Hinckley & Bosworth Borough Council Local Plan:

Ultra- Low Energy Evidence Base

Evidence base report

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Version 2

Written by: Jimin Oh (Analyst)
Checkedby: Ada Lee (Senior Consultant), Marina Goodyear (Senior Consultant)

Glossary of terms and acronyms

BREDEM	Buildings Research Establishment Domestic Energy Model. A methodology for estimate calculations of the energy use and fuel requirements of a home based on its characteristics. BREDEM is the basis for SAP (see elsewhere in this glossary) but BREDEM retains more flexibility by allowing the user to tailor some assumptions made in the calculations to better reflect the project.
Carbon	Short for 'carbon dioxide' but can also include several other gases that warm the climate. 'Carbon emissions' is when human activities emit these gases to the atmosphere.
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.
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'.
DER	Dwelling Emission Rate. A metric from Part L of building regulations estimating the proposed home's annual CO_2 emissions per square metre of floor, from regulated energy use in the home. Must not exceed TER (see TER definition in this glossary).
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 2026 versions of Part L of Building Regulations.
GHG	Greenhouse gas (CO_2 and several other gases: methane, nitrogen dioxide, and fluorinated refrigerant gases). Often collectively referred to as 'carbon'.
GIA	Gross Internal Area. The total internal floor area of a building measured to the internal face of the perimeter walls, including internal partitions and circulation spaces.
HBBC	Hinckley and Bosworth Borough Council
LETI	Low Energy Transformation Initiative. A coalition of built environment professionals working to establish and achieve the energy performance needed for net zero.
MVHR	Mechanical Ventilation with Heat Recovery
Offsetting	The practice of compensating for carbon emissions by funding activities that reduce or remove emissions elsewhere, so that the remaining emissions from a development or organisation are balanced by equivalent savings or removals.
Part L	Building regulations section that sets basic legal requirements regarding buildings' energy and CO_2.
Performance gap	The 'energy performance gap' is 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 calculate a building's energy use. It is used to design buildings that seek Passivhaus certification, but can be used 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).
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 BREDEM model, but with fixed assumptions and thus less flexibility.

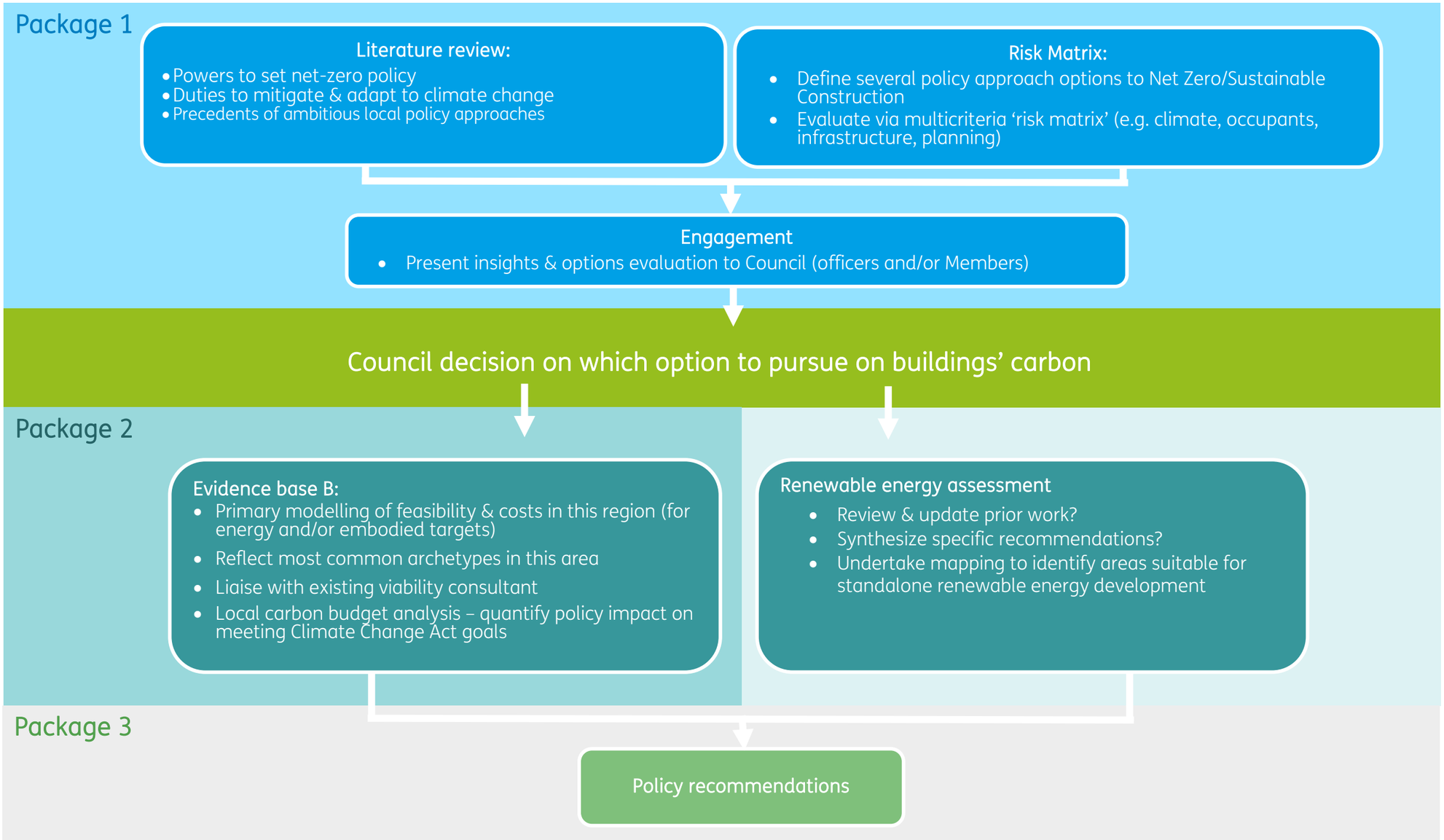
SBEM	Simplified Buildings Energy Model – the national calculation method for non-residential buildings' energy and carbon, used to satisfy building regulations Part L.
Sequestration	Removal and storage of carbon dioxide (or other GHGs) so that it cannot perform its harmful climate-changing role in the atmosphere. Currently only achieved by trees/plants and soil. May be achieved by technologies in future.
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 annual 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 conversion 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 performance; not affected by building services like heating system, lighting, ventilation[i].
TM54	A method to accurately calculate buildings' energy use. Devised by Chartered Institution of Building Services Engineers (CIBSE).
UKNZCBS	UK Net Zero Carbon Buildings Standard. A set of energy and embodied carbon performance targets devised by a consortium of the UK's main standard-setting bodies in the UK built environment sector. These targets become more stringent over time and are differentiated by different building types. Meeting the UKNZCBS does necessarily not make the building itself 'net zero carbon' - but rather its targets are designed to ensure that these buildings are *compatible with* the UK's transition to net zero carbon
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.
WMS (and WMS2023)	Written Ministerial Statement. Made by a government minister, forming an official statement of national policy on a specific topic. 'WMS2023' specifically refers to a WMS made on 13th December 2023 about local plan energy efficiency policies.

