greenhouse gas emissions, such as through its location, orientation and design".
- Paragraph 165: "To help increase the use and supply of renewable and low carbon energy and heat, plans should … provide a positive strategy for energy from these sources … consider identifying suitable areas for renewable and low carbon energy sources, and supporting infrastructure, where this would help secure their development … [and] identify opportunities for development to draw its energy supply from … renewable or low carbon energy".

As in the previous NPPF versions, to meet the above imperative for carbon reductions 'in line with the Climate Change Act' would logically mean taking action to achieve the intermediate 5-yearly carbon budgets, as well as the 2050 net zero goal that is now explicitly referred to in paragraph 161.

Importantly, the **2024 NPPF no longer contains the insurmountable barriers to onshore wind power** that had been there since 2015 (whereby onshore wind could be vetoed by any single local objector). Now, it only states that once a local plan has identified suitable areas for *any* renewable energy, proposals outside those areas should show that they meet the same criteria as the suitable areas.

The 2024 NPPF's shift to 'vision-led' transport planning may also give a vital new foothold for climate:

- Paragraph 109: "Transport issues should be considered from the earliest stages … **using a vision-led approach** to identify transport solutions that deliver … sustainable … places. This should involve … identifying and **pursuing opportunities to promote walking, cycling and public transport use** … taking into account the environmental impacts of traffic and transport infrastructure – including … opportunities for avoiding and mitigating any adverse effects"
    - The new NPPF glossary defines **'vision-led approach' as "an approach to transport planning based on setting outcomes for a development** based on achieving well-designed, sustainable and popular places, and **providing the transport solutions to deliver those outcomes** as opposed to predicting future demand to provide capacity".
    - This gives the local plan vital scope to pivot away from providing for business-as-usual car habits (which would induce that car use to continue, as people drive more with better roads and parking). Instead, 'vision-led transport planning' **gives scope to require transport provision that actively causes modal shift**. Climate Change Committee analysis shows modal shift is urgently needed for the UK's binding carbon goals.

National policy statements on wind energy and other renewable energy in 2024

Alongside the NPPF 2024, two other national government formal policy statements in 2024 further clarify the new positive national policy stance towards wind energy development, with which local policy and decision-making will need to be consistent in order to be found sound.

The new national government's July 2024 Policy Statement on Onshore Wind[xxxvii] explicitly states the Government's intent that onshore wind should be on the same footing as other energy development. Relatedly, a December 2024 national consultation response[xxxviii] explains the reason is that "putting [onshore wind] on the same footing as [other energy development] will provide greater certainty to the industry and help deliver the government's Clean Power Mission". It then confirms that:

- Onshore wind power developments of 100MW or greater will be brought back into the Nationally Significant Infrastructure Project (NSIP) consenting regime, meaning that they would be subject to national planning consent rather than being a local planning decision.
- The threshold above which solar power development projects would be classed as NSIP will be raised to 150MW or more, as opposed to the current threshold of 50MW.

Part of the reasoning for these NSIP size threshold changes is that wind and solar technologies have advanced significantly since the original threshold of 50MW was first set (2008), meaning that a higher MW amount is now achieved with a physically smaller amount of equipment and land use.

National policy statements on brownfield development, 2023 - 2024

A Written Ministerial Statement[xxxix] was made by (previous government) Michael Gove on 19th February 2024 that could make it difficult to implement some policies on sites that are recognised as brownfield (previously developed land). This approach was also previously announced on 13th February 2024 via a press release.

The written statement indicated the then-Government's intent to introduce a 'presumption in favour of brownfield development' in 'the twenty most populous cities and urban centres in England'.

Based on the accompanying consultation paper, the national policy changes would mean:

- In planning decisions, additional weight would be given to the benefits of housing delivery on brownfield sites (in all local planning authority areas)
- A 'presumption in favour' for development proposals on brownfield sites where the local authority is failing to meet at least 95% of its housing requirement.
- Any policies relating to the *internal layout* of development, including daylight and sunlight policies, should be applied flexibly on brownfield so that they do not "inhibit making the most efficient use of a site (as long as the resulting scheme would provide acceptable living standards)". This would apply to all local planning authority areas.

The latter point should not strongly affect the ability to implement *carbon*-related policy, as this is not strictly a policy about 'internal layout', nor external layout and appearance or other policy standards. However, the consultation also asks a question about whether the consultee agrees that 'internal layout' should be the only kind of policy that has to be made flexible in this way. It is therefore not

impossible that the Government's future policy direction could be further extended to include any other policies that could potentially add to the cost or perceived complexity of brownfield sites.

However, the 'presumption in favour' principle, depending on how it is interpreted, could make it more difficult to refuse brownfield housing schemes that fail to comply with carbon or energy policies. The press release accompanying that statement also noted that the Government was extending Permitted Development Rights. This may make it difficult to impose carbon and energy-related policy expectations on changes to existing buildings, especially in the case conversion to housing.

It is important to note that the February 2023 Statement and associated press release were made before the then-Conservative government was replaced by the Labour one in July 2024. Still, a September 2024 policy paper[xl] by the new government indicates that it will continue with similar relaxations on brownfield development and change of use to housing, to support its confirmed return to mandatory housing targets much higher than those in recent years' planning regimes.

That 2024 policy paper describes not the granting of automatic permission on brownfield sites, but rather a "'brownfield passport': setting clear parameters which, if met, serve as accepted markers of suitability, with approval becoming the default and a swifter outcome" and "being explicit that development on brownfield land within urban settlements is acceptable unless specified exclusions apply", giving the example of "adverse impact in relation to flood risk and access that cannot be mitigated". It also notes that this would not come through the NPPF but would instead be part of "the suite of … web-based national policies for development management that we have committed to taking forward subsequently". The exact extent to which such a 'brownfield passport' would overrule any other locally specific policies, such as targets for energy and carbon performance in those developments, is not clarified within the policy paper.

We have not identified any clear policy statement that would clarify the stance on this issue from the new national government that has been in power since July 2024. However, this appears to be a live topic under consideration by the new Government, as indicated by the fact that a deadline for responses to that 2024 policy paper was added in February 2025 (as shown in the update log[xli] for that policy paper).

Other expressions of national policy intentions

The Summer 2024 consultation on planning system reforms (including but not limited to NPPF updates) had included a question on whether and how carbon accounting tools should be used in plan-making and development. Government's response[xlii] to the consultation feedback was published in December 2024. The conclusion on this question was that:

> "The planning system provides the freedom for local authorities and developers to carry out carbon accounting should they seek to do so. However … both local authorities and developers would benefit from clearer guidance on the use of appropriate tools. Therefore, we intend to update planning practice guidance [PPG] to assist local authorities in considering carbon emissions within the plan-making process, and to support developers in using carbon accounting to reduce carbon emissions as part of their … proposals."

That promised addition to the PPG has not been made as of April 2025 (at least not in the most appropriate section, i.e. that on climate change). In fact the entire NPPF section on climate change remains significantly out of date on many fronts, having been last updated in March 2019 and some parts untouched since 2014, therefore still refers to obsolete expectations set by now-revoked national policies (see 'written ministerial statement' sections later in this report). In additional to referring to the revoked WMS2015, this means the PPG has not been kept up to date with any of the following:

- The June 2019, July 2021, September 2023, December 2023 or 2024 versions of the NPPF,
- The Infrastructure Planning (Electricity Storage Facilities) Order 2020, which makes energy storage of over 50MW the domain of the local planning authority, except pumped hydro[xliii],
- The Levelling Up & Regeneration Act.

We also note that the NPPG as a whole is strictly guidance and not policy – this was confirmed at a High Court judgement[xliv] (R (Solo Retail) v Torridge DC [2019] EWHC 489 (Admin) [33]).

Carbon reductions as an issue of design quality

There has been some evidence that the National Planning Policy Framework since 2021 has led the Planning Inspectorate to place a greater focus on design quality. An analysis[xlv] of appeals from July 2021 – early 2022 found that inspectors were no longer dismissing poor design as a reason for refusal simply because of a shortfall in housing land supply, and that the likelihood was very low of the developer being awarded costs if their application is refused on design grounds.

The relevant parts of the NPPF (still present in the December 2024 edition) state that:

- "Development that is not well designed should be refused, especially where it fails to reflect local design policies … [and] Significant weight should be given to … outstanding or innovative designs which promote high levels of sustainability". (Paragraph 139)

- "Local planning authorities should seek to ensure that the quality of approved development is not materially diminished between permission and completion". (Paragraph 140)

This is likely to be most relevant to the setting of bold local plan policies on the topic of embodied carbon and the use of specific processes to reduce the energy performance gap. This is because:

- Embodied carbon is related to design quality through durability, heritage. biophilia[4] and generally 'innovative design which promote[s] high levels of sustainability'.

- Energy performance gap remediation processes are created solely for the purpose to 'ensure that the quality … is not materially diminished between permission and completion'.

However: It is important to note that this stance by Inspectors may change course given the increasing pressure to deliver higher housing numbers as a result of the new Government's return to mandatory housing targets.

[4] 'Biophilia' refers to humans' innate attraction to the living natural world, and wellbeing benefits experienced via exposure to it. Renewable materials like timber can support this and also reduce embodied carbon, reflected in today's growing focus on biophilic design in architecture.

Written Ministerial Statement of December 2023 (WMS2023) on energy efficiency in local plan policies and revocation of WMS2015

On 13th December 2023, a new Written Ministerial Statement (WMS) was made by Lee Rowley (Minister of State for Housing) together with Baroness Penn (Parliamentary Under Secretary of State for Levelling Up, Housing and Communities). Its topic is "Planning - Local Energy Efficiency Standards".

That WMS2023 explicitly revokes and replaces the WMS2015 that had been described in our previous report for Greater Cambridge. This came shortly after Government lost a 2023 High Court challenge against an inspector's decision at examination to reject the energy and carbon policies of Salt Cross Area Action Plan on the basis of the WMS2015 (although the official High Court written decision[xlvi] was released in early 2024).

However, the WMS2023 attempts to place severe new limitations on the exercise of existing powers held by local planning authorities to require improvements in new builds' energy performance.

What does the WMS2023 say?

The WMS2023 does not remove the ability to set improved local standards, but purports to constrain them in this way:

- **Energy efficiency policy must be expressed as % reductions on a building's TER (Target Emissions Rate set by Building Regulations), using a specified version of SAP.**
- Policies that go beyond national building regulations should be "applied flexibly to decisions … where the applicant can demonstrate that meeting the higher standards is not technically feasible, in relation to the availability of appropriate local energy infrastructure … and access to adequate supply chains."

The above would affect how the plan can exercise its power to require energy efficiency standards beyond those of building regulations (a power granted by the Energy & Planning Act 2008).This WMS therefore undermines several recent adopted local plan precedents that used other more effective metrics to deliver buildings suitable for the UK's carbon goals, such as energy use intensity and space heat demand (Cornwall, Bath & North-East Somerset, and Central Lincolnshire).

The WMS also states that any such energy efficiency policies should be rejected unless they have a "well-reasoned and robustly costed rationale that ensures that development remains viable, and the impact on housing supply and affordability is considered in accordance with the National Planning Policy Framework". This is not really new – any new policy should typically come with such justification. Still, this reiteration in the WMS is likely to bring additional scrutiny to any evidence put forward.

What impact does the WMS2023 therefore have on local plan climate mitigation efforts?

For new buildings, the WMS2023's stipulations would make it much harder for the local plan to fulfil its legal duty to mitigate climate change (Planning & Compulsory Act 2004) and NPPF expectation to support "radical reductions in greenhouse gas emissions … [taking] a proactive approach … in line with the objectives and provisions of the Climate Change Act". The main ways the WMS inhibits this are:

1. **Pushing the use of a *carbon* metric, when contrarily the goal is *energy efficiency*.** The biggest problem is that the WMS asks for energy efficiency policies to be expressed using the Part L TER metric – but TER is in fact not an energy efficiency metric. As the acronym suggests, TER is instead a *carbon emissions* metric. It is unclear why this choice was made in the WMS, given that the Part L methodology (SAP) does also contain two energy efficiency metrics: the TFEE (Target Fabric Energy Efficiency) and TPER (Target Primary Energy Rate). Additionally, as previously noted, the SAP methodology is notoriously poor at estimating the actual energy performance of a building, and therefore any of the SAP metrics would not reliably ensure that buildings have the absolute energy efficiency performance that is known to be a necessary part of the UK's legally binding carbon goals. That unsuitability is why several precedents adopted earlier in 2023 (Cornwall etc, see 'precedents' section) had used alternative metrics that are actually effective for delivering energy efficiency and measuring whether a building is 'net zero'.
2. **Forcing the use of a 'specified version of SAP' for the required metric:** SAP is the method used to calculate all target metrics set by Part L of Building Regulations, including the TER metric named by the WMS. SAP is updated more often than Part L. SAP updates can include anything from changes to the assumptions about the baseline building characteristics or the performance of standard types of equipment, through to changes in the carbon intensity of grid electricity. The current version is SAP10.2. Some precedent local plans had previously overcome this issue by stating that calculations must simply use 'the latest available version' of SAP. That way, the policy does not go out of date each time a new version of SAP is released.
    a. The WMS does not make clear whether it would be acceptable to say 'the latest version of SAP', or if it would have to be 'SAP10.2' or similar. If the latter, then the WMS would require the policy to be at risk of going out of date very quickly.
    b. SAP is due to be replaced with a new model, HEM (Home Energy Model) in 2025 when the Future Homes Standard (FHS) is introduced. This too would put local policy out of date if the policy states a 'specified version of SAP' as per the WMS. The HEM underwent consultation alongside the FHS in 2023-24; but HEM's final form, function and outputs are still not yet known. Thus it is not yet possible to write a policy that uses HEM metric for targets, as it would not currently be possible to robustly assess their feasibility or cost, even if the WMS had not failed to acknowledge HEM's imminent introduction.
3. **Creating a hostile climate towards buildings energy and carbon improvement policies:** Beyond its specific prescriptions, the WMS sets a tone that is generally discouraging (albeit not prohibitive) towards any local policy that exceeds "current or planned building regulations", stating that the "Government does not expect" this. This negative stance is likely to be used in objections from developers at examination. However, the WMS does not actually prohibit such policies so long as they are well-justified: it can equally be pointed out that the WMS wording does not say that the government expects local plans *not* to have such policies. GCSP should prepare to accurately counter any claims that the WMS contra-indicates all local energy policy.

What is the status of the WMS compared to the legal duties and powers, and must it be followed?

The National Planning Policy Framework confirms that Written Ministerial Statements are one of the "statements of government policy [which] may be material when preparing plans or deciding applications". However, being a 'material issue' does not make a WMS incontrovertible, especially where the WMS would inhibit the fulfilment of legislation and other more relevant national policy.

Legislation holds far more material weight than a WMS. Therefore, it may be possible to diverge from the WMS' stipulations by demonstrating that adhering to the WMS would prevent the local plan from fulfilling its legal duty to 'contribute to the mitigation of climate change' imposed by the Planning & Compulsory Purchase Act. This point could be underlined by similar evidence on the ability to meet the NPPF expectation for 'radical' carbon reductions *in line with the Climate Change Act*. The NPPF should hold at least equal material weight to the WMS, as the NPPF undergoes extensive public consultation – whereas the WMS had no consultation or democratic process.

Additionally, the NPPF 2024 is now more recent than the WMS2023, and the NPPF's provisions around carbon reductions are even stronger in the 2024 version with its reference to net zero as previously explained. There may also be other national policy (e.g. on energy efficiency targets) whose aims the WMS2023 would inhibit.

Government does not appear to have made any assessment of how the WMS would affect the ability to fulfil those climate mandates, nor advised which should take priority where they conflict.

The most robust evidence for this argument would be energy and cost modelling to demonstrate the difference that would occur as a result of following the WMS stipulations, as opposed to using more accurate energy metrics (used in industry standards and recent pioneer local plans). For example:

- The difference in carbon emissions, thus moving the buildings sector's carbon reduction trajectory even further from what it needs to be within the 'balanced pathway to net zero' as analysed by the Climate Change Committee to comply with the UK's legislated carbon budgets (set under the aegis of the Climate Change Act, as previously explained)
- The difference in energy efficiency compared to what the Climate Change Committee has shown to be necessary as part of the UK's wider energy system transition needed for all sectors (not just buildings) in order to meet the legislated carbon budgets as above. This is also relevant to any other local plan objectives on the affordability of home running costs.

Even with such evidence, there remains a risk that it may be challenging to fully express this argument to the Inspector in the time available at examination, as it is a highly technical topic to explain to anyone not already expert in net zero carbon building design. The WMS2023 states that such policies may draw close scrutiny from central government, meaning GCSP may have to defend against not only the usual objectors but also central government. This does not mean GCSP *should not* pursue such policies, but that it may need to even more robustly prepare to defend them if so (albeit the WMS2023 was made by the previous Conservative government, whereas the Labour government that took over in mid-2024 might not have the same intent to scrutinise compliance with its predecessor's policy).

Regarding the extent to which a WMS constrains local plans' powers, we note a recent High Court decision (February 2024, from hearings in November 2023) overturned a planning inspector's decision that had been based on overly literal interpretation of a *different* WMS (the WMS2015, as previously outlined). This was in relation to energy efficiency policies within the Salt Cross Area Action Plan. The decision confirmed that **a WMS "cannot mis-state the law, or restrict the legal powers of the LPA under the 2008 [Planning & Energy] Act."** This should therefore also be true about the WMS2023.

However, that decision also notes that the Planning and Energy Act includes a clause saying that local policies using the powers of that Act 'must not be inconsistent with relevant national policies for England'. It is thus difficult to predict how this would be interpreted by a planning inspector, given that there would appear to be somewhat of a 'circular reference' in that the Planning and Energy Act could be seen to contain within it a clause allowing 'national policy' to invalidate the exercise of the powers that it grants, although the Act itself – as a piece of formal legislation – holds primacy over the ill-defined set of items that could be considered to constitute 'national policy'.

Legal challenges against the WMS2023

A legal challenge to the WMS2023 has been brought by the same community organisation that successfully won the Salt Cross AAP case as cited above. The challenge put forward that the WMS2023 is unlawful on the following grounds:

1. Failure to fulfil the duty (Environment Act 2021) to have regard to the Environmental Principles Policy Statement (EPPS), as no EPPS assessment was released until after the WMS was made and a separate pre-action letter challenged that lack
2. That the WMS2023 unlawfully purports to restrict local authorities' exercise of powers granted to them by statue (specifically the Planning & Energy Act, but also the Planning & Compulsory Purchase Act which establishes the climate mitigation duty and the statutory presumption in favour of the application of adopted development plan policies)
3. That the WMS2023 unlawfully misleads the reader about decisionmakers' legal powers.

This case was heard at the High Court on 18 June 2024[xlvii] but was not successful[xlviii]:

- Ground 1 was rejected because the judge followed other case law that had established that the assessment can come after the national policy itself so long as the assessment is still "done in substance, with rigour and an open mind".
- Grounds 2 and 3 were rejected because the Planning & Energy Act contains a clause within it that local policies must not be inconsistent with relevant national policy, therefore as the WMS is such a relevant national policy, it is in accordance with the Act. However, the judgement does not evaluate the point about whether the WMS' stipulations inhibit the ability to fulfil the separate legal duty to mitigate climate change.

The claimants intend to go to appeal and have won the right to do so[xlix]. This is being supported by input from local authorities including Essex County Council, and it has been reported[l] that the hearing date will be 24-25 June 2025. It is uncertain whether the appeal decision will come in time for GCSP's intended consultation timeframe[li] for Regulation 18 in late 2025 or Regulation 19 in mid-2026.

Similarly, the Secretary of State had to defend itself via pre-action legal correspondence against a similar case raised in a pre-action letter by a coalition of local authorities about this WMS2023. In that correspondence, the Secretary of State had to concede[lii] that the WMS is only a material consideration (not a concrete constraint) and cannot inhibit the powers granted to the local plan by legislation.

Meanwhile, Good Law Project has also begun a public campaign[liii] to pressure Government to revoke the WMS, and Essex County Council has updated its open legal advice[liv] to explain why the 2023 WMS should not legally be interpreted as a binding constraint from which local policy cannot diverge with sufficient justification. Please see Appendix 3 for key relevant extracts of that open legal advice.

If successful, these legal challenges could further support GCSP's proposed policy.

What can the Local Plan still do if the WMS2023 were strictly interpreted?

The WMS only relates to *energy efficiency* policies, not to policies on *renewable energy, embodied carbon*, or *overall carbon reductions*.

Therefore, policies on renewable energy could still:

- Require a certain proportion of energy use to be met with on-site renewable energy provision.
    - Define 'energy use' to mean *total* energy use, not just the regulated energy use as calculated by building regulations
    - Support this with feasibility and cost evidence – noting that several other local plans' similar requirements have been shown to be feasible, albeit those required that energy efficiency targets were met before calculating the amount of renewable energy needed.

And policies on embodied carbon could still (with suitable feasibility and viability evidence):

- Require reporting of embodied carbon~~, and/or~~
- Require new development to stay within certain target limits on embodied carbon

These would need to be supported by with suitable feasibility and cost evidence – either from the local context, or pointing to suitably relevant data from other recent local plans' evidence bases.

These embodied carbon requirements might need to apply only over a certain size threshold, in order to ensure the cost of the embodied carbon assessment itself is not prohibitive and that smaller sites are not held back by any shortage of professionals able to undertake the calculation. By contrast, larger sites tend to consist of a small number of repeated home types with identical materials, thus are able to benefit from the economy of scale by having a larger number of homes that can share a small number of embodied carbon assessment exercises.

Meanwhile, policies on *energy efficiency* – which is what the WMS affects – could either:

- Comply with the WMS by expressing the policy as a requirement to 'achieve a certain % carbon reduction on the Part L 2021 Target Emission Rate through energy efficiency measures' (as per examples outlined in our previous reports to GCSP e.g. London Plan 2021; this would require a definition of what is an 'energy efficiency measure'),

Or

- With sufficient evidence to justify diverging from the WMS (as previously outlined) - continue to use metrics that are not endorsed by the WMS, including:
    - A fixed or relative improvement on the Target Fabric Energy Efficiency metric calculated by Part L SAP10.2 (less risky, as this is still a metric from national technical standards),

      Or

    - Fixed targets for space heat demand and energy use intensity, set to align with the performance known to be necessary for the UK's carbon budgets as previously noted (see later section of this report for examples of how existing and emerging local plans have formulated similar policies – these are now more risky in light of the WMS but remain far more effective for meeting the duty to mitigate climate change).

‘Precedent’ examples of other local plan policies and inspectors’ reactions to them at examination

Since our previous 2020-21 reports to GCSP, there have been several crucial examples of local plans going through examination with the same type of ‘true operational net zero’ policies that use absolute energy efficiency targets using the metrics of Energy Use Intensity (EUI) and Space Heat Demand).

Although the planning system is not bound by precedent in the same way the legal system is, these examples provide important illustrations of how such policies can be found sound, using what evidence and in what circumstances. Also, again although each local plan examination is theoretically unique to the local circumstances, experience suggests that Planning Inspectors tend to be interested in examples of how their peers have given verdicts on similar policies elsewhere. This may especially be the case now in light of the WMS2023 as a relatively new piece of national policy which the Inspectorate is still learning to interpret.

Three of these precedent examples have so far been fully successfully adopted at the time of writing. All of these occurred before the WMS2023. These are:

- Cornwall Council Climate Emergency DPD (examined mid-2022, adopted early 2023).
- Bath & North East Somerset Local Plan Partial Update (examined mid-2022, adopted early 2023).
- Central Lincolnshire Local Plan (examined late 2022, adopted early 2023).

However, since the WMS2023 there have been several further emerging plans going through consultation and submission. Several of these are summarised in the table opposite. Some of these, and others, are then detailed further in the precedent case studies on the subsequent pages.

Of those since the WMS2023, we are aware of two which have been through examination:

- **Tendring Colchester Borders Garden Community DPD (TCBGC DPD)** successfully went through hearings in 2024 and its Inspectors Report on 1st April 2025 kept its energy metrics unscathed, demonstrating that this kind of policy can be found sound even with the WMS2023 in place.
- **Isle of Wight Island Planning Strategy**[lv] hearings were in February-March 2025, with similar feasibility and costs evidence as all the successful plans previously noted (Cornwall, Bath, Central Lincs, Tendring). Yet its evidence did not make a very clear link to why these policies are necessary for the national legislated carbon budgets and therefore the climate mitigation mandate in law and the NPPF. The Inspectors were unconvinced that the evidence justified divergence from the WMS2023 metric, in the specific situation of the Isle of Wight where housing delivery is thought to be uniquely challenging due to the fact of island geography making this setting less attractive to developers than the mainland. However, we note one of the Isle of Wight inspectors was the same who wrongly rejected the Salt Cross AAP in 2022 (a decision later overturned in the High Court in 2023, as noted in the table here).

It must be noted that not all plans using the energy-based net zero approach are receiving positive reactions from the Inspectorate at examination. However, clearly the use of absolute energy metrics is not the only driver of varying verdicts from the Planning Inspectorate: Several emerging ‘net zero’ policies were also rejected by their inspectors in 2023 even where they were expressed using building regulations metrics – for example, Lancaster (due to a perceived inconsistency with national policy in that it diverged from the WMS2015[lvi], which as previously noted is now obsolete). Another example is Bracknell Forest, rejected ostensibly because[lvii] its evidence base did not demonstrate sufficient local circumstances to justify going further than building regulations.

‘Net Zero’ policies using building regulations metrics)	True net zero operational carbon (as per Greater Cambridge emerging draft policies)
Successes at examination • Too many to mention here – but the most well-established examples are Milton Keynes and Greater London, while prominent recent examples include Reading and Warwick as noted above.	**Successes at examination** • Bath & North-East Somerset (adopted January 2023) • Cornwall (adopted 2023) • Central Lincolnshire (adopted 2023) • Merton (partial success – adopted 2024) • Tendring Colchester Borders Garden Community DPD (Inspector’s report April 2025)
Rejections at examination: • Lancaster (examination 2022) on the basis of going beyond the limit set by the WMS2015 even though the policy was designed to be aligned with the national Future Homes Standard. • Bracknell Forest (examination 2021) on the basis of lack of evidence or local circumstances to justify going beyond Building Regulations.	**Rejections at examination:** • Salt Cross Area Action Plan AAP, because inspectors in 2022 felt that it could not be justified to depart from national building regulations / nationally described energy efficiency standards, based on a 2015 WMS – however, this decision was found unlawful during a High Court judicial review in Spring 2024. The AAP is therefore now being re-examined, in 2025 but faces the new obstacle of the WMS2023. • Bristol (partial rejection): After hearings in 2024, a September 2024 Main Modifications version replaces the energy metrics with a Part L TER target. Hearings continue in 2025. • Isle of Wight Island Planning Strategy: After hearings in early 2025, the Inspectors’ Post Hearings Letter (11 April 2025) deems the policies unsound in light of the WMS, partly due to the metrics but also being unconvinced of the robustness of evidence on cost/viability and housing deliverability in the Island’s unique case (the island’s unattractiveness to developers versus the mainland).
Emerging success: • West Berkshire (examination in May – June 2024); Inspector’s Report 8th April 2025 acknowledges the WMS23 but allows the use of the policy targets including an FEE % improvement target as well as the TER % improvement target.	**Emerging:** • South Oxfordshire & Vale of White Horse Joint Local Plan (submitted December 2024; hearing scheduled to commence June 2025). • Uttlesford Local Plan (submitted December 2024; hearings scheduled for June-July 2025) • Winchester (submitted November 2024; hearings running from April-June 2025)

The following pages explore these precedents (and some others) in detail, including (where available) the inspectors’ verdict and reasoning on these policies.

‘True net zero’ buildings policies using effective energy metrics (outside of Building Regulations)

There is a growing number of local authorities pursuing the industry-consensus approach (to achieving genuine net zero new build development as recommended by LETI, UKGBC, RIBA and others). As with the emerging Greater Cambridge policy previously summarised, the approach sets absolute limits on energy use, and requires this to be matched by 100% renewable energy. A policy following this approach sets three key requirements:

1. **Energy use intensity (EUI)** – absolute limiting targets for the predicted total amount of regulated and unregulated energy used, per m^2 of floorspace.
2. **Space heating demand** – absolute limiting targets for the amount of energy required to heat the building, per m^2 of floorspace.
3. **On-site renewable energy generation** – must match total energy use across the course of each year, in order to be a ‘net zero’ building.
    a. In instances where this cannot be met for technical reasons (e.g. a tall building whose roof is not large enough to hold enough solar panels to match annual energy use), some emerging policies also set minimum amounts of renewable energy generation per m^2 of building footprint as a fallback target. This ensures a good coverage of solar panels on the available roof space (typically reflecting circa 70% of roof space) while not ruling out development that is higher density (therefore making efficient use of land which is desirable for other reasons) or where the site is unavoidably overshaded.

Comparison of targets for residential development

Space heating demand (kWh/m^2/year)	Energy use intensity (kWh/m^2/year)	Target referenced
30	40	Cornwall Climate Emergency DPD (adopted 2023) Bath & North East Somerset Local Plan (adopted 2023)
15-20	35	Central Lincolnshire Local Plan (adopted 2023)
15-20	n/a	Climate Change Committee (recommendation)
15	35	Low Energy Transformation Initiative (recommendation) CIBSE (recommendation) Good Homes Alliance (recommendation)

To demonstrate compliance with any of these targets, applicants would need to use a robustly accurate energy modelling methodology. SAP 10.2, used for Part L compliance, is currently unable to accurately assess unregulated energy since the relevant equation is based on 1998 appliances, which were far less efficient than today’s. SAP therefore overestimates unregulated energy by approximately 50%, but meanwhile it also underestimates space heat demand by up to 270% (see evidence base of Cornwall climate emergency DPD described below), and SBEM has also been shown to generally underestimate overall energy use. This contributes to the well-documented energy performance gap in ‘business as usual’ construction, whereby design-stage energy performance predictions fail to correspond to the as-built performance of the building.

Instead, the industry-**recommended energy modelling method is Passive House Planning Package** (**PHPP**). PHPP can be used without needing to pursue the stringent Passivhaus certification process. An alternative accurate energy modelling calculation method, if used correctly, is **CIBSE TM54**. TM54 works by starting with the SBEM calculation and making adjustments to the inputs to reflect how the building will be used based on reasonable adjustments about occupancy and so on.

In Cornwall, the local authority’s energy consultants produced a ‘SAP conversion tool’ which converts SAP outputs to reasonably accurate total energy use predictions that are much closer to reality albeit not as accurate as PHPP. Conversations with Cornwall indicate that this conversion tool is the method used by the majority of applicants since the EUI-based net zero policy was introduced.