1. Introduction and executive summary

This document's key focus is to lay out the evidence that justifies the proposed policy on net zero carbon buildings in Hinckley and Bosworth Borough Council (HBBC)'s local plan.

This builds on the following prior Work Packages (WP) conducted with the Council:

- WP1: explored the range of powers, duties and precedents for promoting carbon reductions through a local plan
- WP2: assessed the impact of policy options on energy performance, cost uplift, and carbon budget through primary modelling



1.1. Structure of this document

In order to lay out the evidence that justifies the policy, this document covers the following topics:

- **The local plan's mandate to act to achieve carbon reductions** – contextualised by the extent to which the necessary carbon reductions are, or are not, being achieved in the absence of local plan policy to reduce buildings' carbon emissions
- **The local plan's powers to enforce the kind of performance that is necessary** in buildings – again derived from legislation, including how these powers may be affected by national policy statements
- **Policy options that have been considered** in light of national and local mandates and powers, taking into account the precedents of such policies in other local plans (which help to provide indication of the types of policy that may be considered sound)
- **The available evidence of the following for the proposed type of policy**, from primary modelling results outlined in WP2 and existing robust sources in the public domain:
    - Feasibility of meeting the proposed policy standard, and
    - Cost uplift of meeting the proposed standard.

A table of contents is provided overleaf.

A glossary has also been provided at the start of this document.

An appendix at the end of this document provides bibliography/references.

Contents

1.2. Overview of the proposed carbon reduction policies and rationale

The proposed policies are designed to bring forward the most vital elements of energy and carbon performance in new buildings that has been demonstrated to be necessary in order for those new developments to be compatible with the UK's carbon budgets. These policies will not only help to deliver HBBC's climate commitments (detailed in separate literature review and risk matrix documents) but also will ensure that new growth delivered in this local plan will play its necessary role in proactively supporting the UK's fulfilment of the Climate Change Act, as expected by the National Planning Policy Framework 2024 (NPPF) (please see our previous WP1 literature review report).

For this reason, the report proposes HBBC policies that use metrics and calculation methods that cover the full scope of buildings' operational carbon emissions and have been proven to be accurate predictors of buildings' actual performance – as distinguished from the methods and metrics used in Building Regulations compliance today, which only cover part of buildings' energy use and are highly inaccurate at predicting actual performance of the building. Another reason is that the calculation method used in Building Regulations today for homes (SAP) is soon to be replaced by a new national method, Home Energy Model (HEM), which is not yet finalised and thus not suitable to set robust targets in policy that will remain valid in the long term, nor does HEM yet have demonstrable evidence of accuracy as it is not yet in use. It is also not yet certain whether HEM will generate all the same metrics that SAP uses. Therefore, this local plan policy should use separate metrics and calculation methods that will remain relevant for the whole plan period, as well as being far more accurate than SAP.

As set out in the separate risk matrix document, three broad policy approach options were identified for evaluation in light of the Council's powers, duties and mandates, and the implications of national policies and legislations. These comprised:

Option 1: a fully WMS-compliant policy

Option 2: an approach that tests the boundaries of the WMS, and

Option 3: an approach that goes beyond the WMS where justified in order to deliver a stronger response to the Council's climate objectives.

Following consideration of these options, the Council has decided to pursue **Policy Option 3** as the preferred policy approach.

The standards proposed in the policy are demonstrably feasible as shown through existing energy modelling evidence cited in section 6.1 of the report.

[1] https://www.hinckley-bosworth.gov.uk/downloads/file/8654/hbbc_regulation_18_local_plan_2025

Similarly, the build cost uplifts of this standard are established in existing cost evidence cited in section 7.1.1 of this report.

It is acknowledged that the policy diverges from one national policy statement from 2023 (WMS2023). However, section 2.1.3 discusses the ways in which that WMS2023 pulls against other more well-established and more recent national policy, and explains why it is considered necessary to diverge from the stipulations of the 2023 statement in order to fulfil the legal duty to mitigate climate change and the NPPF 2024 instruction to do so in line with the Climate Change Act, which includes the national carbon budgets.

The Regulation 18 version of the Local Plan[1] states "To mitigate climate change and reduce the effects of new development on air quality and carbon emissions by promoting a sustainable pattern of development, the use of sustainable materials, nature-based solutions, low carbon technologies, sustainable transport options, renewable energy and energy efficiency measures and the waste hierarchy (preventing, reducing, reusing and recycling waste)" as part of its environmental objectives.

HBBC does not currently have draft Local Plan policy wording setting out specific requirements for building energy efficiency, on-site renewable energy generation, or carbon reduction. This WP3 report responds to that gap by providing practical guidance on appropriate requirements to support carbon reductions from new development, with a particular focus on improving operational energy efficiency. The intent is to help the Council translate its climate ambitions into clear, implementable planning policy that can be applied consistently through development management.

1.2.1 Progress at local level on the relevant parts of the mitigation pathway that need to occur nationwide

Rollout of renewable energy generation capacity in HBBC

Figure 1 shows Hinckley & Bosworth's renewable electricity capacity over time[ii]. The graph shows a rapid increase in Hinckley & Bosworth's installed renewable electricity capacity between 2014 and 2017. From 2017 to around 2021, capacity then plateaus, remaining broadly stable with only minor fluctuations. Since 2022, growth resumes but at a slower pace, increasing gradually, suggesting recent additions have been incremental rather than step-changes.

Figure 1: total renewable electricity generation from all sources in HBBC administrative area *between the years 2014-2024.*

This can be compared to the Committee on Climate Change's most recent analysis of the proportional growth in renewable energy generation capacity that will be needed in order for the UK to follow the most likely route to its legislated carbon goals:

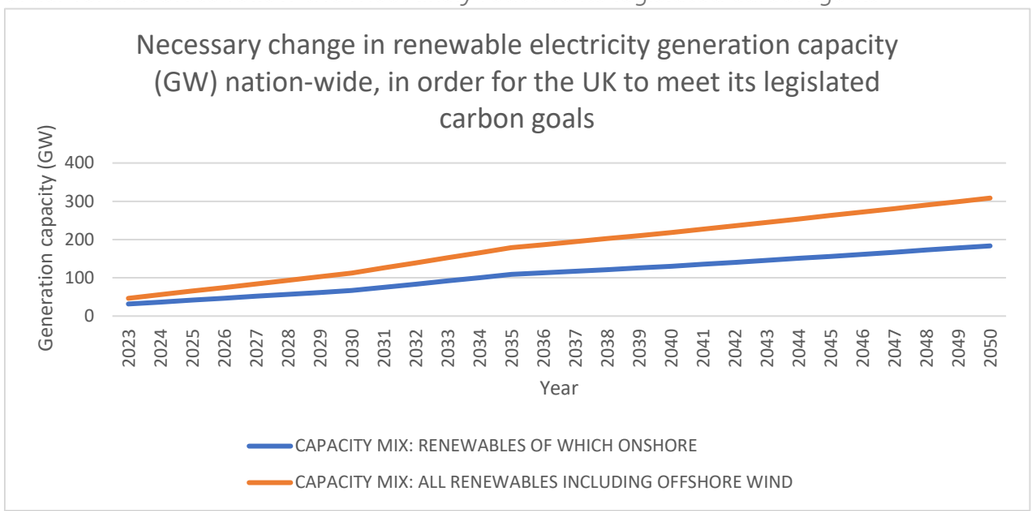


Figure 2: Necessary change in renewable electricity generation capacity for the UK to meet its Climate Change Act carbon budgets via the 'Balanced Pathway' to net zero. Adapted from CCC 7th Carbon Budget (2025) data download.