In all of these precedents, on-site renewable energy generation must match the EUI (multiplied by the floor space) to reach an on-site net zero energy balance. The technical evidence bases of these adopted plans has shown that in the majority of cases, this is feasible for the buildings that were modelled to represent the typical local development types. However, the taller the building, the less likely it is that there will be sufficient roof space to match the building’s energy demand (which increases as more floors are added). However, even for such taller buildings, façade-mounted panels and other ground-mounted renewable energy technology may provide a design solution to meeting the targets.

Several examples are explored overleaf, which, although they take a similar approach, have received very different reactions from their respective Inspectors during examination.

In the precedents cited here, a difference may be noted between standards set for residential versus non-residential development. This an important aspect of the energy-based policy approach. The typical usage of residential buildings is less variable therefore relatively easy to predict and understand, whereas non-residential buildings can vary significantly in terms of energy use. For example, an office with computers at each desk (and potentially a computer server bank) will have a far higher energy consumption than a retail unit that primarily consumes energy only through lighting and heating. Similarly, refrigeration adds a very large energy load to a building, meaning that a ‘retail’ building can have dramatically different EUI depending on whether it is a grocery retail or not.

Example: Cornwall Climate Emergency DPD 2023 (adopted)

The Cornwall Climate Emergency Development Plan Document (DPD) was adopted in February 2023 and retained all key elements of its net zero carbon policies.

Policy SEC1 (Sustainable Energy and Construction) includes that (paraphrased):

1. Major non-residential development (over 1,000m^2) to achieve BREEAM Excellent (or "equivalent or better methodology")
2. New residential development to achieve all of the following:
   i. Space heating demand of <30kWh/m2/year
   ii. Total energy consumption of <40kWh/m2/year
   iii. On-site renewable generation to match the total energy consumption, with a preference for roof-mounted solar PV. Where it is not feasible or viable to include enough renewable energy generation to match total energy consumption, the development should pursue the following:
      - Renewable energy generation to be maximised as far as possible
      - Connection to an existing or proposed district energy network
      - Offset the residual energy demand by a contribution to Cornwall Council's Offset Fund.

This is supported by evidence in the form of energy modelling analysis[1] by expert green building engineers. This analysis used accurate energy modelling method (PHPP) to identify a range of energy performance targets that are feasible in Cornwall and can reach the net zero carbon target in a variety of ways (different combinations of fabric / energy efficiency and renewable energy measures). This evidence piece also compared the proposed 'net zero carbon' building performance options against how a building would perform if it simply met the Future Homes Standard.

The analysis included cost information for each modelled building that was then used in the viability assessment for the DPD. That viability assessment found that most residential development scenarios remained viable with the policies applied, and that the majority of the cost uplifts over the 2013 building regulations will be incurred by developers anyway in order to meet the new 2021 building regulations, even without the local plan carbon policy.

Contrarily to the Salt Cross AAP, the Inspector's report positively stated that the 2015 WMS has clearly been overtaken by more recent events.

Example: Bath & North East Somerset Local Plan Partial Update (adopted)

The Local Plan Partial Update (LPPU) was adopted in January 2023 and became the first local plan in the UK to set net zero energy standards for new housing.

Policy SCR6 sets identical standards to Cornwall for residential development and was informed by the same technical evidence base. As set out in the Sustainable Construction Checklist Supplementary Planning Document, PHPP is required for major development, whilst an option to use SAP with the Energy Summary Tool is available for minor residential development. The Energy Summary Tool adjusts outputs from SAP to reflect in practice performance. These options reflect the same approach as Cornwall. It is however important to note that the calculation approaches were not tested at examination as the requirements are set out in supplementary guidance.

A specific technical study for the Bath & North East Somerset (B&NES) area was not seen as necessary because Cornwall and B&NES share the same prominent housing typologies and climate patterns that influence the efficiency of solar PV to provide an on-site net zero energy balance.

A key piece of evidence that assisted B&NES to successful adoption was a letter received from DLUHC, which reiterated the fact that local authorities are able to set standards that exceed Building Regulations i.e. that exceed the standards set out in the 2015 WMS. The 2015 WMS was not explicitly stated in this correspondence from government, yet the clarification on exceeding Building Regulations all but confirms that the 2015 WMS is no longer relevant.

This view was directly stated in the Inspector's report:

"*The **WMS 2015 has clearly been overtaken by events** and does not reflect Part L of the Building Regulations, the Future Homes Standard, or the legally binding commitment to bring all greenhouse gas emissions to net zero by 2050.*

*I therefore consider that the **relevance of the WMS 2015 to assessing the soundness of the Policy has been reduced significantly**, along with the relevant parts of the PPG on Climate Change, given national policy on climate change. The NPPF is clear that mitigating and adapting to climate change, including moving to a low carbon economy, is one of the key elements of sustainable development, and that the planning system should support the transition to a low carbon future in a changing climate. Whilst NPPF154b sets out that any local requirements for the sustainability of buildings should reflect the Government's policy for national technical standards, for the reasons set out, that whilst I give the WMS 2015 some weight, any inconsistency with it, given that it has been overtaken by events, **does not lead me to conclude that Policy SCR6 is unsound, nor inconsistent with relevant national policies**.*"

The logical view provided by the B&NES Inspector appropriately summarises the context of local authority powers to set their own energy efficiency standards. In contrast, the West Oxfordshire Inspectors' views represent inconsistency in decision making on net zero policies at PINS. As more local authorities propose ambitious policies that will need to be weighted against consistency with national policy, increased consistency should become apparent.

Example: Central Lincolnshire Local Plan (adopted)

The Central Lincolnshire Local Plan was adopted in April 2023. The adoption of this plan is significant as the energy requirements for Policy S7 and S8 are aligned with recommendations from LETI and the Committee on Climate Change.

Proposed Policy S7 (Reducing Energy Consumption - residential) includes that:

> "Unless covered by an exceptional basis … all new residential development proposals must include an Energy Statement which confirms in addition to the requirements of Policy S6 that all such residential units:
>
> 1. Can generate at least the same amount of renewable electricity on-site (and preferably on-plot) as the electricity they demand over the course of a year, such demand including all energy use (regulated and unregulated), calculated using a methodology proven to accurately predict a building's actual energy performance; and
> 2. To help achieve point 1 above, target achieving a space heating demand of around 15-20kWh/m^2/yr and a total energy demand of 35 kWh/m^2/yr … No unit to have a total energy demand in excess of 60 kWh/m^2/yr [which means] the amount of energy used as measured by the metering of that home, with no deduction for renewable energy."

The policy also includes a clause to address the energy performance gap:

> "The Energy Statement must include details of assured performance arrangements. As a minimum, this will require:
>
> a) The submission of 'pre-built' estimates of energy performance; and
> b) Prior to each dwelling being occupied, the submission of updated, accurate and verified 'as built' calculations of energy performance. [This] should also be provided to the first occupier … Weight will be given to proposals which demonstrate a deliverable commitment to on-going monitoring of energy consumption … which has the effect … of notifying the occupier [if] their energy use appears to significantly exceed the expected performance of the building, and explaining to the occupier steps they could take to identify the potential causes."

Proposed Policy S8 (Reducing energy consumption – non-residential) replicates the clauses except with a higher permitted total energy demand of 70-90kWh/m^2/year. The assured performance clause is also mirrored.

If a non-residential proposal can demonstrate why the metrics are not achievable, it can instead source renewable energy from off-site, pay the local authority to deliver equivalent renewable energy or other offsite infrastructure to deliver the appropriate carbon saving, or connect to a decentralised energy scheme.

Alternatively, a non-residential proposal may demonstrate achievement of BREEAM Excellent or Outstanding, instead of complying with the energy metrics.

Example: Merton New Local Plan (adopted 2024)

In April 2023, the inspectors expressed concerns in the Post-Hearings Letter[lviii] around the viability mandatory energy use intensity targets, particularly for smaller development, that may negatively impact delivery. This relates to potential issues for small housebuilders in that the required expertise in energy-efficient construction may not be widespread.

The adopted plan Policy CC2.3 therefore includes only requires *disclosure* of Energy Use Intensity (EUI) for all proposals of 1 or more homes or 500m2 of floor space, and 5-year post occupancy monitoring for major development. Supporting text paragraph 2.3.18 explains that developments should calculate the EUI with (CIBSE) TM54, (PHPP) methodology or equivalent.

The supporting text also includes *non-mandatory* exemplary EUI targets that development proposals are advised to strive towards:

- Residential and multi-residential – 35 kWh/m^2/year
- Offices, retail, GP surgery, hotels and higher education – 55-70 kWh/m^2/yr
- Schools – 65 kWh/m^2/yr
- Hotels – 160 kWh/m^2/yr
- Light industrial uses – 110 kWh/m^2/yr

The targets match those developed by the London Energy Transformation Initiative to be consistent with achieving national net-zero carbon targets (paragraph 2.3.21) and proven feasible by energy modelling for a set of 18 London Boroughs including Merton (paragraph 2.3.22). In contrast, paragraph 2.1.14 notes that typical current Part L EUI is 140/kWh/m^2/yr.

Policy CC2.3 also includes the following **space heat demand** targets, with SAP:

Development type	Until 31/12/2022	01/01/2023 – 31/12/2024	From 01/01/2025
Block of flats & mid-terrace house	<43 kWh/m^2/year	39 kWh/m^2/year	15 kWh/m^2/year
Semi-detached, end-terrace & detached house	52 kWh/m^2/year	46 kWh/m^2/year	20 kWh/m^2/year
Non-residential (target flexible)	-	-	15 kWh/m^2/year

Supporting text paragraphs 2.3.9 – 2.3.13 explain that the gradual uplift allows time for developers to adapt, and that the 2022-24 targets reflect the Zero Carbon Hub 'interim fabric energy efficiency standard' and 'full fabric energy efficiency standard' which have been demonstrated to be feasible, viable, and achieved in several schemes in Merton.

In **Policy CC2.4**, proposals must use low carbon heat. Proposals must demonstrate "how the proposal has made the best potential use of roof space" to maximise renewable energy generation, which should meet "100% of energy demand … where possible".

Emerging (nearly adopted) example: Tendring Colchester Borders Garden Community Development Plan Document (DPD)

This development plan document relates to a new settlement or urban extension of 7,500 new homes adjacent to the existing urban area of Colchester. The proposed land overlaps the district boundary between Tendring District Council and Colchester City Council. The development's proposed status as a 'Garden Community' provides enhanced rationale to pursue high sustainability ambitions here, on top of the climate emergency or national net zero goals that are relevant all across the UK.

Its "GC Policy 8" (submission version, 2023) includes energy metric standards similar to those of the other 'true net zero' plans described above, as follows:

- GC Policy 8: Sustainable Infrastructure
    - "All buildings must be net zero carbon in operation and achieve net zero operational energy balance onsite", to be achieved by:
        - New homes:
            - Space heat demand of ≤30kWh/m^2/year
            - Total energy use intensity (EUI) of ≤40kWh/m^2/year
        - (The DPD does not appear to set SHD or EUI targets for non-residential buildings)
        - All buildings: Onsite renewable generation to match or exceed the total energy consumption, or if this is demonstrated unfeasible, then offset the shortfall via contribution to offset fund.
    - "Compliance should be demonstrated by using an energy assessment tool proportional to the scale of the development."

We note that non-residential buildings are not subjected to any EUI or SHD target in this policy; however they are still subject to the requirement to be net zero carbon in operation via the net zero energy balance.

This DPD was submitted to the inspector in September 2023 and underwent hearings in May 2024.

The August 2024 tracked changes main modifications version[lix] retained all of the above targets, including the EUI and SHD targets.

The Inspector's Report was released on 1st April 2025, along with the associated Inspector's Modifications final schedule[lx] . This does not seek for those EUI or SHD targets to be removed, despite having given due consideration to the WMS2023.

This is an important precedent as it demonstrates that it is possible for such policies to be found sound even while the WMS2023 still stands. Still this should be viewed with the contextual caveat that the lead developer for this site was supportive of the AAP including these proposed energy targets, including their view on viability.

Emerging example: Winchester Draft Local Plan

This proposed submission plan underwent Regulation 19 consultation in March-May 2022[lxi] and was submitted to the Inspectorate in mid-November 2024.

Proposed Policy CN3 (Energy efficiency standards to reduce carbon emissions) in the submission version would require that all residential development must demonstrate the following:

- **No on-site fossil fuels** for space heating, hot water or cooking.
- Space heating demand of **15 kWh/m^2/year.**
- Energy consumption (EUI) of the building(s) to less than **35 kWh/m^2/year.**
- **On-site renewable energy generation to provide 100%** of the energy consumption required by residential buildings.

Supporting text notes that the energy modelling should be done with **Passive House Planning Package or CIBSE TM54** to be used for predicted energy modelling.

It appears in this Draft Plan that there is no option to offset shortfalls to the renewable energy generation and/or EUI target. No other authority has proposed the EUI approach without a last resort option to offset, although most evidence studies prove that the absolute energy requirements are technically feasible for the majority of housing typologies and therefore offsetting may not be required.

High-rise flat block is the primary typology that may struggle to meet on-site renewable energy requirements since there is limited roof space relative to the internal floor area. Given the housing mix in Winchester is unlikely to include this typology, this could explain why offsetting is not currently included in the Plan.

The Modifications documents (SD14a, SD14b, SD14c; all from April 2025) do not amend the energy targets. However, one of the Modifications (SD14a) does clarify that blocks of flats should meet the targets at a building level, rather than necessarily on an individual dwelling level.

Examination hearing sessions for this plan commenced on 22nd April 2025.

Emerging example: Leeds City Council Draft Local Plan Update (2023)[lxii]

Policy EN1 B would require new development to be operationally net zero by meeting various energy efficiency targets (listed below) and achieving the net zero energy balance through renewable energy onsite. The energy targets are as follows:

Up to end of December 2026:

Development type	Energy use intensity (kWh/m^2/year)	Space heat demand (kWh/m^2/year)
Housing (incl. student)	40	30
Office, retail, hotel, education	75	30
Leisure	100	30
Industrial	110	30
Research facility	150	30

The policy does however appear to allow flexibility towards feasibility constraints, as the policy also states that "Where the above standards are not met, applicants will be expected to demonstrate the technical or policy factors that cause non-compliance, including evidence as to how they have maximised attempts to meet the target EUI and space heating demand figures".

From January 2027:

Development type	Energy use intensity (kWh/m^2/year)	Space heat demand (kWh/m^2/year)
Housing (incl. student)	35	15
Office, retail, hotel, education	55	15
Leisure	100	15
Industrial	110	15
Research facility	150	15

Also from 2027, the policy introduces a requirement that developers contribute offset payments in any cases where the renewable energy requirement is proven unfeasible due to technical or policy constraints.

However, the policy includes exemptions for:

- Buildings that are not subject to Building Regulations
- Alterations & extensions to buildings of up to 1,000m^2
- Standalone ancillary buildings under 50 m^2
- Buildings with an intended lifespan of <2 years
- Gypsy, Traveller & Showpeople pitches and plots.

Supporting text to the policy emphasises that:

- Calculations must be carried out using an approved building modelling software such as IES-VE, SBEM and PHPP.
- Offset payments will be per kWh of energy use not met by onsite renewable energy, and this will be spent on installing renewable energy and energy efficiency projects, with the contribution sum being monitored through the Council's Annual Monitoring Report. It is stated that as of September 2023 the offset price was £1.35/kWh but would be updated over time based on national cost datasets on the cost of 10-50kW sized solar PV installations.
- Gas boilers and direct electric resistive heating will not be supported.

Policy EN1 Part B goes further than similar recently adopted policies, since it prescribes EUI targets for non-residential typologies alongside residential. The policy also explicitly refers to ruling out the use of gas boilers, whereas other policies rely on the energy targets themselves to rule out gas boilers and direct electric heating.