This report next considers individually two main renewable energy types most relevant to the local plan: solar photovoltaics (PV) and onshore wind.

In Figure 3. data from the Committee on Climate Change's seventh carbon budget was used to model the necessary absolute growth trajectory in MW for solar photovoltaic capacity between the years 2023-2050, in order to consider whether the growth rate in Hinckley & Bosworth for PV is on track with what is needed. The CCC's recommended trajectory during Hinckley & Bosworth's local plan period (2024-2045) represented an 8% annual growth:

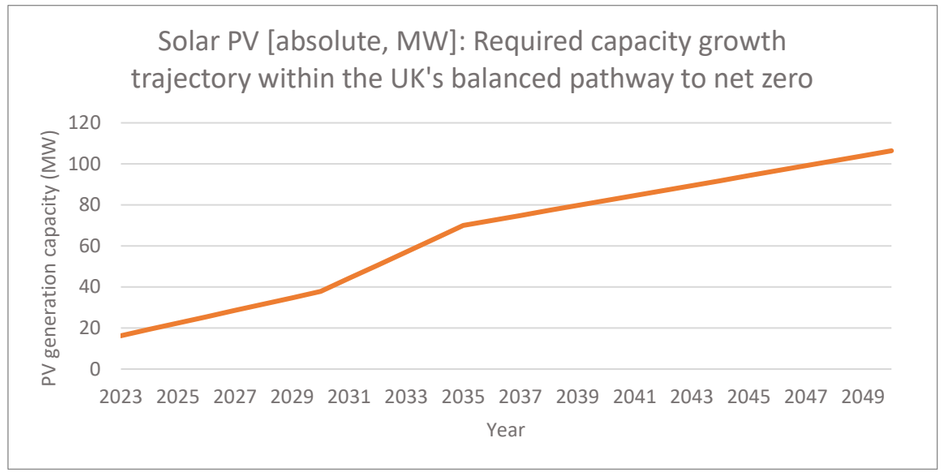


Figure 3: Required trajectory of PV capacity growth necessary within the Balanced Pathway to Net Zero and associated legislated carbon budgets, as derived from Committee on Climate Change 7th Carbon Budget analysis

Considering Hinckley & Bosworth's historical solar PV capacity trajectory, the year-on-year changes indicate a clear **two-phase pattern**: an early period of rapid expansion followed by a prolonged period of relative stability, with only modest growth returning in the most recent years.

Installed capacity grew very quickly in the early years, with exceptionally large year-on-year increases recorded in **2015 (122%)** and **2016 (96%)**, followed by a much smaller but still positive increase in **2017 (14%)**. From **2018 onwards**, growth rates drop sharply and remain low, with year-on-year changes of around **1%** in **2018** and **2019**, a slight decline in **2020 (-2%)**, and near-zero change in **2021 (0%)** and **2022 (2%)**. This indicates that most of the borough's PV capacity growth occurred during the initial ramp-up period, after which capacity largely plateaued.

More recently, the data suggest a renewed uptick in deployment, with growth increasing again in **2023 (4%)** and **2024 (8%)**. While these increases are modest compared to the mid-2010s surge, they indicate that PV capacity has resumed an upward trajectory after several years of minimal change. Overall, this pattern implies that long-term averages are likely to be skewed by the unusually high early growth years, and it is therefore

more informative to present the early ramp-up period and the subsequent plateau/moderate growth period separately when describing trends.

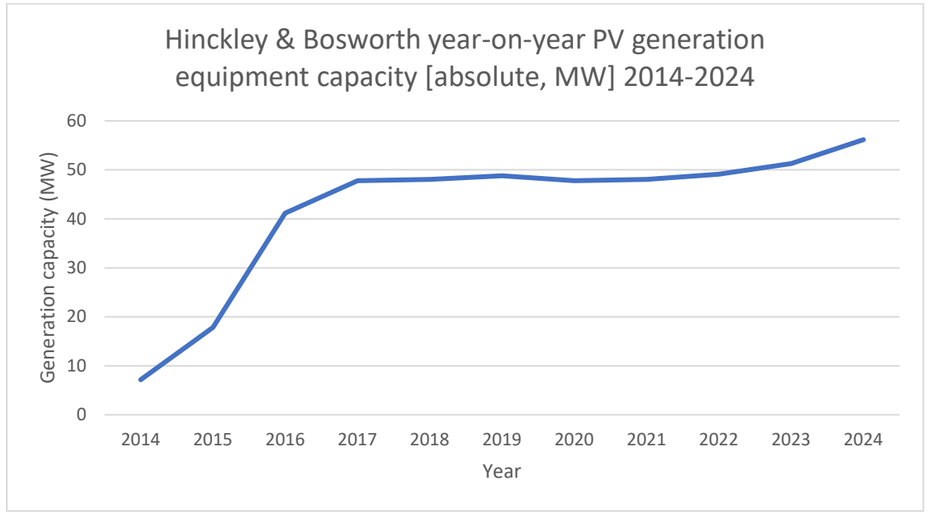


Figure 4: PV capacity change over time in Hinckley & Bosworth. Source: HM Government DESNZ datasets on renewable electricity[2]

These figures could be read that Hinckley & Bosworth's PV growth in recent years has not been in line with the national-level necessary growth as per CCC recommendations. However, the CCC's recommended renewable energy trajectory is UK-wide, therefore not every local area will be able to increase at precisely the same rate for all types of renewables – this will depend on the local area's characteristics and size. For example, most of the onshore wind growth would not be expected to happen in cities, but rather more rural areas, while offshore wind can only happen where there is a coastline.

Given that Hinckley & Bosworth comprises a mix of urban (Hinckley, Barwell, Earl Shilton and Burbage) and rural areas, solar PV remains one of the most suitable forms of renewable energy for the borough. As such, Hinckley & Bosworth's solar capacity would need to grow faster than the UK average if it is to achieve its fair share of renewable energy generation. In light of this, Hinckley & Bosworth will need to at least continue its recent years' growth in PV, and this will need to include a policy stance to promote this.

Hinckley & Bosworth's capacity over time for on-shore wind data appears to be very scattered; there was a large percentage increase for the year 2015 and a sudden decrease in 2016 before a flat line for the remaining years with minimal growth.

[2] https://www.gov.uk/government/statistics/regional-renewable-statistics

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Figure 5: Onshore wind electricity equipment capacity in Hinckley & Bosworth according to HM Government DESNZ datasets on renewable electricity[3]

The available historical data on Hinckley & Bosworth's onshore wind generation capacity are presented above (Figure 5). However, this data does not look particularly realistic as it would seem to indicate that a significant windfarm came online for one year only (2015) and then was immediately shut down, which is only about 4-5% of a typical windfarm lifespan. This irregularity in this historical data indicates that this is unlikely to represent a reasonable way to understand Hinckley & Bosworth's recent years' onshore wind capacity trajectory, nor to project Hinckley & Bosworth's future overall growth and capacity for onshore wind based on historical data. However, as noted in WP1 literature review document, the December 2024 version of the NPPF removes previous barriers to onshore wind growth. Thus, there is potential to see growth in on-shore wind in coming years. However, this is not usually a suitable type of onsite renewable energy at most buildings, and thus is unlikely to play a role in the net zero carbon buildings policy which is the main focus of this evidence base.

1.2.2 Conclusion on the need for local plan policies to mitigate climate change faster or further than existing or imminent national building regulations

- While Hinckley & Bosworth's growth rate for PV has been positive in recent years, the recommended Hinckley & Bosworth policy on net zero carbon buildings will help continue this rate of growth while avoiding conflict in different demands for land use in Hinckley & Bosworth's available land area. This is because the recommended policy would require all new builds to come with on-site renewable energy to at least match annual energy demand for the new building. The recommended policy would ensure the ideal amount of PV will be delivered on new buildings' rooftops, and therefore, Hinckley & Bosworth will not use up as much of its valuable land for PV or wind to keep up with the required renewable energy trajectory. The policy also minimises the energy demands of the new buildings, meaning that the need for new renewable energy generation capacity to service them is kept to a minimum.
- Based on the national progress summarised above regarding what needs to happen in order to meet the UK's carbon budgets and net zero by 2050, it is clear that certain key parts of the transition are not being driven fast enough by the national policies (especially on buildings' energy efficiency, given the inadequacies of existing and incoming building regulations) and market

[3] https://www.gov.uk/government/statistics/regional-renewable-statistics

incentives that are in place – and some (like embodied carbon) are not being addressed at all

- Therefore, if the local plan is to 'mitigate climate change in line with the Climate Change Act' by 'proactively' acting to achieve 'radical reductions' and 'support the transition to net zero' as per the latest national policy (NPPF 2024), it is clear that local plan policies would be justified in seeking to go further or faster than what current and imminent future national building regulations are delivering, so long as this can be shown to be:
    - Feasible and viable
    - Not in contradiction of the constraints on powers granted to the local plan
    - Compatible with other duties laid on the local plan, or else that those other duties are less pressing than the climate mitigation duty.

2. What are the local plan's powers to mitigate climate change

2.1. Hinckley & Bosworth's current carbon emissions and the local plan's ability to influence them

2.1.1 What are the current sources of emissions in the Council?

The current main sources of greenhouse gas emissions (and removals) in the Hinckley and Bosworth area[iii] are shown below. Transport is the largest source of emissions, followed by domestic. Industry emissions also represent a significant share.

The small amount of carbon removal by forests & grassland is essentially insignificant in proportion to the emissions.

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Figure 6. Hinckley & Bosworth's greenhouse gas emissions split by sector in 2023

It is acknowledged that the Council has committed to making the Council's own activities net zero carbon by 2050, as part of its 2019 climate emergency declaration[iv].

2.1.2 What are the local plan's best chances of enabling significant emissions reductions?

The local plan guides future development and is implemented through the Development Management function of planning. It can only exert influence where permission is required, but within that scope it can give weight to certain measures and expectations when proposals come forward, including proposals made by parties other than the owner or occupier. Where no permission is needed and no proposal is brought forward, the Local Plan has limited ability to proactively instigate changes to existing buildings or land use.

The sources of carbon emissions (and removals) that a local plan can influence are:

- New buildings – energy efficiency, renewable generation onsite, and embodied carbon – strongest area of influence.
- Transport – enabling the right type and location of development to reduce new and existing communities' car dependence, and bringing forward sustainable transport infrastructure
- Existing buildings – encouraging carbon-reducing renovations where permission is needed, but cannot instigate change where none is proposed, thus low influence
- Renewable energy – encouraging new large-scale renewable energy generation and distribution
- Natural environment – protecting or expanding landscape features that capture or store carbon
- Using the consenting process to raise funds for the above, where lacking.

As previously noted, the Council's Climate Change & Biodiversity Strategy 2024–2028[v] sets the framework for delivering the Council's climate (2019) and biodiversity (2023) commitments, underpinned by a regularly reviewed action plan that guides delivery across six themes: Biodiversity, Buildings & Land, Community, Economy, Travel, and Waste & Pollution. The strategy provides a two-tier framework (council operations and the wider borough) to deliver **carbon-neutral operations by 2030 and borough-wide net zero by 2050.** It continues and updates the 2014–2017 Strategy & Action Plan, which focused on awareness-raising, emissions reduction and resilience. This report here focus on planning powers towards net zero carbon in the *Buildings & Land* theme as these are the foci for our appointment.

The next subsection reviews the impact of the Written Ministerial Statement 2023 that guide how those powers are expected to be used. Further details on links to national policies can be found in the separate literature review document issued as part of WP1.

2.1.3 The Written Ministerial Statement of 13th December 2023 and how it affects previously established scope for local plan policy on carbon & energy

On 13th December 2023, the previous Government released a **Written Ministerial Statement (WMS2023)** by the then-housing minister and under-secretary for levelling up, housing and communities). Its topic is "Planning - Local Energy Efficiency Standards[4]".

This WMS purports to curb the perceived issue of local plans setting energy efficiency standards that go beyond Building Regulations. However, subsequent legal correspondence[5] confirms that this WMS was made without an evidence base. Although the WMS constitutes a change in national policy, it was also published without a prior Environmental Principles Assessment or Public Sector Equality Duty Assessment, both of which are mandatory for new national policy. These assessments were completed

[4] https://questions-statements.parliament.uk/written-statements/detail/2023-12-13/hcws123
[5] This pre-action legal correspondence was shared with the authors of the current report by the recipient. It is not under any legal restrictions on its sharing, but has not yet been published by any entity as far as the current report's authors are aware. The authors are working with relevant parties to get that correspondence published along with a legal interpretation of it.

retrospectively, only after pre-action legal letters were sent to the Secretary of State on behalf of a coalition of local authorities querying the WMS' lawfulness.