This plan does not appear to have been submitted or examined yet.

However, on the Council's website, this "Local Plan Update" page (from which Policy EN1 B was cited above) is presented separately from the "Leeds Local Plan 2040" page. The 'Local Plan 2040' page has been updated more recently. It is not made clear whether the 'Leeds Local Plan 2040' is an entirely new process rendering the 'Local Plan Update' obsolete, or whether the 'Local Plan Update' draft policies will find their way into the 'Local Plan 2040'.

Emerging example: Bristol City Council Draft Local Plan (Publication version November 2023)[lxiii] (and Modifications versions 2024)

Policy NZC2 in its original form would have required all new development to be operationally net zero carbon for total emissions, .including meeting the following absolute energy targets:

- ≤15-20 kWh/m^2/year space heating demand (all new development)
- ≤35 kWh/m^2/year energy use intensity (new homes and other residential)
- Provide on-site renewable electricity generation with an output equivalent to at least the annual energy consumption of the development

However, these absolute energy targets were struck out in the Modifications published in July (main and additional) and September 2024 after the initial hearings were completed in 2024 (noting that hearings are continuing into April 2025).

In the Modifications version, instead there is now a requirement for both residential and non-residential development to make a 100% reduction on the Part L Target Emission Rate. There is no requirement that any part of this be via energy efficiency. If the 100% TER reduction is not met, the developer must offset the remaining carbon by paying into the council's offsetting fund at the national Green book valuation of carbon per tonne (higher value, choosing the value for the relevant year, starting at £403), reflecting the building's emissions over a 30 year period.

The July Main Modifications document explains that these changes were made in response to the Written Ministerial Statement 2023 previously discussed. However, the final verdict is not yet known, as hearings continue through April 2025.

Elements of the original draft policy that remain in the Modifications version include:

- Major non-residential development must comply with operational energy/carbon requirements of BREEAM 'Excellent'
- Development should provide onsite renewable energy of 105 kWh/m^{2}fp/year
- If that renewable energy target is not feasible, the applicant must instead offset, either by securing the provision of directly-linked or near-site new additional renewable energy generation, or by contributing " a one off-payment equivalent to the cost of providing equivalent additional small scale solar PV energy generation elsewhere in the city over a 30 year period" with this price based on "the most recent DESNZ solar PV cost data for small scale solar PV [including] a 15% administrative charge (currently £99 per MWh)"

The key policy element here that is unique to similar emerging examples is the expectation of a certain amount of renewable energy based on the footprint of the building. Best practice for this metric is currently 120 kWh/m^{2}fp/year. Assessing against such a target makes it easy for planning officers to determine whether a development has truly maximised the potential renewable generation by deploying PV on the maximum available roof space and ensuring that the design and orientation of the roof itself is optimised to allow maximum solar PV.

Emerging example: Isle of Wight Island Planning Strategy Examination[lxiv]

Policy C11[lxv] "Net zero carbon and lowering energy consumption in new development" would require *residential* development to be net zero carbon, and meet the following:

1. Space heating demand: 15-20 kWh/m^2/year in "all housing", or 20-30 in bungalows
2. Energy use intensity: ≤35 kWh/m^2/year in "all housing", or ≤40 in bungalows
3. Renewable energy generation "ideally" equal to the predicted annual energy use.
4. Upfront embodied carbon limit of ≤300kgCO_2/m^2.

There is no size threshold for this policy as it applies to "all new residential homes". Also:

- The energy limits should be calculated with "predictive energy modelling (e.g. using PHPP or CIBSE TM54)" in detailed applications, and "conditions will require confirmation at pre-commencement, pre-occupation and post completion".
- Schemes "must demonstrate use of an assured performance method … to ensure that the buildings' operational energy performance reflects design intentions"
- The 'upfront embodied carbon' scope covers substructure, superstructure, MEP, facade and internal finishes, and 'upfront' refers to "Building Life Cycle Stages A1 to A5". (Neither the policy nor supporting text clarify this, but this must refer to the modules A1-A5 in RICS Whole Life Carbon Assessment method, which is the industry's standard approach to assessing embodied carbon).

This had an evidence base of analysis on how to reach the local goal of net zero by 2040, energy modelling of the proposed targets' feasibility, and the build cost uplift involved.

The Inspectors' 'post-hearings letter' (22 April 2025) found the policy unsound, viewing:

- That divergence from the WMS2023 (metrics used) had not been sufficiently justified.
- That the policy was unclear on what would be done if individual sites prove unable to fully meet the policies due to viability (especially small sites) or other
- Concerns that the net zero policy costs may be :
  - Not robust enough, by being out of date (due to recent inflation) and also differing from costs estimates produced by the Future Homes Hub
  - Insufficiently integrated into the viability study

It is unclear why these Inspectors found this policy unsound despite having essentially the same feasibility and cost evidence as the successful Tendring DPD cited above. It may be due to the strength of arguments to justify the policies' necessity in order to meet the climate mitigation mandate set by law and policy. For example, the Isle of Wight evidence spoke mainly in relation to academics' estimated carbon budgets for the *Paris Agreement*, not so much the UK's *legislated* carbon budgets. Evidence presentation at hearings may also have been lacking, as the Inspectors' letter point B3 misinterprets the cost uplift evidence, incorrectly stating the baseline on which the uplift sits.

The verdict may also have been due to the Isle of Wight's unique situation: Relating to the plan as a whole, the Inspector argued that because the Island's unique geography and market deters developers compared to the mainland, this local plan needs uniquely permissive policies in order to bring forward housing delivery.

Finally: We also note that one of the Isle of Wight inspectors was the same that wrongly rejected the Salt Cross AAP in 2022, a decision later overturned in Court.

Emerging example: Salt Cross Area Action Plan (AAP), West Oxfordshire

This AAP included policies that would require 'true net zero' buildings through compliance with a range of energy use intensity and space heat demand targets, differentiated by building type, similar to the examples cited above from Central Lincolnshire, Cornwall, B&NES and Leeds.

These targets would apply only in the Salt Cross area (not the entire local plan area) and were supported by locally-specific energy and cost modelling similar to that in the examples cited above.

Despite that evidence, after the initial examination hearings, a letter from the Inspectors instructed the removal the absolute energy requirements and that they should instead be referred to as 'as guidelines only'.

The Inspectors' main reasoning was their view that the proposed local energy targets (in Policy 2 – Net Zero Carbon Development) were not sufficiently justified by evidence and conflicted with the Written Ministerial Statement of 2015 which had placed a restriction on how far local energy performance standards could go – a limit which was in fact overtaken by national building regulations Part L 2021).

However, the Salt Cross case was successfully challenged in the High Court in November 2023, focusing on that interpretation of the policy's soundness. On 20th February 2024 a decision was passed down that the Planning Inspectors "erred in law in their approach by finding that Policy 2 of the AAP was inconsistent with the WMS[2015]" because the limit placed by the WMS[2015] had been overtaken by the introduction of Part L 2021 and had been contradicted by subsequent expressions of national policy[lxvi].

The Salt Cross AAP returned to examination in 2024 for that policy specifically, but this was paused from May 2024 to respond to a new hurdle it now faces: the Written Ministerial Statement of 13th December 2023. Hearings have now been scheduled for June-July 2025.

The WMS2023, unlike the WMS2015, does not limit *how far* a policy can go in requiring carbon reductions, but instead prescribes a specific (and in our view, highly inappropriate) carbon metric to be used to express any *energy efficiency policy* that goes beyond building regulations.

Still, any future argument to overcome the new WMS may be bolstered by the comment in the Salt Cross High Court decision that a WMS "cannot restrict the legal powers of the LPA under the 2008 [Energy and Planning] Act"[lxvii].

A further indication in favour of the Salt Cross draft policies is pre-action legal correspondence between the Secretary of State and a coalition of local authorities who had posited that the WMS2023 would be unlawful if it sought to restrict the exercise of local planning authorities' primary powers stemming from the Energy & Planning Act 2008. The Secretary of State's response was that the WMS2023 did not intend to do that and is only a *material consideration* to be taken into account, not a fixed constraint on how policy is expressed, despite the forceful language .

Carbon and energy offset payments

This section considers the principles of offset approaches as they have been (or could be) used in local plan policy. This firstly covers *carbon* offsetting, then *energy* offsetting as a slightly different approach.

Carbon offsetting

Carbon offset payments are sometimes set as a Section 106 requirement in order to make a development's unavoidable carbon emissions acceptable by funding off-site actions to mitigate them.

Carbon offset payments from developers were pioneered by Milton Keynes in 2008 and later adopted by Ashford and Islington, then across London, and now also Reading. These funds are meant to deliver actions that will prevent or remove the same amount of carbon that the development will emit over a certain number of years. Several key differences arise in how this kind of policy can work:

- Calculation and scope
- Pricing
- Collection and spending.

Calculation and scope

Key differences here, regarding how a policy could work, are:

- Whether to offset **only regulated** carbon emissions as calculated by SAP or SBEM (national calculation methods), **or also unregulated** emissions (and how to calculate these if so)
- **Number of years** of carbon emissions that the developer should pay for
- **When the calculation should be performed** – i.e. at the time of planning application, or on completion or post-occupation to ensure the offset amount reflects reality.
- **What carbon factors to use in converting energy use to carbon emissions** - and whether to account for future electricity grid carbon reductions, which are predicted but not guaranteed.

Some local planning authorities in London and elsewhere also seek offsets for unregulated emissions. Where local plans require *carbon* offsetting to 'net zero' we have not found any examples that use any method other than SAP / SBEM to calculate the *regulated* portion of the carbon emissions that must be offset (although some seek offsetting of the *unregulated* portion using a different method). However, some energy-based policies that offset energy and not carbon use tools such as PHPP when calculating the amount of offsetting required for policy compliance (see 'energy offsetting' overleaf).

Pricing in carbon offsetting could be based on either be either of the following:

- A **nationally recognised 'carbon price' per tonne**, such as the BEIS carbon valuation, or
- **Cost of delivering local projects** that would remove or prevent the same amount of carbon.

London's recommended offset price is based on a 2017 study by AECOM. This explored a range of costs to enact carbon-saving projects, minus the amount of 'copayment' that can be secured (e.g. if homeowners pay part of the cost towards insulating their home, and the fund pays the rest). These projects mostly consisted of retrofitting existing buildings with insulation or renewables. It concluded:

> "Given the wide variability in the costs and carbon savings for potential carbon offsetting projects [and] uncertainty in the percentage copayments that could be secured, it would be difficult to assemble sufficient evidence … to analytically derive a robust [London-wide] carbon price based on the cost of offsetting projects. As such, the approach adopted in this study is to … base [offset] prices … on a **nationally recognised carbon pricing mechanism**".

The AECOM study on pricing notes that offsetting [within the London Plan policy approach] must be considered in viability studies and could be varied by the location in the same way that CIL zones differ. The London Plan 2021 lets boroughs set their own price, noting that "a nationally recognised non-traded price of £95/tonne has been tested as part of the viability assessment for the London Plan". However, that 'nationally recognised non-traded price' of carbon is updated annually[lxviii] – and would today (2024) be £403/tCO_2 if that AECOM exercise were repeated today. 2018 Mayoral guidance notes some LPAs have based their price on the average cost of local projects to save carbon, e.g. Lewisham (£104/tonne), which is re-tested in a local viability assessment.

We note that it is important that viability assessments must not 'double count' the cost impact of net zero carbon policy: that is, the viability assessment should firstly consider the cost of meeting policy requirements for carbon reductions on-site through improvements to the building, and then only apply the cost of offsetting where there is any *remaining* carbon.

Collection and spending of offset payments

London mayoral guidance (2018) notes that offset payments should be collected via Section 106 agreements in the usual way and by the same team, and that:

> "LPAs generally choose to take **payment on commencement of construction** on site. Some choose to **split the payment**, with 50 per cent paid post-construction and 50 per cent prior to occupation. This is up to the LPA to determine. However, taking payment later than commencement of works can mean a high degree of uncertainty as to when funding will be received and is unlikely to enable carbon savings from the offset fund to be delivered before the development is occupied, creating a delay in offsetting a development's carbon impact. LPAs should also **note the time limits that apply to discharging Section 106 agreements and ensure funds are collected and spent in this time period**."

One potential pitfall is that carbon offset payments received via S106 agreements have sometimes had to be returned after not being spent in the allotted timescale. National Planning Practice Guidance notes that:

> "[S106] agreements should normally include clauses stating when and how the funds will be used by and allow for their return, after an agreed period of time, where they are not."

This can be avoided. London's 2019 annual report on the use of offset funds notes that in that financial year, "No LPAs reported returning offset payments to developers" and also that "The GLA would not expect offset payments to be returned in any instance and expects LPAs to be collecting offset payments for all applicable developments and identifying suitable projects for spending funds." The 2020 report similarly indicates no incidences of payments being returned. The respective reports for years 2021 and 2022 each indicate only one incidence each year. The 2023 issue does not state the incidence in that year but focuses more on how London's LPAs are overcoming challenges in spending the offsetting funds, including streamlining their processes for fund governance, growing

their internal capacity to administer the fund its projects, leveraging external match funding, promoting the fund internally and externally, and allocating funding to specific projects or services.

The Centre for Sustainable Energy notes that developers can ask for a refund of carbon offset payments that are unspent within 5 years. To avoid this, it recommends setting up:

> "defined structures and processes to stimulate new markets and opportunities for carbon saving measures … [Creating] an open application process to stimulate and attract carbon saving projects from council departments, the market and community that would be unviable without subsidy, for example community energy projects or insulation schemes. Applications should be proportionate to the scale of the funding provided, the emissions to be saved and the risk profile of projects."

> "Programmes of standardised measures, low unit cost, low risk and lower variability of carbon savings (such as the many domestic insulation programmes, run by council housing departments) should be required to apply to the fund just once as a whole programme, with detailed implementation targets, specifications, predicted carbon savings and reporting processes and timetables. Once approved, it should be as simple as possible for residents, communities or businesses to access funding through these programmes."

The 2018 London mayoral guidance encourages LPAs to pool Section 106 carbon offset payments rather than committing to spend them on specific projects. When the guidance was written, local planning authorities were only permitted to pool up to five S106 payments towards the same project, but this restriction was removed in 2019 and this can now be pooled with CIL payments too. Councils using either CIL or S106 must publish an infrastructure funding statement annually. When setting the carbon price, the Local Planning Authority should factor in a cost to administer the fund and set up a pipeline of projects to be funded.

Energy offsetting as a means of carbon offsetting

Due to the rising number of local authorities setting standards based on the approach set out in the previous section (with fixed energy targets and 100% renewable supply), energy offsetting is becoming more prominent. In this context, it is preferred over *carbon* offsetting because the cost of offsetting is based directly on residual kWh (£/kWh), instead of tCO_2 (£/tCO_2). Carbon intensity factors (see glossary) of the grid or other energy sources are not required for calculations when energy is offset (instead of a carbon offset), which leads to a **more direct reflection of exactly what is being offset**. Carbon factors for offsetting are often quickly outdated, and are somewhat crude in their estimation since they are annually averaged and do not reflect seasonal grid intensity variations. Planning decisions on carbon offsetting could also face a stumbling block around uncertainty about what the grid carbon factor will be by the time the development is completed; energy offsetting avoids this problem.

Energy offsetting **simplifies the process for project selection** due to the absence of carbon factors, since it becomes easier to assess how many kWh a new rooftop solar PV installation will produce, for example. This better ensures that the residual kWh that were not mitigated on-site **can be directly measured and mitigated** off-site through a funded project through an energy offset fund.

With *carbon* offset funds, several types of project including energy efficiency, retrofitting, and renewable energy could be appropriate for the delivery of those offsets, because the residual amount of CO_2 is not directly assigned to a particular measure. In some cases even tree planting is proposed despite uncertainty about its longevity, or transport measures despite uncertainty that this will deliver the required CO_2 savings in reality. This uncertainty can result in political disagreement about how to spend the fund on competing priorities, and administrative complexity in assembling a portfolio of projects, thus the required amount of carbon mitigation may not be swiftly (if at all) achieved.

When *energy* needs to be offset, it is usually due to a technical inability to deliver the required on-site renewable energy generation. This **makes it a simple decision to spend the fund** on off-site solar PV installations, preferably on existing buildings, which should aim to at least generate the residual on-site kWh. Through this simplified system, energy offsetting can become a reliable mechanism to ensure that any residual on-site renewable energy generation is wholly mitigated elsewhere.

Making offsetting effective for the overall transition to a net zero UK and Greater Cambridge

It should be explicitly noted that offsetting in all cases (whether carbon or energy) **should strictly be a last resort only acceptable in exceptional circumstances**. The risk of offsetting is that it may increase the burden on existing area-wide decarbonisation plans and use up low hanging fruit resources that are needed to balance out other unavoidable emissions in the area that cannot be reduced at source. **Additionality must therefore be the primary consideration** of both offset approaches to ensure that the offset funding delivers something that would not have otherwise been created.

To best guarantee offset mechanism effectiveness, a locally-specific net zero offset price should ideally be set.

In the case of *energy offsetting*, this should be based on the cost of existing delivered renewable energy schemes of varying size. Subsequently, an appropriate price should be set to sufficiently deliver the residual kWh not mitigated on-site. One recent emerging example in 2023 (Leeds; see above) sets this at circa £1.35/kWh, pegged to national estimates of the costs of solar PV installation. However, other slightly older estimations have been much lower: A 2022 study by the Centre for Sustainable Energy (CSE) for West of England (WoE) authorities determined the cost of energy offsetting based on 131 domestic rooftop PV installations that were delivered through the Local Authority Delivery Scheme (LADS), which was managed by Bristol City Council's energy service. The installation costs of solar PV projects through the LADS scheme well represents the costs of energy offset fund projects that are likely to occur in the WoE in the future, particularly due to the average installation capacity of 3.37kWp. The subsequent median installation cost under the LADS scheme was £2,180/kWp. Using the £2180/kWp median installation cost value, an offset price (including 15% administration costs for the fund) of 9p/kWh was estimated by CSE, which can be considered a local net zero energy offset price for the West of England authorities.

For *carbon* offsetting as opposed to *energy* offsetting: Assuming the current electricity emissions factor in SAP10.2 (136 gCO_2/kWh), an estimated net zero local offset price - £652/tCO_2 for Bath & North East Somerset Council – was close to double the price of the 2023 BEIS Green Book valuation of £378/tCO_2. This represents the importance of a correctly set price, which otherwise risks insufficient funds to deliver the residual on-site energy elsewhere.

Energy performance gap

The energy performance gap is the difference between the predictions for a designed building's energy use, and the amount of energy it actually uses in operation. This is due to three factors:

1. Poor methods used to predict the energy use of a building (including poor calculations, incorrect assumptions, and exclusion of 'unregulated' energy loads)
2. Errors in construction which lead to worse airtightness or thermal envelope
3. Errors in system operation, and user behaviour different to assumptions (for example, turning up space heating while opening windows to dry laundry, not using heat system as intended, spending more time in the building than anticipated, or bright lighting left on overnight).

Unfortunately, the calculation methods used in Building Regulations Part L (SAP and SBEM) are very poor predictors[lxix] of the actual energy use of a building. SAP and SBEM are compliance tools[lxx], not tools to predict energy and carbon performance (yet often mistakenly assumed and used as such). This is not only due to out-of-date carbon factors for the fuels/energy, but the entire methodology.

For this reason, recalculating SAP on completion[5] will not prove that the building *performs* to the same metrics as in the SAP output (kWh/m^2 and CO_2/m^2), only that it is *built* as designed in terms of installed specification of insulation, heating system and renewable energy generation. The nation-wide lack of post-occupation energy monitoring means that both developers and planning/building control enforcers are often unaware of the scale of difference between SAP outputs and actual performance.

Point (2) above relates to how imperfections in the construction process can lead to worse energy performance than predicted. For example, a building may leak a lot of heat if insulation is incorrectly installed, or if a hatch to a cold loft is put in the wrong place and then moved, leaving holes in the air tightness membrane. Lower-spec products or poor substitutions may sneak in – for cost-cutting reasons, supply difficulties, or simply because the right person was not on site at the time[lxxi].

Methods to address the performance gap

Several energy modelling methods give much more accurate predictions than SAP/SBEM, such as the **Passivhaus Planning Package (PHPP)** and **CIBSE TM54**. Whether or not the local plan is empowered to require performance standards set using these alternative calculation methods (in light of the WMS23 as previously discussed), it may still be able to **require *reporting* of predicted energy use using these methods.** Nevertheless, please note the new precedents from Bath/North-East Somerset, Cornwall and Central Lincolnshire have all successfully required this, sometimes through supplementary guidance). Of the two, TM54 is likely to be more clearly supported by the Planning & Energy Act 2008 as it uses building regulations Part L as a starting point[lxxii] and is now recognised in Part L 2021 for non-residential as a valid method to fulfil Part L's new requirement for accurate energy forecasting).

There are also several quality assurance processes that can be applied during construction to avoid the unnecessary errors that can cause the building to perform worse than expected. Our previous report to Greater Cambridge mentioned BEPIT and the Passivhaus certification process as two of these. Further examples include:

- NEF/GHA Assured Performance Process™ – this maps to the five stages of the RIBA Plan of Work (inception to verification) and involves expert impartial review by accredited assessor.
- Soft Landings – recommended by the UKGBC (as above) but discounted by some local planning authorities as an acceptable 'quality assurance' method (see example of Milton Keynes).
- NABERS UK Design for Performance (currently available only for offices).

There may be other suitable quality assurance processes. These **must** focus on energy performance, not just generic building quality. Greater Cambridge would need to decide on a case-by-case basis whether these are acceptable based on their individual merits and evidence of effectiveness (verified by track record of previous projects' post-completion testing or post-occupation energy monitoring).

The Local Plan **could require the use of these processes, subject to viability** (again relating to the cost of appointing qualified professionals to undertake these processes). Proposals could submit:

- **Energy modelling:** evidence to be submitted in energy statement with planning application, and recalculation of this if any relevant details are changed at reserved matters / amendments. (This would be necessary in any case to demonstrate compliance with energy intensity targets even at design stage, even without an in-use verification requirement.)
- **Quality assured construction:** evidence to be submitted along with other documentation to gain sign-off on completion from building control and discharge of planning conditions.
  - UKGBC Policy Playbook recommends "a recognised performance gap / assured performance tool will be used to minimise the … performance gap between design … and [completion]. The effectiveness … will be … ratified as part of the post-completion discharge of conditions".
  - **Evidence requirements in the case of no 'quality assured construction' scheme relating to energy use:** set a standalone requirement to carry out air tightness tests whilst the air barrier is still accessible as a construction requirement, if the full use of specific third-party quality assurance schemes would make necessary development unviable.

Verifying energy performance post-completion

Post Completion certificates can be issued once Planning Conditions are discharged. Local Authorities can condition to ensure that buildings are performing as anticipated; however, this would require engagement with the main contractor outside of their practical completion contract. Examples have sought this through an Area Action Plan and site-specific allocations.

The following pre-completion testing requirements could help in the assurance of as-built performance against the design standard. Outline costs[6] are provided albeit these are very old:

- Air tightness testing ~£1000 per property
- Thermographic testing[7] ~£400 per property
- U Value testing ~£400 for a dwelling (3 weeks per property)[8]
- Post-occupancy evaluation testing: ~£5000[9]. (if applied to scalable developments >c.50 dwellings, the economy of scale would reduce the cost burden through sample testing only).

[5] As-built SAP calculations have been used by several local authorities to determine the final amount of offset payments the developer must provide, but it does not verify performance or change the energy performance gap. Relying only on SAP will always mean the developer offsets far less carbon than the building will actually emit – although it does simplify the offset decision-making and data gathering process.
[6] Communities and Local Government (2008), Performance Testing of Buildings BD 2535
[7] Thermographic surveys can only be completed during the heating season. Where building completion occurs outside that season, the applicant could commit test at the earliest opportunity and perform remedial measures where needed. Homeowners must be fully informed.
[8] Accredited construction details can be checked through thermographic testing performed according to BS EN 13187: 1999. Identified locations with deviations from expected performance can be further investigated through a borescope survey and remediated if practical.
[9] https://www.pollardthomasedwards.co.uk/download/PTEpost-occupancy_evaluation2015_LR.pdf

Example: B&NES and Cornwall 2023 (adopted)

Supplementary guidance from Cornwall Council, and the Sustainable Construction Checklist SPD from B&NES respectively set out compliance and reporting frameworks for the councils' recently adopted net zero homes policies.

Both documents recognise the inaccuracy of SAP to accurately assess building energy performance, particularly with policies that assess energy use intensity and space heating demand. To resolve issues with SAP and subsequently minimise a performance gap, the councils take the same approach, which provides two options to developers for new build residential applications:

- **Passive House Planning Package** (PHPP) – suitable for all residential development
- **SAP + Energy Summary Tool** – suitable for minor residential development

PHPP is the preferred option for any size of development, but it is a requirement for major residential development.

The option for SAP to be used alongside the Energy Summary Tool is offered as a benefit to developers, so that the use of familiar Part L software can continue for minor residential development. The use of the Energy Summary Tool ensures that final outputs from SAP for energy use intensity and space heating demand reflect genuine in practice performance.

It is important to note that these requirements, which have the intention to reduce the performance gap, were not subject to deep interrogation during Examination.

Example: Merton New Local Plan (adopted November 2024)

Merton's new local plan[lxxiii] Policy CC2.3 includes a range of non-mandatory but highly encouraged space heat and energy use intensity targets. It also requires that the developments' energy use intensity must be disclosed (at design stage and pre-occupation, using calculations with (CIBSE) TM54, (PHPP) methodology or equivalent.

The supporting text explains that these calculation methodologies help to reduce the performance gap because they generate much more accurate predictions of energy use, compared to the SAP methodology used to fulfil Building Regulations Part L.

Emerging Example: Solihull Draft Local Plan (draft 2021)

Draft Policy P9 requires that all major developments must "implement a recognised quality regime that ensures the 'as built' performance (energy use, carbon emissions, indoor air quality, and overheating risk) matches the calculated design performance of dwellings as specified above [a 30% reduction on Part L 2013 commencing from now, and net zero carbon for all new development commencing from April 2025]".

Please note that Solihull's draft plan was withdrawn from examination in Autumn 2024, but this was due to the Inspector's lack of confidence in the land supply, not the energy/carbon policies. It is therefore likely that similar energy/carbon policies will be included again when Solihull eventually comes to submit a revised plan with a revised land supply.

Embodied carbon

In the absence of a national regulatory approach to address embodied carbon and without a specific local planning power granted to address it, some local plans have nevertheless taken steps to ensure embodied carbon is not entirely neglected.

Example precedent plans have taken one or both of the following approaches:

- Requirement to assess the building's embodied carbon, reported within the planning application
- Requirement to provide narrative about what steps are being taken to minimise embodied carbon, such as reusing existing buildings, use of lower-carbon materials, or efficient design to reduce material use.

Our review has only identified one adopted (but several emerging) plans that require a development to achieve a specific numeric target for embodied carbon, whether a limit or a % improvement on a baseline; see B&NES and Bristol examples below. This may be because of a lack of explicitly granted powers, and the 2015 Written Ministerial Statement that directed local plans not to set 'additional technical standards' for the sustainability of housing. It may also simply be because this is an emerging area where most local planners do not yet feel confident to set these requirements, robustly justify them at inspection, or interpret whether developers have sufficiently demonstrated compliance.

There is an industry standard method to calculate a building's embodied carbon: the RICS Whole Life Carbon Assessment for the Built Environment[lxxiv], which builds on the relevant British/European Standard (BS EN 15978). This RICS method splits the building's whole-life embodied carbon into a series of 'modules':

- Modules A1 – A5: 'Cradle to completion stage' (from raw material extraction through to completion of the building)
- Modules B1 – B5: The 'use stage' of the building (such as maintenance, repair, replacement and refurbishment)
- Modules C1-C4: 'End of life stage' (deconstruction, demolition, transport, waste processing, and final disposal).

It is important to note that the RICS / EN15978 approach assumes that any carbon that was sequestered by trees and stored in timber is released during the C1-C4 modules. In reality this may be avoided if the timber is eventually reused. This means that a whole-life carbon assessment may not recognise the full benefit offered by timber buildings, which is that the timber would lock up carbon for most of this century. This is a critical period[lxxv] at risk of reaching tipping points for feedback loops of runaway climate change – such thawing permafrost releasing huge amounts of methane, or large areas of rainforest dying back. It matters not only *how much* carbon is emitted, but *when*.

Therefore it makes sense to set targets that exclude modules C1-C4, to give timber buildings the 'credit' for the carbon they will lock up for many decades. B1 – B5 also include many assumptions about uncertain future actions, therefore may need to be omitted from any planning targets due to a lack of robust justification.

Using the RICS 'modules', other building industry specialist bodies have created benchmarks and 'good practice' targets expressed in kilogrammes of embodied carbon per square metre of floor area:

RIBA Climate Challenge embodied carbon targets[lxxvi]: Includes all RICS modules A1-C4.

-	Business as usual	2025	2030
Homes	1200 $kgCO_2e/m^2$	<800 $kgCO_2e/m^2$	<625 $kgCO_2e/m^2$
Offices	1400 $kgCO_2e/m^2$	<970 $kgCO_2e/m^2$	<750 $kgCO_2e/m^2$
Schools	1000 $kgCO_2e/m^2$	<675 $kgCO_2e/m^2$	<540 $kgCO_2e/m^2$

LETI Embodied Carbon Primer targets[lxxvii]: RICS modules A1-A5 only.

-	Business as usual	2020	2030
Homes	800 kgCO2e/m^2	500$kgCO_2e/m^2$, (400 including sequestration)	300$kgCO_2e/m^2$ (200 including sequestration)
Office or school	1000 $kgCO_2e/m^2$	600$kgCO_2e/m^2$ (500 including sequestration)	350$kgCO_2e/m^2$ (250 including sequestration).

Bath & North East Somerset Council (see example below) has adopted an embodied carbon policy that requires a target to be met, yet this does not go as far as the LETI standards. However, it forms a highly important example that it is possible to justify such a target.

Even where the policy does not set an embodied carbon target, the LETI/RIBA targets could still inform supplementary planning guidance, to educate developers and allow planning officers a point of comparison to assess the relative merits of schemes' embodied carbon reports from developers.

If a local plan were to seek to require any of the LETI or RIBA embodied carbon targets, it is likely there would be challenges from the development sector consultees. One likely objection is the argument that such a requirement may inhibit the delivery of housing targets due to the volume housebuilding industry's failure to become familiar with this vital exercise until now.

The LETI and RIBA baselines are derived from various existing project data. Their future targets may also be based on case studies that could evidence their technical feasibility. However, there do not appear to be any transparent citations for the data. RICS may hold data on the typical cost of embodied carbon assessments and the number of professionals who are able to conduct them.