Content of the 13th December Written Ministerial Statement

The WMS2023 seeks to place new limitations on the exercise of existing powers held by local planning authorities to require improvements in the **energy efficiency** of proposed new buildings in their area. The WMS does not remove the ability to set improved local standards, but purports to limit them in these ways:

- **Energy efficiency policies should be expressed as percentage reductions on the Building Regulations Part L TER (Target Emissions Rate)**, using a "specified version of SAP".
- Policies that exceed building regulations should be "**applied flexibly … where the applicant can demonstrate that meeting the higher standards is not technically feasible**, in relation to … local energy infrastructure … and access to … supply chains."

The above seeks to constrain how a local plan uses its power derived from the Planning & Energy Act to require energy efficiency standards beyond those of building regulations.

This WMS came shortly after several local plans in 2023 had used other more effective metrics to deliver buildings suitable for the UK's carbon goals, such as absolute limits on energy use intensity and space heat demand (Cornwall, Bath & North-East Somerset, and Central Lincolnshire) rather than the WMS' stipulated metric of TER % reduction.

This WMS also emphasises that any such policies **must 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 [NPPF]". This is not new – it is expected that any new plan policy would be accompanied by such justification, and there is extensive evidence in the public domain of the costs and feasibility of meeting enhanced energy standards (see 6.2 and 7.1.1 in current report).

Scope of the WMS2023

The WMS2023's focus is **strictly energy efficiency**. Therefore, it is **does not constrain any local plan policy standards for the separate issues of renewable energy, carbon emissions, or embodied carbon**, all of which are separate from energy efficiency although energy efficiency can impact on carbon emissions.

Although the WMS seems to use the terms "homes" and "buildings" interchangeably, its accompanying documentation (Environmental Principles Assessment and Public Sector Equalities Assessment) makes clear that **its focus is on homes specifically**. That limited focus is further evidenced by the fact that the WMS stipulates the use of SAP, which is a calculation methodology only available for residential buildings.

What is the relevance of the WMS in the current HBBC plan-making process?

Written Ministerial Statements are one of the 'statements of national policy' that local plan-making must take into account, according to the NPPF. The WMS of December 2023 includes a sentence self-confirming its own status as a relevant statement of national planning policy.

Alongside the 'four tests of soundness', the NPPF also states that:

- (Paragraph 5-6) "National policy statements form part of the overall framework of national planning policy, and may be a material consideration in preparing plans" and "Other statements of government policy may be material when preparing plans … such as relevant Written Ministerial Statements".
- Requirements for the sustainability of buildings are expected to "reflect the Government's policy for national technical standards" (Paragraph 164b).

Therefore, this WMS is a 'material consideration', i.e. one of the relevant considerations that the plan must *take into account* in order to be found sound. This is notwithstanding the fact that a WMS can be (and was in this case) made unilaterally without consultation. It is unclear whether it also counts as a "policy for national technical standards" as per NPPF 164b

However, a WMS is not an inviolable requirement. It can be 'sound' to deviate from a WMS if other identified material considerations hold more weight than the WMS (including legislation or more recent statements of national policy[6]) and/or if there are local circumstances that justify deviating from that WMS. This is explored next.

What is the status of a WMS versus legislation?

Legislation, and the powers granted or duties imposed by it (such as the duty to mitigate climate change and the power to set higher energy standards), cannot legally be undone by national policy such as the WMS2023.

Relevant open legal advice[vi] notes that it has been established in case law that a WMS "cannot lawfully countermand or frustrate the effective operation of any … relevant statutory power" (such as the duty to mitigate climate change and the power to require higher local standards) and that "any WMS must lawfully be applied subject to relevant statutory powers, and … justifiable local exceptions, rather than in a blanket fashion".

What is the status of a WMS versus other national policy?

[6] For example, some Inspectors had found local plans unsound where those local plans went against the aforementioned WMS2015 (whose topic was similar to the WMS2023, but at least one such rejection was overturned in the High Court in 2024 on the basis of having unlawfully interpreted the that WMS2015, primarily because the WMS2015 had been overtaken by other pieces of policy, regulation and legislation (https://www.landmarkchambers.co.uk/news-and-cases/inspectors-recommendations-removing-net-zero-policies-from-development-plan-document-found-to-be-unlawful)

The NPPF is a well-established piece of national policy that typically undergoes consultation each time it is updated. By contrast, the WMS2023 was ad-hoc and did not undergo consultation. While the NPPF forms the 'national planning policies for England' with which any local energy efficiency or renewable energy policies must be consistent (Planning & Energy Act), there is another national policy statement (2022[vii]) noting that the NPPF "does not set out an exhaustive list of the steps local authorities might take to meet the challenge of climate change and they can go beyond this".

Where a WMS contradicts or inhibits the NPPF, it may be a matter of judgement on which holds more weight. However, the December 2024 NPPF is the more recent expression of national planning policy and contains a renewed focus on climate mitigation, directly citing the 2050 net zero goal (while continuing to emphasise the imperative to mitigate climate change in line with the Climate Change Act, which as this report has previously explained includes the carbon budgets as well as the net zero goal).

What effect would the WMS2023's stipulations have on the local plan's fulfilment of legal duties and NPPF priorities on climate mitigation?

If interpreted literally and rigidly, the **WMS' stipulations would make it difficult or impossible fulfil the local plan's legal duty to mitigate climate change** (established in the Planning & Compulsory Act 2004, section 19) especially **to the extent that would be "in line with the objectives and provisions of the Climate Change Act 2008"** as per the NPPF instruction, let alone "radical reductions in greenhouse gas emissions … nor "a proactive approach" (NPPF 2024 paragraphs 161-162 and footnote 61).

This has been proven in separate HBBC 2025 local plan supporting report "Evidence base: Carbon budget assessment". In that, it was shown how a policy following the WMS2023's stipulations and general gist of following future national regulation (the FHS) would result in a significant exceedance of the national legislated carbon budgets share that can be reasonably assumed to be available for the new build housing sector.

Government has not indicated that there was any assessment of how the WMS would affect the ability to fulfil those mandates, nor advised which should take priority where they are demonstrated to be in conflict.

The main way the WMS inhibits or prevents the fulfilment of the climate mitigation duty (and other parts of the NPPF tests of soundness) is that:

- **Its stipulated metric and calculation method (TER and SAP) are not suitable to ensure a building has the energy efficiency performance needed for the UK's legally binding carbon goals** as previously described in the separate WP2 "Evidence base: Carbon budget assessment" report. That unsuitability is why several recently adopted precedent local plans elsewhere (see section 4.1) had used alternative metrics that are much more effective for delivering energy efficiency[7] and for defining whether a building is 'net zero'.
- **Its stipulated metric is not fit for the stated purpose of energy efficiency:** The WMS2023 stipulates that any local policy energy efficiency improvement standards should be expressed in terms of TER (Target Emissions Rate), but TER is in fact a *carbon* metric not an *energy efficiency metric*. TER therefore logically is not a "standard for the purpose of energy efficiency" as per the Planning & Energy Act (2008) definitions, thus this WMS2023 may be argued to not be a national policy that would validly constrain the powers granted by that Act to the local plan to set energy efficiency standards.
- **Its stipulated calculation method is imminently outdated:** The WMS stipulates that any TER % target be expressed using "a specified version of SAP". But this would make the local policy obsolete in the next ~2 years, because SAP is being nationally replaced by a new calculation method named "HEM" when the Future Homes Standard (FHS) enters force on 24 March 2027. . The Future Homes Standard is the new Building Regulations Part L, which was due to have been introduced in 2025 but was only recently published on 24 March 2026. SAP is also updated every few years and thus any policy based on a "specified version" would be obsolete far before the end of the plan period.