Further evidence is continually emerging that may help the planning justification for such targets. For example, in 2022 the UKGBC[lxxviii] found that a large low rise residential scheme in Cambridgeshire reduced embodied carbon by 20% compared to a typical baseline, with only a negligible impact on capital costs (0.6%). This was achieved via simple changes such as reducing asphalt area in favour of low-carbon permeable paving and using swales to reduce the need for other drainage infrastructure. Analysis commissioned for local planning in Essex[lxxix] and Oxfordshire[lxxx] has also evidenced feasibility and costs of hitting embodied carbon targets at the same time as 'true net zero' operational targets.

Further relevant data could begin to be assembled by the local authority if it firstly adopts a requirement for major developers to simply *report* their embodied carbon using the RICS methodology, and costs associated with steps taken to reduce embodied carbon. From these, local benchmarks for 'business as usual' and 'best practice' could be derived for a subsequent local plan policy or guidance.

Example: New London Plan 2021 (adopted)

Policy SI 2 includes that:

F. Development proposals referable to the Mayor should calculate whole lifecycle carbon emissions through a nationally recognised Whole Life-Cycle Carbon Assessment and demonstrate actions taken to reduce life-cycle carbon emissions.

Example: Bath & North East Somerset Council Local Plan Partial Update (adopted, 2023)

Policy SCR8 of requires that large scale development (>50 dwellings or >5000m^2 of commercial floor space) achieves an embodied carbon target of 900 kgCO_2/m^2 for RIBA modules A1 – A5 (upfront embodied carbon). The target only includes the following building elements:

- *Substructure*
- *Superstructure*
- *Finishes*

The policy requirement was selected because it is predicted to be cost neutral, as set out in the evidence study produced by WSP.

There is no last resort option to offset any shortfall of embodied carbon emissions to the required target.

Emerging example: Bristol Local Plan Review (submission version, 2023)

Policy NZC3 of this draft plan requires that major development must undertake and submit an embodied carbon assessment. Through this, new development will be expected to achieve the following targets:

Up-front embodied carbon:

- Residential (4 storeys or fewer) - <400 kgCO_2e/m^2
- Residential (5 storeys or greater) - <500 kgCO_2e/m^2
- Major non-residential schemes - <600 kgCO_2e/m^2

Whole-life embodied carbon:

- Residential (4 storeys or fewer) - <625 kgCO_2e/m^2
- Residential (5 storeys or greater) - <800 kgCO_2e/m^2
- Major non-residential schemes - <970 kgCO_2e/m^2

These whole-life requirements appear to be based on the RIBA Climate Change targets for 2025 Homes, 2030 Homes and 2025 Offices.

The draft policy does allow flexibility to feasibility, but in order to accept this as a reason not to meet the targets, “a full justification will be required as part of the embodied carbon assessment”.

The draft policy requires that any shortfall [exceedance] of the embodied carbon targets will be offset at the BEIS Green Book, cited in the policy as “currently £373/tCO_2e” (which was the 2023 value).

This policy has been undergoing examination throughout 2024 and this is continuing into April 2025 according to the latest examination website bulletins, therefore no final verdict is known on whether the policy was found sound. However, the modifications documents published in July (main and additional) and September 2024 do not mention any changes this policy. This may provisionally indicate that the policy was not immediate rejected by the inspector.

Existing buildings – decarbonisation via on-site improvements and via standalone renewable energy development for a cleaner grid energy supply

There is less clear direction in legislation, and fewer examples available, to demonstrate the acceptability of policies that seek energy and carbon improvements in existing buildings.

The variety of types, ages, uses and conditions of existing buildings make it impractical to devise universal requirements for their energy and carbon performance that could be reasonably sought through local plan policies. It is difficult or impossible to retrofit them to the same energy performance standard as new builds can achieve, and the workforce has a shortage of skills to do this effectively.

However, the decarbonisation of existing buildings is actually a more important challenge than that of new buildings, simply due to the scale of existing building stock compared to the rate of new growth. The Climate Change Committee has shown[lxxxi] (and Government has recognised[lxxxii]) that in order for the UK to meet its legally binding carbon reduction goals, it is vital that the existing building stock must be decarbonised via three main courses of action:

- Upgrades to building fabric and other energy efficiency measures
- Switching from gas or oil boilers to low carbon heating (largely heat pumps; some heat networks; and a small role for hydrogen in some areas in the future)
- Decarbonisation of the electricity grid via increases in wind and solar electricity generation to allow phase-out of fossil fuelled power stations.

The rollout of insulation and low carbon heating to existing buildings ('energy retrofit') have been far slower than predicted and needed[lxxxiii]. Heat pump rollout in particularly must be vastly accelerated[lxxxiv]. Costs for these technologies are decreasing and are expected to continue to do so, particularly with Government grant assistance. It is preferable however to prioritise fabric measures initially before heat pump installation to avoid excessive energy use; this is to ensure heat retention as heat pumps operate at lower temperatures than conventional gas boilers. These measures are vital for net zero, and will deliver economic and wellbeing benefits in the long term if implemented correctly.

Take-up of solar panels to existing homes dropped steeply[lxxxv] since the closure of the Feed-In Tariff scheme in 2019. Solar PV installations are however now back on the rise due to householders becoming increasingly concerned about the cost-of-living and energy crises.

Local plans also have only a very limited influence on the carbon and energy performance of existing buildings, as they can only seek changes to buildings where the building owner is seeking to require a change to the building that requires planning permission.

However: The planning system can (correctly or incorrectly) be perceived by building owners as yet another obstacle to retrofitting, on top of the cost, disruption, and risk of building damage. Owners may (wrongly) assume that all changes need permission, or that permission is likely to be refused. Building owners' willing action and investment is essential to the net zero carbon transition, and therefore it is vital that the planning system becomes a facilitator and not an obstacle to this.

The National Planning Policy Framework confirms that (paragraph 161): "The planning system should support the transition to a low carbon future … [by] encourag[ing] the reuse of existing resources, including the conversion of existing buildings; and support renewable and low carbon energy and associated infrastructure". It also confirms that (paragraph 168) when determining applications for renewable and low carbon development, the local planning authority should not require the applicant to demonstrate the overall need for renewable energy, and should approve the application if its impacts are acceptable or can be made so. This supports a permissive approach towards proposals for the addition of carbon-saving and renewable energy measures to existing buildings.

The role of local plan policy in reducing existing buildings' carbon therefore has two main strands:

1. Removing the actual or perceived planning barriers to energy retrofit changes to buildings.
2. Allocating or identifying sites suitable for renewable energy generation and distribution in order to decarbonise the energy that existing buildings use.

Point 1 (a permissive, supportive approach) could be pursued through the following tools:

- A local plan policy that explicitly encourages energy efficiency and carbon improvements to existing buildings with significant weight attached to those benefits, and signposts the reader to further guidance about how to make such changes acceptable in heritage-sensitive settings
- Supplementary planning guidance that clearly explains the range of retrofit measures that can be effective in improving energy performance of existing buildings, which kinds of changes are acceptable in different settings, how to make acceptable changes in heritage settings (referencing available expert guidance[lxxxvi]), and advising which changes simply do not need permission in most settings
- A Local Development Order giving blanket permission to specific changes in geographic locations that are not considered heritage-sensitive – such as certain acceptable types of upgraded windows, doors, external insulation, or heat pumps visible from the street.

Point 2 (proactive promotion of renewable energy generation and low-carbon energy distribution) could be pursued through the following tools:

- Spatial strategy (allocating or identifying suitable locations for such renewable energy features and potential low carbon heat network locations, in consultation with citizens, local business, conservation bodies and the electrical grid District Network Operator) – this can help to de-risk the prospect for potential investors, site owners and developers of renewable energy
- Infrastructure Delivery Plan – ensuring the electrical grid District Network Operator is ready to make the capacity upgrades necessary to serve a growing proportion of all-electric, gas-free, solar-exporting buildings, electric vehicles, and suitably located large-scale renewable energy
- A Local Development Order that gives blanket permission to add solar panels to buildings in locations not considered heritage-sensitive, expansion of strategic low carbon heat networks.

Actively welcoming energy and carbon improvements to existing buildings

We here present two further precedents of such policies on existing buildings, beyond the examples that were presented in our 2020-21 reports.

These are not intended to be strict requirements, as the local plan cannot require changes to existing buildings where no permission is needed. Yet they are examples of how to signal a positive stance by GCSP towards retrofitting, offering confidence to potential applicants and steering officers to take seriously the benefits of energy retrofitting when weighing up impacts.

Example: Cornwall Climate Emergency Development Plan Document (adopted 2023)

This emerging plan has been through Regulation 19 consultation, underwent independent examination in Summer 2022[lxxxvii], and was adopted in early 2023.

Policy SEC1 (Sustainable Energy and Construction) includes that:

> Significant weight will be given to the benefits of development resulting in considerable improvements to the energy efficiency and reduction in carbon emissions in existing buildings.
> Proposals that help to increase resilience to climate change and secure a sustainable future for historic buildings and other designated and non-designated heritage assets will be supported and encouraged where they:
> 1. conserve (and where appropriate enhance/better reveal) the design, character, appearance and historical significance of the building; or
> 2. facilitate their sensitive re-use where they have fallen into a state of disrepair or dereliction (subject to such a re-use being appropriate to the specific heritage asset).

Emerging example: Wokingham Draft Local Plan 2025

Wokingham's draft local plan as submitted in February 2025 includes:

Draft Policy CE6: Reducing energy consumption in existing buildings

1. "Development proposals which would result in improvements to the energy efficiency, carbon emissions and/or general suitability, condition and longevity of existing buildings will be supported in principle, with weight attributed to measures in proportion to the scale of improvement in fabric performance.

2. The sensitive retrofitting of energy efficiency measures and the appropriate use of microrenewables in historic buildings, including listed buildings and buildings within conservation areas will be supported, providing no unacceptable impact to the significance of the heritage asset.

3. Development proposals which involve the change of use or redevelopment of an existing building, or an extension to an existing building, should take all opportunities to improve the energy efficiency (including the original building, if it is being extended)."

.

Supporting text to this policy notes that the in-principle support on the basis of energy improvements will need to be gained through evidence of pre- and modelled post-development energy performance. It also notes that "Retrofit development which demonstrates best practice energy standards will be viewed as significantly beneficial", citing LETI Climate Emergency Design Guide performance standards of 50 kWh/m^2/year energy use intensity, 50 kWh/m^2/year space heating demand, and 20 kWh/m^2/year water heating demand. Like the emerging Greater Cambridge policy, the Wokingham policy supporting text also cites PAS2035 as a desirable framework in retrofit proposals.

Draft Policy C5: Parking and electric vehicle charging-confirms that "Proposals to retrofit charging points into existing areas will be encouraged providing this would not result in any adverse impact on highway, pedestrian or cycle safety". Clearly this would not make a difference to *building* energy performance as vehicle energy use is separate from that; however, it is a good example of how policy can delimit the type of impacts that will be considered relevant to consider in a retrofit action that would support overall carbon reductions in the local plan area.

Justifying the requirements: Necessity, feasibility and viability

Necessity and feasibility

The **necessity** for net zero carbon policies is clearly demonstrated by the previous sections' exploration of the scale and urgency of the climate crisis, the changes necessary to deliver the UK's legislated Net Zero Carbon 2050 goal and legislated carbon budgets (Climate Change Act), the absence of suitably ambitious national regulation or other incentives to deliver those changes, and the Local Plan's legal duty to proactively pursue carbon reductions (Planning & Compulsory Purchase Act) in line with the Climate Change Act 2008 (National Planning Policy Framework).

The Royal Town Planning Institute[lxxxviii] points out that "Where local plan policy which complies with the duty [to mitigate climate change] 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". This is because that duty stems from the Planning and Compulsory Purchase Act and Climate Change Act (supported by powers in the Energy and Planning Act). Formal legislation holds more weight than other government guidance that might seek to limit local plans' requirements.

Nevertheless, for a plan to meet the NPPF soundness test of being 'positively prepared to meet the area's objectively assessed needs for housing', the inspector will expect evidence that the carbon policies' cost impact does not prevent the delivery of the required housing targets. In addition, the NPPF paragraph 164 still requires local requirements to reflect national technical standards. This was reiterated through the WMS2023 (as previously discussed) which emphasises that energy efficiency policies in particular must be accompanied by a 'robustly costed rationale that ensures development remains viable, and that any improvements to energy efficiency is set against SAP.

The **feasibility** of identified measures is demonstrable through case studies and modelling. Evidence of feasibility of similar performance requirements is found in supporting documents of several pioneering recent and emerging plans cited throughout this report, in addition to the equivalent work conducted for Greater Cambridge in 2019-2021 (published[lxxxix] 2021 for the emerging local plan at early consultation stage). Echoing the findings of the Greater Cambridge 2019-2021 study, the evidence bases for local plan documents in Central Lincolnshire (adopted 2023)[xc] and Cornwall (adopted 2023)[xci] (among others) all have studies showing that 'true net zero' requirements can be fulfilled in typical new buildings types in these areas. In these studies it was shown how recent local new builds could have complied with the policy without changing the form or orientation of the building – only needing to add reasonably improved fabric, a heat pump, and solar panels that fit within the roof area.

In addition, feasibility in general is evidenced by the fact that all measures have been previously delivered by the building design and construction industry in the UK before today (low heat demand via effective insulation and airtightness; accurate energy modelling; heat pumps or other low carbon heat; well-oriented solar panels; Section 106 offset payments; embodied carbon assessment). Additionally, our own study[xcii] in July 2024 on implementation of the 'true net zero energy' policies in Central Lincolnshire, Cornwall, and Bath & North East Somerset (B&NES) found that there was no reduction in the number of applications after the introduction of the policies, contrary to what one would expect if developers believed the policies' standards unfeasible. Similarly, research[xciii] by the University of Bath found that in B&NES in the first 6 months after policy adoption there was already a good rate of successful policy compliance (81%) in all applications where the applicant was aware of the new policies.

The only potential policy components whose feasibility might be difficult to prove are the enhanced energy reporting and embodied carbon reporting. These skills are present and growing in the sector, but may not be mainstream outside of London projects and so there might be a bottleneck of skilled professionals available to conduct these. The impact of this bottleneck depends on the rate and scale of development that comes forward (in any local plan areas making a competing demand for these skills, as these services can be performed remotely). If development takes the form of fewer but larger applications consisting of broadly similar house types, these can be assessed efficiently via representative sampling. The skills bottleneck may be more impactful if housing comes forward via smaller and more varied applications that each need a separate assessment.

It should be noted that these specialist skills to meet net zero carbon policies will be a far smaller factor in housing delivery compared to the overarching construction labour shortage[xciv] which constrains the whole sector today. As national housing targets in 2020-21 were thought to already be too large for the workforce to deliver[xcv], and as the new national government has since revived mandatory housing targets that are expected to be even higher in most local areas, energy/ carbon modelling should not be assumed the deciding factor in the feasibility of delivering housing.

Additionally, **for the UK to hit its legally binding carbon reduction targets**, it will be vital for the specified energy targets to be achieved in reality, which will **not be possible unless the industry swiftly develops these skills** and deploys them as a standard practice in the vast majority of development. The policy requirements would stimulate the industry to expand its capacity to fulfil them (similar to commentary noted in the FHS Consultation Response, paragraph 2.40, 2.60, 2.61, 2.62).

In the absence of data to show whether there is or is not enough capacity in the industry to deliver these reports, a cautious approach could be to require the enhanced energy & carbon modelling only in major developments. If this choice is made, a required minimum specification could be devised for minor and householder proposals that would be likely (if not guaranteed) to deliver the required targets. This is the approach suggested in the Essex model net zero carbon policies (devised and evidenced at county level for optional use in the local plans of the various respective local planning authorities of the districts within Essex).