Therefore, in addition to inhibiting the local plan's legal duty to mitigate climate change, local policy consistency with the WMS2023's stipulated metric and calculation method would fail NPPF tests of soundness in that it would:

- **make local policy ineffective across most of the plan period**, contrary to the test of soundness c) (that policy should be effective/deliverable in plan period)
- **inhibit local policy consistency with the more clearly stated NPPF policies** that the local plan should proactively achieve "radical" carbon emissions reductions "in line with the objectives … of the Climate Change Act", contrary to NPPF test of soundness d) (consistency with the suite of policies in the NPPF).

Further points on scope and reach of the WMS2023 and alternatives to its stipulated metrics

As previously noted, there is broad consensus in the low carbon building industry that the metrics needed for effective energy-efficient low carbon buildings standards are not TER or other metrics from Building Regulations Part L, but rather energy use intensity (EUI) and space heat demand (SHD). This consensus is evident in several forms: Beyond the previously cited evidence from the Climate Change Committee regarding the necessity of SHD limits in new homes, there is endorsement of EUI and SHD metrics by all relevant standard-setting bodies in the built environment, through their collaborative

[7] The more effective metrics for energy efficiency used in recent precedents local plans are Energy Use Intensity (EUI) and Space Heat Demand (SHD), which are reflected in Hinckley & Bosworth's proposed Policy Option 3.

development and endorsement of the UK Net Zero Carbon Buildings Standard (UKNZBCS[8]). That UKNZCBS was developed collaboratively by a consortium of leading professional bodies including[9] UKGBC, RIBA, RICS, IStructE, CIBSE, BRE, BBP, LETI, and the Carbon Trust. The UKNZCBs sets progressively tightening energy efficiency targets for SHD and EUI in coming years that vary by building type. A key reason for the endorsement of EUI limits is that the EUI metric covers total energy use (whereas Building Regulations metrics only cover regulated energy uses, as previously noted). While the UKNZCBS can only be verified via in-use energy meter data, building designers would need to use highly accurate energy use prediction methods in order to meet the standard. Building Regulations SAP method would not be suitable, due to its inaccuracy (underestimation) of energy use.

SHD targets ensures that a building has good ability to hold onto its internal heat (by having good insulation, glazing and airtightness as well as an inherently thermally efficient form). Meanwhile, EUI targets can ensure that the building also has a highly efficient heating system type. Heat pumps deliver 3-to-5 units of heat for each unit of electricity they consume. By contrast, direct electric heaters deliver 1 unit, while an A-rated boiler only delivers approximately 0.9 units of heat per unit of gas. This means that a low EUI target can effectively ensure that new homes use heat pumps (while allowing for future emergence of any other technology as efficient as heat pumps).

This rollout of heat pumps is a vital, urgent and currently off-track component of the UK achieving its national legislated carbon goals. While the incoming Future Homes Standard is expected to have a heat pump as its notional heating system type, FHS homes could instead comply with the FHS TER target by using direct electric heating and masking its inefficiency with an excessive amount of solar panels. This would not only fail to protect the occupant from excessive energy bills (as their energy use patterns may not coincide with the time when the solar panels are producing the most energy) but also would risk placing excessive strain on the grid to take the solar energy exports when the occupant is not using that energy.

In light of this, the WMS2023 is self-contradictory in that it states that any local enhanced energy efficiency standard should be “applied flexibly [if] the applicant demonstrate[s] that [it] is not technically feasible, in relation to … energy infrastructure (for example adequate … grid connections)”. In fact, any energy efficiency policy using the WMS2023’s stipulated metric of TER (and SAP calculation) would make the impact on energy infrastructure worse compared to a more effective policy using EUI and SHD metric limits calculated via an accurate method (e.g. PHPP[10] or CIBSE TM54[11]).

The WMS2023 does not actually *prohibit* the use of such alternative metrics and methods *alongside* TER and SAP. However, these metrics are in fact so different from each other as to not be directly comparable because:

- TER is affected by many factors other than energy efficiency (such as on-site renewable energy, and electricity grid carbon intensity which changes over time).
- The Part L TER is calculated using a methodology named SAP, drastically underestimates homes’ energy usage and carbon emissions, partly because SAP ignores all plug-in devices and partly because SAP is simply poor at predicting actual thermal or total energy performance of the building. At the time of producing this report, there is no known existing method to consistently translate an SHD or EUI target into a % TER reduction or vice versa.

It is also relevant to note that several plans have passed examination despite using metrics other than those stipulated by the WMS2023. Those examined post-WMS2023:

- Warwick DPD NZC2(A) requires an improvement on the Part L TFEE (Target Fabric Energy Efficiency) metric. TFEE is an energy efficiency metric but comes from WMS’ stipulated calculation method (SAP), thus reflects SAP’s inaccuracies.
- West Berkshire Local Plan Review (examined 2024[12]): Similar to Warwick DPD.
- Tendring Colchester Borders Garden Community DPD (examined 2024[13]): Energy efficiency metrics in terms of absolute limits on EUI and SHD. This was the first plan to successfully pass examination with these metrics since the WMS2023.
- Uttlesford Local Plan (examined 2025): Identical or similar to Tendring/Colchester DPD above. Final report not yet available but Inspector’s post-hearing note[14] confirms no need for modifications to the energy policies.
- Winchester City Council Local Plan (submitted 2024; examination commenced April 2025): Proposed Policy CN3 requires new-build homes to be all-electric (no on-site fossil fuels), achieve SHD 15 kWh/m²/yr and EUI <35 kWh/m²/yr, and provide on-site renewables to meet 100% of energy demand, evidenced using