Viability of required improvements to the building

The cost of meeting building energy performance targets should be considered within a whole-plan viability assessment. Despite a range of precedent policies on carbon reduction, there is not a consistent approach to transparently assess the cost of policy compliance. Some viability studies (for policies seeking reductions of 35-50% on Part L 2013) have variously applied cost uplifts of:

- £5/m^2 for 'BCIS Energy + Carbon' although it is not explained how this reflects the policy requirements, and somehow reaching £25,000/dwelling for fully zero carbon homes.
- £15,000 per dwelling for a bundle of sustainability measures including carbon and renewable energy– without clarifying the breakdown, or how this cost of policy compliance was identified.
- 1% uplift to overall costs to allow for professional fees, and BCIS cost data reflecting the construction cost of the Code for Sustainable Homes Level 4.

These precedents were successfully adopted, so their viability assessments must have been deemed sound by the Planning Inspectorate for the purpose of those plans' policies.

Nevertheless, it would be more robust to use more transparently evidenced cost uplift data, specific to Greater Cambridge's policy proposals.

- The strongest way to assess viability impacts would be to commission a study of up-to-date cost uplifts specific to this region for a range of building types expected to arise during the plan period. Such analysis was conducted by our consultant consortium in 2020 from the Part L 2013 baseline, but today it would be preferable to show the cost uplift compared to the current baseline (Part L 2021). This is part of our current (2025) appointment for Greater Cambridge, i.e. to update the costs analysis that was previously conducted in 2019-2021 (see inset box for summary of that work).
- We also note that there are now also several other sources of credible evidence on the cost uplifts for a range of building energy performance standards at or close to 'true net zero' operational carbon, using the energy metrics that the draft Greater Cambridge policy would (EUI and SHD). For example, there are published cost evidence bases for recent energy-based local plan policies in Central Lincolnshire[xcvi, xcvii] (adopted), Essex[xcviii], and a collection of London boroughs[xcix]. This could lend further credibility to the findings produced in the Greater Cambridge context.
- Alternatively, if Greater Cambridge decides to change tack to take a policy approach based on – for example – meeting the Future Homes Standard (using Building Regulations TER metric) and then adding sufficient renewable energy or offsetting to zero-out the remaining carbon emissions, a cost estimate for this could be derived from national cost assessments for the Future Homes Standard in combination with national data on the cost of solar panel installations and the national valuation per tonne of carbon. Further recent evidence of the cost of meeting TER-based 'net zero regulated energy' policies is available from a 2024 study[c] commissioned by several local planning authorities in the West of England to support their 'fallback' policy approach of a TER-based policy in the event that their 'true net zero' EUI-based policies get rejected in light of the WMS2023.

INSET BOX: Summary of previous (2019-2021) net zero carbon buildings policy costs analysis work for Greater Cambridge emerging shared plan

The previous work for the emerging GCLP explored what costs would be incurred by developers in meeting the proposed net zero carbon buildings policy in the Greater Cambridge emerging shared local plan as of 2020.

That study modelled the cost for 4 building archetypes: semi-detached house, mid-terrace house, block of flats and school. Specifically, it quantified the additional capital cost associated with delivering zero-carbon buildings in each typology, compared to a baseline of the then-current Building Regulations which was Part L 2013 (i.e. with a gas boiler and slightly weaker fabric than today's Part L 2021). The criteria for defining a zero-carbon building were based on LETI principles (i.e space heating demand of 15-20kWh/m^2/yr, metered energy use of 35-65kWh/m^2/yr dependent on building type, and all-electric heating), as well as a renewable generation from photovoltaics equivalent to the predicted annual energy generation. This aligned with the proposed policy requirements, and the energy modelling study which had confirmed these were feasible.

The cost uplifts to meet the proposed net zero carbon buildings policy ranged from 3-13% in (2020) prices, the lowest uplift was for schools (3%) and highest uplift was for mid terrace homes (13%).

The findings from that costs analysis were then fed into the August 2021First Proposals Viability Study which found that that development remained viable even when including the uplift for this net zero carbon policy alongside other costs assumed to reflect the emerging local plan's policy requirements such as: affordable housing, accessible and adaptable dwellings (Building Regulations Part M4(2)), water efficiency standards, electric vehicle charging infrastructure, and sustainable drainage systems (SuDS).

It is important to note that, because national building regulations Part L has since undergone a moderate uplift to energy performance standards (Part L 2021 replacing Part L 2013), these cost uplift percentages would now be an overestimation of the uplift from today's newer cost baseline. In particular, the cost uplift for solar PV panel provision would be significantly lower now because Part L 2021 includes a certain degree of PV provision as standard.

The viability study work is now being updated to reflect today's prices and updated baseline building regulations.

Allowing growth only where the transport carbon emissions can be minimised

Example Central Lincolnshire Local Plan (adopted 2023)

Similarly to Greater Cambridge, in 2020-21, Central Lincolnshire local plan team was in a process of considering several broad spatial options for where new growth could occur.

Also similarly to Greater Cambridge, Central Lincolnshire local plan team commissioned the same consultant team[ci] to conduct comparative modelling of the carbon emissions of buildings and transport in different types of location: urban, suburban, public transport corridors, new towns, villages. This modelling used publicly available data on the local area's energy use and emissions of buildings and transport, combined with a locally-specific transport model. It also took into account the different locations' typical densities, home sizes and amount of new infrastructure that would be needed along with housing.

The potential sites being considered for growth were categorised into these different types of location. A range of options were tested, with homes spread in varying proportions across different types of location.

This revealed a significant but relatively moderate difference in carbon emissions in the plan period depending on where homes were built (whereas the equivalent modelling for Greater Cambridge had shown a very dramatic difference). This was partly because the spatial options in Central Lincolnshire were less starkly 'urban' or 'rural' but more blended, and partly because the Lincolnshire growth locations did not include areas with such an unusually high level of cycling and low car use as urban Cambridge has.

However, it did show that a large difference in carbon emissions would be made if the proposed 'true net zero carbon' policies were applied to the new buildings in those growth scenarios, compared to the 'business as usual' of building regulations Part L.

This informed the local planning team's choices of spatial distribution and helped to justify Central Lincolnshire's proposed net zero carbon buildings policies.

Quantifying and protecting the carbon sequestration value of green landscapes

Adopted precedent: Central Lincolnshire Local Plan Review

This plan was adopted in early 2023, as noted previously.

Aware of the region's presence o f peatland as well as other green infrastructure, the Central Lincolnshire planning team commissioned specialists[cii] to map the area's peatland and estimate the potential amount of carbon that is stored, removed, or emitted by those areas.

It found that while the area of peatland is small, its degraded condition means that it has a meaningful impact on overall emissions (potentially amounting to more climate impact per year than the operational carbon emissions of all the proposed new housing for which the plan must make room). As a result, the plan's Policy S17 requires assessment and mitigation or compensation of the carbon impacts of development on any carbon sinks including peat.

However, carbon sinks do not appear to have been a criterion in the sustainability appraisal for site allocations as only 2% of the land was identified peatland and thus not expected to be a common issue confronting many sites.

This approach could be relevant to other local plans with substantial amounts of high-carbon soils, woodland, grassland or other natural carbon sinks.

Proposed Policy S17 (carbon sinks) includes that:

> "Existing carbon sinks, such as peat soils, must be protected, and where opportunities exist they should be enhanced in order to continue to act as a carbon sink.
>
> Where development is proposed on land containing peat soils or other identified carbon sinks, including woodland, trees and scrub; open habitats and farmland; blanket bogs, raised bogs and fens; and rivers, lakes and wetland habitats*, the applicant must submit a proportionate evaluation of the impact of the proposal on either the peat soil's carbon content or any other form of identified carbon sink as relevant and in all cases an appropriate management plan must be submitted.
>
> *Please refer to Carbon Storage and Sequestration by Habitat 2021 (NERR094) (Natural England), which identifies 'reliable', 'long term' and 'important' carbon sinks and to the maps in 'Central Lincolnshire Local Plan: Climate Change Evidence Base Task L – Peat Soil Mapping'"

It also states that: "The demonstration of meaningful carbon sequestration through nature based solutions … will be a material consideration in the decision-making process. Material weight in favour of a proposal will be given where the net situation is demonstrated to be a significant gain in nature based carbon sequestration … Where a proposal will cause harm to an existing nature based carbon sequestration process, weight against such a proposal will be given … with the degree of weight dependent on the scale of net loss."

Appendix 1: Detail of UK Net Zero Carbon Buildings Standard (UKNZCBS), as per draft for beta testing, released late 2024

Note: Please see also separate summary report on the UKNZCBS.

UK Net Zero Buildings Standard mandatory targets (from UKNZCBS pilot version: Annex A targets and section 5.3.5.1 exemptions to renewable electricity targets)

Theme	Subtopic, metrics and caveats	New builds	Existing buildings & retrofit

Operational energy limits	**Energy Use Intensity***
	
	Metric: kWh energy use / m^2 floorspace / year*. (all energy use except EV charging and 'heavy process loads' already covered by the UK Emissions Trading Scheme e.g. industrial process emissions).
	
	*Except in data centres, where the metric is PUE (Power Usage Effectiveness: ratio of power entering the facility to power used by the facility's ICT).
	
	In all sectors and whether new build, retrofit 'one go' or retrofit 'step by step', these limits gradually tighten each year, from 2025 to 2050, referring to the year in which works are commenced on site.
	
	Must be measured using actual energy metered data covering 1 full year of full occupancy.
		Different limits are set for:
		• Commercial Residential: student, or care home
		• Culture/Entertainment: performance; 'collection'; archives
		• Data Centres: low utilisation; high utilisation
		• Healthcare (reflecting "NHS-NZ Standard")
		• Higher Education
		• Homes: single family, or flats
		• Hotels
		• Offices: general, call centres, trading floors
		• Retail: supermarket; high street; food & beverage (with/without catering); landlord areas; retail warehouse
		• Schools: early years; primary; secondary including SEN
		• Science/Technology
		• Sports/ Leisure: dry, wet, or fitness
		• Storage/Distribution: unconditioned; conditioned; cold store
			Two options:
			• **"Retrofit in one go":** Achieving the 'end point' EUI limit from the first instance of verification. Apply the limit for the year in which onsite works commence.
			• **"Retrofit step by step":** A retrofit plan over time that meets intermediate EUI limits, then the 'end point' EUI limit by 2040.
			  ○ The applicable 'end point' EUI limit is that of 2040.
			  ○ The applicable intermediate limits are those in which the intermediate steps are commenced.
			
			Different limits are set for the same categories as in 'new build', except that the 'healthcare' category is further divided into:
			• Healthcare: acute trust;
			• Healthcare: care trust;
			• Healthcare: community trust;
			• Healthcare: mental health & learning trust;
			• Healthcare: ambulance trust.

Operational energy limits (continued)	**Space heat demand** Metric: kWh heat demand / m^2 floorspace / year.	Different limits are set, for only a small subset of types at present: • Commercial Residential and Culture/Entertainment: ○ All 15kWh/m^2/year, regardless of commencement date. • Homes: Single family (20kWh/m^2/year regardless of date). • Homes: Flats (15kWh/m^2/year regardless of date).	None stated.
Up-front embodied carbon limits	**Embodied carbon intensity per m^2 floor.** Metric: $kgCO_2e/m^2$ floorspace (GIA). Scope & calculation methodology: RICS Whole Life Carbon Assessment, modules A1-A5. Excludes the embodied carbon renewable electricity generation equipment. Solar PV specifically has a separate limit of 750$kgCO_2e$/kWp system size. Limits slowly tighten each year, from 2025 to 2050. The applicable year's limit is the one in which works are 'commenced' on site. The commencement date is "the date of the most recent New Works or Retrofit Works to have taken place in that building."	Different limits are set for: • Commercial residential, • Culture / worship / entertainment, • Data centres, • Healthcare, • Higher education, • Homes, • Hotels, • Offices, • Retail, • Schools, • Science & technology, • Sport & leisure, • Storage/distribution.	Different limits are set for: • Commercial residential • Culture / worship / entertainment: Performance, or 'other' • Data centres, • Healthcare, • Higher education, • Homes: Single family homes, or flats • Hotels, • Office: Whole-building, or Shell & core • Retail, • Schools, • Science & technology, • Sports & leisure, • Storage & distribution. Must cover all works in the 5 years up to the date of assessment, including works that were commenced before the 5-year start date.

Theme	Subtopic, metrics and caveats	New and existing buildings
Global Warming Impact of Refrigerants	**Global warming impact per kg of refrigerants** used in the building's systems, expressed as equivalent amount of CO_2. Metric: $kgCO_2e$ / kg of refrigerant.	677$kgCO_2e$/kg refrigerant, for all sectors and project types (new/existing/retrofit); regardless of year of commencement of works. However: The guidance document notes that this figure may be updated in future iterations of the UKNZCBS.
Renewable *electricity* generation (minimum target)	**Amount of renewable energy generation per m^2 *footprint*** of the building.** Metric: kWh / m^2 footprint / year. **Not to be confused with m^2 of floorspace.	Scotland: • Single family homes and single storey storage/distribution: 60kWh / m^2 footprint / year • All other building types: 30kWh / m^2 footprint / year Middle & North England, Northern Ireland & Wales: • Single family homes and single storey storage/distribution: 65kWh / m^2 footprint / year All other building types: 40kWh / m^2 footprint / year South England (including Cambridge): • Single family homes and single storey storage/distribution: 75kWh / m^2 footprint / year • All other building types: 45kWh / m^2 footprint / year

Certain constraining circumstances can allow buildings to comply with UKNZCBS without fully meeting the above renewable electricity targets, including:

UKNZCBS triggers to waive renewable electricity targets	New builds	Existing buildings & retrofit
• *Planning or legal constraints, e.g. heritage (conservations or graded I/II listing; not local listings)*	✓ *Valid reason for reduced renewable electricity in new builds*	✓ *Valid reason for reduced renewable electricity in existing buildings*
• *Available space on site*	✓ *Valid reason for reduced renewable electricity in new builds* ✓ *Disapply the renewable electricity target entirely if space only permits <1kWp in single family homes or <4kWp in other buildings)*	✓ *Valid reason for reduced renewable electricity in existing buildings* ✓ *Disapply the renewable electricity target entirely if space only permits <1kWp in single family homes or <4kWp in other buildings)*
• *Building's annual operational energy use is less than what would be annually generated if the renewable electricity target were met*	✓ *Valid reason in new builds (to reduce renewable electricity target to only equal the building's annual energy use)*	✓ *Valid reason in existing buildings (to reduce renewable electricity target to only equal the building's annual energy use)*
• *Overshadowing of roof*	✓ *Valid reason for reduced renewable electricity in new builds*	✓ *Valid reason for reduced renewable electricity in existing buildings*
• *Grid connectivity constraints (e.g. grid capacity issues or limited access to grid)*	✓ *Valid reason for reduced renewable electricity in new builds*	✓ *Valid reason for reduced renewable electricity in existing buildings*
• *Lack of access (for installation & maintenance)*	× *Not a valid reason for noncompliance in new builds*	✓ *Valid reason for reduced renewable electricity in existing buildings*
• *Lack of structural strength (not being able to bear the weight of equipment, e.g. solar PV)*	× *Not a valid reason for noncompliance in new builds*	✓ *Valid reason for reduced renewable electricity in existing buildings*
• *Existing rooflights taking up roof space*	× *Not a valid reason for noncompliance in new builds*	✓ *Can be valid reason for reduced renewable electricity in existing buildings*

Appendix 2:
Detail of provisions in the Levelling Up & Regeneration Act whose impact is yet to be clarified by Government

Previously in this report it was noted that the Levelling Up and Regeneration Act 2023 (LURA) contains several provisions that could potentially change the scope of the local plan's ability to require improved energy and carbon performance in new development.

In that chapter we noted only that those LURA changes have the scope to impact how the local plan can address these issues, and that it is as yet uncertain as the implementation of those LURA provisions are dependent on secondary legislation, regulation and national policy statements. We here provide more detail on the various available consultations, policy statements and so on that may help foretell what the range of impacts may be.

New 'National Development Management Policies'

The Act empowers national Government to set 'national development management policies' (NDMP) with which local plan policies must not be inconsistent. The Act itself does not confirm what they will cover, but states that (Chapter 2, point 94):

- An NDMP "is a policy (however expressed) of the Secretary of State in relation to the development or use of land in England … which the Secretary of State by direction designates as a [NDMP]"
- Before making, modifying or revoking an NDMP, the Secretary of State must:
    - Consult with relevant parties on this unless it is a) an immaterial change to the NDM policy or b) it is 'necessary, or expedient …to act urgently'.
    - "Have regard to the need to mitigate, and adapt to, climate change".

The Act's own text does not mention carbon. Yet a 2024 consultation by the previous government suggested it might set an NDMP for carbon measurement and reduction.

The new Government's mid-2024 consultation[ciii] confirmed intent create NDMPs, but not whether these may cover carbon/energy. Most recently, the new Government's February 2025 response[civ] to the previous Government's 2023 consultation on LURA implementation notes that consultees asked whether local policies would be able to exceed or diverge from NDMPs, including in relation to net zero, and if so, what would constitute appropriate justification. The 2025 response gives no clarification on that question nor on whether the NDMPs will cover energy or carbon, only confirming that:

> "The government is fully committed to implementing a suite of national policies for decision making … enabling [local] plan-makers to focus on matters that are genuinely local, and supporting consistent local decisions. We are considering how best to take forward [NDMPs] and intend to consult on this in spring 2025" and that "The government will continue to consider how local policies for decision making might be implemented alongside national policies in a way that avoids duplication … As part of that exercise, we will seek to address practical challenges … including defining 'appropriate justification'".

Therefore, it is not yet clear if the NDMP regime will affect local plans' ability to set their own carbon and energy performance standards.

Changes to how Developer Contributions may be used

If the Secretary of State chooses to use certain powers gained through the LURA, then Section 106 & Community Infrastructure Levy (CIL) may be largely replaced by 'Infrastructure Levy' set by gross development value (GDV). The Act itself does not scrap Section 106 or CIL, but:

- The Act's Schedule 12 (Part 1) empowers the Secretary of State to "make regulations providing for … a charge to be known as Infrastructure Levy (IL)" and that these IL regulations "may include provision about how the following powers are to be used":
    - a. Community Infrastructure Levy
    - b. "section 70 of TCPA 1990 (planning permission),"
    - c. "section 106 of TCPA 1990 (planning obligations)"
    - d. "section 278 of the Highways Act 1980 (execution of works)."
    - Schedule 12 also establishes that the regulations must require the IL funds to be used for infrastructure, which includes "facilities … for the mitigation of … climate change".

It has been indicated that it may be used to scale-back S106's role to limited purposes[cv]. This could alter the ability to use Section 106 to raise carbon/energy offset funds (as it has been in several precedents). The new IL charging schedule would still be set locally and would require an infrastructure delivery strategy outlining how funds will be spent. The previous Government also indicated that the new IL may apply to permitted development as well as full plans[cvi].

A 2023 technical consultation[cvii] proposed to keep S106 for "matters that cannot be conditioned", infrastructure provision as payment-in-kind of the new Levy, or where GDV is unknown. It mentioned that "new buildings that go beyond national or local environmental policy could have the value of sustainable technologies [deducted from] Levy liabilities". No conclusion to that technical consultation is available as of mid-April 2025. However, the new national government confirmed, in a 2024 response[cviii] to a separate consultation, that it does not intend to bring in the new IL and will instead "focus on improving the existing system of developer contributions".

Thus until the Secretary of State confirms how they will "improve" the existing developer contributions system, or else U-turns to create the new IL Regulations, it is unknown whether S106 will still be usable in the long term for the purpose of raising carbon offsetting funds, or for any other purposes related to reducing developments' carbon impact. However, for now it can be assumed to remain so.

While the LURA empowers Government to replace S106 and CIL with a new Levy, the new government has stated that it will not implement the new IL and will instead "focus on improving the existing system of developer contributions".

It remains to be seen whether these 'improvements' will affect the scope for S106 as a carbon/energy offsetting tool.

A new 'Environmental Outcomes Report'

The new 'Environmental Outcomes Report' (EOR) will replace the existing system of Sustainability Appraisals, Strategic Environment Assessments and EU Environmental Impact Assessment. The outcome topics are yet to be finally confirmed, but may conceivably include carbon.

The Act (Part 6) establishes that "Regulations made by an appropriate authority … may specify outcomes relating to environmental protection in the United Kingdom or a relevant offshore area that are to be 'specified environmental outcomes'". In relation to this:

- 'Appropriate authority' is defined as the Secretary of State or devolved authority.
- "'Environmental protection' means … protection of the natural environment … from the effects of human activity".
- The definition of 'natural environment' names 'living organisms … their habitats … [unbuilt] land, air and water … and the natural systems, cycles and processes through which they interact". This could logically be interpreted to include the climate as a natural process or cycle.
- However: Neither climate nor carbon is specifically mentioned in Part 6.

Before the Act was passed, an early 2023 consultation on EORs[cix] gave a list of "potential matters that could be reflected as outcome[s]", none of which is carbon or energy. However, it also stated that "the government expects that the matters not in [that] list … will be picked through regime specific outcomes" and that the (erstwhile) government was "reviewing how EORs could be used [to] support efforts to reduce the carbon impact of development … [and] the role tools like environmental assessment should play in … crucial issues like … net zero". It stated that Outcomes "will build on the provisions of the Environment Act 2021 and create a direct link between the government's Environmental Improvement Plan and planning decisions". This might imply that the Outcomes will cover the Environment Acti foci (air quality, water, biodiversity and resource efficiency, as previously noted) or the Environmental Improvement Plan 2023 (which, as previously noted, includes a goal on climate referencing the Paris Agreement). No consultation response is available as of late April 2025.

An early 2024 (former) Government response to a review of environmental assessment regimes did not mention carbon/energy. The new Government's Summer 2024 planning consultation[cx] did not mention environmental outcomes. Its December 2024 response[cxi] to that consultation only mentions environmental outcomes in passing as an example of how national policy could in future "allow us to consider how best to address the environmental effects of development on communities, covering issues such as the health of local people" but does not clarify what topics will be covered.

More recently, the new Government has confirmed it does intend to move to this new system of Environmental Outcomes reports, as per a December 2024 policy paper[cxii] and a January 2025 news item[cxiii]. Neither mention carbon, and the January 2025 news item does not mention climate. The December paper mentions climate only in terms of climate resilience, not mitigation. The January item states that the Government would "publish a roadmap for the delivery of these new Environment Outcomes Reports in the coming months". This is apparently not yet available as of late April 2025.

Therefore, as yet there is no indication that the Act's 'Environmental Outcomes' approach will affect the local plan's scope to require carbon reduction standards for developments.

Supplementary Planning Documents to be replaced with "Supplementary Plans"

Until the LU&R Act, the production of supplementary documents with significant but less material weight than the formal development plan documents (local plan itself) was established in the Town and Country Planning (Local Planning) (England) Regulations 2012.

The LU&R Act does not specifically mention SPDs, but provides for the creation of a new type of document, 'Supplementary Plans', which the former Government's 2023 consultation[cxiv] had explained are intended to replace SPDs entirely. That consultation noted that:

- Supplementary Plans will have the same weight as the rest of the local plan and therefore will be subject to similar consultation and examination requirements.
- However, they "are not intended to be used routinely", instead the priorities should be addressed as far as possible within the main local plan document, while the Supplementary Plan route should only be used to "react and respond positively to … exceptional or unforeseen circumstances that need resolving between plans", giving the example of "an unexpected regeneration opportunity or introducing new site-specific policies including in relation to design, infrastructure or affordable housing".
- "[Existing] SPDs will remain in force until planning authorities adopt a new style local plan or minerals and waste plan". Therefore, any extant SPD will remain implementable so long as its content remains consistent with policies adopted through the new emerging local plan (assuming this new local plan is adopted within the 'old style' planning regime, for which the draft plan must be submitted to the Inspectorate by December 2026[cxv], a deadline recently pushed back from June 2025).

A response[cxvi] to the previously cited 2023 consultation was published by the new Government in February 2025. This reiterates that the new supplementary plans (via the LURA) "must be site specific or relate to two or more sites which an authority consider to be 'nearby' to each other". That 2025 response also confirms that existing SPDs "will remain in force until planning authorities adopt a new style local plan or minerals and waste plan" and that Government would set out further details in spring 2025 on the SPD transition. However, as of late April 2025 these details do not appear to have emerged and the online text of the Town & Country Planning Regulations 2012, cited above, still refers to SPDs (and contains a tag stating that it is up to date with all known legislative changes).

Additionally, the December 2024 NPPF also still retains existing NPPF references to SPDs in several places, despite having been published more than a year after the LU&R Act was passed. Prior to that confirmed NPPF publication, the summer 2024 NPPF consultation's text (in which the actual consultation questions were asked[cxvii]) does not contain the words 'SPD' or 'supplementary'.

It is therefore still uncertain whether SPDs will remain a useful tool to assist implementation of any local plan policies aimed at carbon reduction.

Any such SPD is likely to only hold much weight if it is consistent with the new local plan and if that local plan were submitted to the Inspectorate within the deadline for the existing planning regime (now December 2026). Greater Cambridge's January 2025 timeline for its new Local Plan indicates a submission in December 2026.

Appendix 3: Key extracts from Essex County Council Open Legal Advice from Estelle Dehon KC, 2025

Key extracts from open legal advice from Essex County Council (by Estelle Dehon KC)

Essex County Council (with Essex Planning Officers Association) has developed a suite[cxviii] of useful resources to support the various districts of Essex in bringing forward optimal, consistent, effective local plan policies for net zero carbon buildings, including:

- **Draft 'model policies'** that the respective Districts can copy into their local plans, covering:
    - Net zero energy (therefore net zero carbon) in operation, using absolute energy efficiency targets similar to those of Greater Cambridge (EUI and SHD + renewable energy), differentiated by several building types (bungalows, other homes, offices, schools and light industrial) – published[cxix] in July 2023
    - Embodied carbon reduction policies including how developers should account for these, and targets that should be hit, with suggested size thresholds over which each of these requirements would become applicable – published[cxx] in June 2024
- **Energy modelling to evidence the feasibility** of the EUI, SHD and renewable energy targets in all of the building types that the policy is proposed to apply for (in same 2023 document as the operational net zero model policies, cited above)
- **Embodied carbon modelling to evidence the feasibility** of the proposed embodied carbon policy targets (in same 2024 document as the embodied carbon model policies, cited above)
- **Cost modelling** to show the impacts of both the net zero energy policies and the embodied carbon policies, which can be fed into local plan evidence bases – published simultaneously within the respective 2023-2024 documents on feasibility and policies, as above
- **A specification guide** to help developers achieve the net zero energy policy standards, and to help planning officers determine what the minimum efficiency standards must be in cases where that net zero energy standard is not feasible in full (published[cxxi] July 2024)
- **A high-level Essex-wide viability study** looking at the estimated impact of these policies (albeit this was conducted in 2022 before the Essex detailed costs studies cited above had been produced, yet this 2022 viability study utilised cost uplift evidence from elsewhere that was not dissimilar from the eventual findings of the Essex detailed costs studies cited above).
- **Open legal advice** regarding the powers and duties by which these recommended policies can be justified.

This open legal advice was first published in April 2023, but was updated in February 2024 and May 2025 to account for changes in national policy and court cases, including the Written Ministerial Statement of December 2023 on energy efficiency (WMS2023) and the recent High Court case against that WMS (previously outlined in the current report).

As the WMS2023 has proven to be a point of major focus in recent examinations of similar plan policies that have occurred in 2024-2025, we here extract key points from the Essex open legal advice:

- **Paragraph 2.5:** "There is no conflict between the [Planning and Energy Act[10]] 2008 and section 19(1A) of the 2004 [Planning & Compulsory Purchase] Act[11] … and where there are two different, overlapping ways of achieving a local authority's objective, it is open to the authority to choose the power on which it relies. Accordingly, LPAs can choose the power under which they bring forward local energy efficiency policies."
- **Paragraph 2.6:** "The Written Ministerial Statement titled "Planning – Local Energy Efficiency Standards Update" ("the 2023 WMS"), made on 13 December 2023, does not change that position. In light of the Court of Appeal's decision in R (West Berkshire DC) v SSCLG [2016] … the 2023 WMS cannot lawfully seek to countermand or frustrate the effective operation of relevant statutory powers. The judgment in R (Rights Community Action) v SSLUHC [2025] … rejected the contention that the 2023 WMS emasculated or was incompatible with the powers in section 19 of the PCPA 2004. The 2023 WMS is simply one among many aspects of national policy to which LPAs and Examining Inspectors must have regard. It is a material consideration to which whatever weight is rationally justified can be given in the exercise of planning judgement."
- **Paragraph 2.7:** Section 1(5) [of the Planning & Energy Act] 2008 cannot lawfully be read as changing that usual position or giving additional legislative force to national policies in the context of energy efficiency, such as the 2023 WMS."
- **Paragraph 2.8:** "So long as there is a robust evidence base – a reasoned and robustly costed rationale – it is open to Examining Inspectors, in the exercise of their planning judgment, to determine that policies using metrics and methods of calculation other than those specified in the 2023 WMS are sound. Such policies would be consistent with national policy on climate change mitigation, adaptation and the net zero obligation. To the extent that there would be deviation from one part of the 2023 WMS, that can be justified on the evidence and does not prevent overall consistency of the proposed local plan with national policy (particularly as national policy can pull in different directions)."
- **Paragraph 2.9:** "[Although] the Area Action Plan for Salt Cross [was] found unsound in a report published on 1 March 2023, [that decision] was quashed by the High Court. There is therefore nothing in the Salt Cross decision which should dissuade an LPA from seeking to adopt net zero policies requiring higher new build fabric efficiency standards than Building Regulations which, for example, focus on achieving absolute energy use targets, banning the use of gas boilers in new buildings, and utilising predictive energy modelling to ensure that buildings meet Net Zero Carbon standards in operation, provided the LPA evidences such policies thoroughly and clearly indicates an awareness of the impact of the proposed policies on the viability of development."
- **Paragraph 145:** In the right circumstances, "metrics [or calculations] other than those specified in the 2023 WMS … can be justified and Inspectors can, in the exercise of their planning judgment, find [them] sound. In light of other national policy requirements, particularly [the] 2024 NPPF [and] the CCC's clear advice … there is a strong basis for departing from the metric-[of] the 2023 WMS [as occurred in] Tendring Colchester Borders Garden Community DPD".

[10] The Planning & Energy Act 2008 explicitly empowers local plans to set energy efficiency standards beyond Building Regulations, subject to national policy, as previously outlined. The WMS2023 is a national policy.

[11] The Planning & Compulsory Purchase Act 2004 obliges local plans to mitigate climate change, as previously outlined. This is crucial because this duty is impossible to effectively fulfil using the WMS2023's preferred metric.

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