[8] https://www.nzcbuildings.co.uk/pilotversion
[9] Acronyms: UK Green Building Council, Royal Institute of British Architects, Royal Institute of Chartered Surveyors, Institute of Structural & Civil Engineers, Chartered Institute of Buildings Services Engineers, Buildings Research Establishment, Better Buildings Partnership.
[10] Passivhaus Planning Package – a publicly available spreadsheet-based tool for predicting the energy use of buildings, that has a proven track record of high accuracy in reflecting actual performance of the building in terms of thermal performance and overall energy use. This tool is used in the design and delivery of Passivhaus-certified buildings, but can also be used outside that certification process.
[11] CIBSE Technical Memorandum 54. A method for predicting non-residential buildings’ energy use. This method is endorsed by government via Building Regulations Part L 2021 in non-residential buildings.
[12] https://www.westberks.gov.uk/media/63647/Inspector-s-Report-inc-Appendix/pdf/Inspectors_Report_inc_Appendix.pdf?m=1749637079183
[13] https://ehq-production-europe.s3.eu-west-1.amazonaws.com/1a1c1c19de571065076403146b9eda5dca522b22/original/1743697300/a9aa0f9394a76eab063566d89b66f70d_TCBGC%20DPD%20-%20Inspectors%20Report%20-%20FINAL.pdf?X-Amz-Algorithm=AWS4-HMAC-SHA256&X-Amz-Credential=AKIA4KKNQAKIJHZMYNPA%2F20250806%2Feu-west-1%2Fs3%2Faws4_request&X-Amz-Date=20250806T185306Z&X-Amz-Expires=300&X-Amz-SignedHeaders=host&X-Amz-Signature=b1b191e4287352bbde257564ff2324801ac359cf07a028153340991920bac69
[14] https://www.localplanservices.co.uk/_files/ugd/017f5b_bf62550d1d54440d95d5f919f3641fef.pdf

PHPP or CIBSE TM54. The inspector's post-hearings correspondence[15] indicates the approach is sound, subject to Main Modifications.

Finally: The WMS' purported purpose is to avoid a "proliferation of multiple local standards" on the assumption that these will add costs and slow housing delivery. However, in response[viii] to pre-action legal correspondence[ix] in 2024, Government admitted that it had no evidence of either this proliferation or costs nor any other evidence to justify the stipulation that energy efficiency policies must use TER or SAP.

Recent legal challenges to the WMS2023 and implication of their outcomes

This report notes that the legal challenge to the WMS was on the basis that it is unevidenced, purports to inhibit the use of the powers granted to the local planning authority by legislation, and was not subject to the environmental assessment required for new policy according to the Environment Act. This case was first heard at the High Court on 18 June 2024[x] and then at the Court of Appeal in June 2025. Since the High Court judgement rejected all three grounds, the case was taken to appeal at the Court of Appeal in June 2025, which was ultimately dismissed.

The Court of Appeal's decision (2025) did not overturn the High Court's decision. However, the judgements confirm that the WMS2023 is not unlawful (in that it is not incompatible with the Planning & Energy Act and that it was acceptable that the required environmental assessment had been conducted retrospectively). The judgements do not increase the material weight of the WMS2023 versus other national policy. The latest judgement[xi] (Court of Appeal) clarifies that this legal decision does not pass any judgement on the relative merit of the WMS' stipulated metrics versus others: "judicial review is not a proper forum for resolving the dispute as to whether one metric is preferable to another" and even that the judge was "left with the impression that the draftsman [of the WMS2023] did not think through the tension between the intention to use national measures to [restrict] how far a [local plan] may set standards exceeding building regulations and the well-established legal principle that a LPA can include in its DPD a local policy which conflicts with national policy [where] justified".

Neither of the judgements substantively engages with whether the WMS2023 inhibits local plans' ability to fulfil their legal duty to mitigate climate change in practice. Concerningly, the Court of Appeal judgement paragraph 37, when considering how the WMS2023 was made, makes a potentially misleading statement that "homes built to the FHS would be compatible with the UK's 2050 Net Zero Target for carbon emissions in the Climate Change Act 2008". This would indicate a lack of understanding that such homes would in fact not be compatible with the Act's legislated carbon budgets (as previously noted and as detailed in the separate HBBC evidence report on local carbon budgets); the lack of commentary on this may indicate that such evidence was not put before the courts. However, that wording could simply be the judge's explanation of the Government's purported rationale when making and assessing the WMS2023, rather than a statement of actual fact; this reading is supported by paragraph 95 which states that "The Government's view [when conducting its environmental assessment of the WMS2023] is that the forthcoming FHS will set national standards for residential development in line with the Climate Change Act 2008 … [and] It is not a matter for the court in an application for judicial review to say whether those conclusions are right or wrong". That paragraph (95) is in the section of the judgement relating to whether Government had met its legal duty to environmentally assess such policies, not the section on whether the WMS2023 interferes with the local plan's legal powers and duties.

Conclusion on the justification/necessity of diverging from the WMS2023's stipulated metric

Legislation holds far more weight than a WMS, and a WMS does not overrule the NPPF. Thus, it is sound to diverge from the WMS because the above cited carbon budget assessment evidence has demonstrated that using a typical WMS2023-style policy would prevent the local authority from fulfilling its legal obligation to 'contribute to the mitigation of climate change' set by the Planning & Compulsory Purchase Act, on the basis that the only definition of the required *extent* of that mitigation is expressed in the NPPF expectation for carbon reduction *in line with the Climate Change Act*.

There is clear evidence of the difference that would occur as a result of following the WMS stipulations (as opposed to using the more accurate energy metrics proposed by EUI-based policy)– that is both of the following:

- Using a WMS-style policy, aligned to the Future Homes Standard, would move 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 Committee on Climate Change to comply with the UK's legislated carbon budgets (set under the aegis of the Climate Change Act); see separate WP3 'Carbon budget assessment' report cited above
- Failing to use a 'space heat demand' metric (instead using the WMS2023's stipulated TER % metric) would fail to ensure the level of energy efficiency that the Climate Change Committee has shown to be necessary as part of the UK's achievement of its legislated carbon budgets, (see section 4.3).

As a result, following the WMS2023's stipulation to express energy efficiency policy using the ineffective metric of TER, calculated using the inaccurate method SAP, would result in a failure to sufficiently meet the plan's aforementioned legislated duty to

[15] https://www.localplan.winchester.gov.uk/assets/inline/2670/ED38a-Inspector-Note-16-Post-hearing-action-points.pdf#page=9

mitigate climate change (Planning & Compulsory Purchase Act) and inconsistency with NPPF policy that this should be done 'in line with … the Climate Change Act'.

The WMS2023 applies these special restrictive stipulations to policies that go beyond 'existing or planned' building regulations. The WMS2023 therefore implies acceptance of policies that align to the Future Homes Standard (FHS), i.e. the building regulations update due to be published later in 2025. However, as previously noted, FHS will still not deliver the levels of energy efficiency that are a necessary component of the achievement of national carbon budgets as previously explained. Extensive primary evidence of the energy and carbon performance of homes built to the FHS, versus standards equivalent to proposed Policy Option 3 (ambitious Net Zero EUI policy), is available in WP2. Those also evidence the feasibility of meeting energy performance standards, and the associated build cost uplift that would be incurred by developers. See sections 6 and 8 of the current report in which this existing feasibility and cost evidence is summarised.

Energy efficiency

There are ways that energy efficiency targets could be designed to comply with the WMS (albeit none of these would be sure to delivery energy efficiency performance in line with what is necessary for the achievement of the UK's carbon budgets, as previously noted, due to the inaccuracy of the SAP calculation method).

One option is to follow one of the examples set by certain precedent local plans – such as the London Plan 2021 – that have used the Part L TER for the purpose of energy efficiency:

- **Require a certain % reduction on the Part L TER to be made *through energy efficiency features*** (that is, before counting any further improvements to TER made by the addition of renewable energy). This follows the London precedent – where the requirement is 10% in homes, or 15% in non-residential (but see caveats below.

This presents a conceptual challenge about what counts as an 'energy efficiency' feature, as some technologies offer both energy efficiency and renewable energy delivery. For example, heat pumps typically deliver 3+ units of heat for every 1 unit of electricity consumed (making them 300% efficient, while a gas boiler is ~89% or direct electric heating is ~100%) – but also some of the pumped heat is 'renewable' as it is taken from outdoor air, ground or water.

To make this policy workable, the London Plan precedent therefore had to come with guidance on what counts as an 'energy efficiency' feature. It treats heat pumps as a 'renewable energy' feature rather than an 'energy efficiency' feature, to ensure that the required 10% improvement from 'energy efficiency measures' is instead delivered through fabric improvements and other system improvements. If heat pumps were instead categorised as an 'energy efficiency' feature, a local policy could set the required % TER improvement from energy efficiency to reflect the degree of improvement that could be made by a certain degree of fabric improvement combined with a heat pump. For example, Government's previous Future Homes Standard (FHS) Consultation Response[xii] (2021) stated that the Future Homes Standard would achieve a 75% reduction on the TER set by Part L 2013 and showed, through the indicative FHS specification, that this was feasible through some significant improvements to building insulation at the same time as switching from a gas boiler to a heat pump. Part L 2013 was replaced by Part L 2021, which achieved a 31% reduction on the TER. Therefore the FHS TER would be 63.8% lower than the Part L 2021 TER. The local policy could align with that FHS specification by requiring that new buildings must achieve a 63.8% reduction on the Part L 2021 TER through energy efficiency improvements.

Justifying this sort of approach in terms of feasibility could draw on existing evidence from the London Plan (if the improvement is set to 10-15%) or from the FHS consultations (if the improvement is set to 63.8%). However, there are **caveats to this**:

- Feasibility in non-residential: London's requirement for a 15% TER improvement in non-residential buildings was originally set from the baseline of Part L 2013. Anecdotally, this 15% target has been challenging for the industry to achieve from the new baseline of Part L 2021 and so London has initially had to apply the policy flexibly.
- The approach described above would be unclear in its alignment with the legal duty to mitigate climate change:
    - Because TER is not actually an energy efficiency metric, and because its parent methodology SAP is so inaccurate at predicting buildings' actual energy performance, there is no existing available evidence identified that would robustly show exactly what %TER reduction would be justified by virtue of being aligned to new buildings' necessary contribution to the UK's legislated carbon goals and therefore a necessary way to fulfil the local plan's duty to mitigate climate change. By contrast, the metrics of space heat demand and energy use intensity can be clearly justified in that way.
    - A 10-15% TER improvement from 'energy efficiency features' may not be ambitious enough for climate-aligned best practice. London's 10% TER reduction target in homes is unlikely to be truly ambitious compared to what the industry can achieve today (via products and techniques that have advanced since London first set this policy) nor what is necessary within the UK's net zero carbon future (that is, a space heat demand of 15-20kWh/m2/year in new builds from 2025, and a heat pump or similarly efficient system). London's application monitoring[xiii] shows an average 19.8% TER reduction via energy efficiency, but this is from a 2013 baseline and excludes heat pumps. A significant benchmarking exercise might be

needed to evidence whether it is possible to specify a higher TER improvement from energy efficiency, unless categorising pumps as an energy efficiency feature, in which case there is evidence that a ~63%+ reduction can be achieved on Part L 2021 TER – in that this aligns with Government's 2021 FHS consultation response previously cited.

- Cost evidence: T publicly available evidence on the build cost uplift of London's policy for a 10-15% TER reduction through efficiency features.
    - Alternatively, if heat pumps are treated as an 'efficiency' feature, there is cost evidence available from the Future Homes Standard, Future Homes Hub and other recent local authorities' policy evidence bases looking at the cost to upgrade fabric and to switch from gas heating to heat pumps.

A further option could be to retain the Space Heat Demand and Energy Use Intensity metrics as outlined in the more ambitious precedents – but only **as secondary metrics that are used alongside the primary metric of % TER reduction** from energy efficiency measures, as above. However, as previously noted, there is no method identified that can robustly and consistently identify what % TER reduction might typically be represented by a building that achieves those SHD and EUI metrics. This would be challenging not only because of the different methodological approaches but also because SHD and EUI are absolute metrics while TER is a 'relative' metric that is set at a different level depending on what shape, size and type the building is – and because TER is a carbon metric not an energy efficiency metric, as previously noted. Additionally, if SHD and EUI are used only as secondary metrics, it may prove unsuccessful to implement these in practice in getting developers to adhere to them and would inhibit policy clarity.

For all of the aforementioned reasons, there was no identified alternative policy option that would both comply with the WMS2023's stipulated metric/method while also sufficiently meeting the previously explained legal duty to mitigate climate change and remaining consistent with the aforementioned NPPF expectations on the extent of carbon reduction that the plan should pursue.

Renewable energy

The WMS2023 does not mention renewable energy at all. Therefore the WMS does not lay any constraints on the power of local plans to set 'reasonable requirements for a proportion of energy use at the development to be from renewable sources in the locality of the development' (Planning & Energy Act 2008, paraphrased).

Therefore, there is **nothing in the WMS or the legislation to prevent the adoption of a policy that requires energy use on site to be met with 100% renewable energy**, so long as this can be shown to be 'reasonable' as per the wording of the Planning & Energy Act (which grants the power to require renewable energy at new development through local plan policy).

The Planning & Energy Act does not define 'energy use at the development'. Therefore there is **nothing to prevent the interpretation that this logically means *total* energy use**, not just the fraction of energy use that is 'regulated' by building regulations.

The Planning & Energy Act does not define 'reasonable'. As previously outlined, the report interprets that this, in the planning context, should therefore mean:

- Feasible to achieve
- Within a cost uplift that still allows for necessary development to remain viable
- An effective and socially beneficial means of working towards the NPPF goal of *sustainable development*, in particular:
    - The plan's legal duty to ensure that development and use of land contributes to mitigating climate change (Planning & Compulsory Purchase Act 2004)
    - The imperative to achieve 'radical reductions in greenhouse gases … tak[ing] a proactive approach to mitigating … climate change … in line with the objectives and provisions of the Climate Change Act 2008' and 'provide a positive strategy [to increase the supply of] renewable and low carbon energy and heat' (NPPF as previously cited).

Policy necessity has been demonstrated through the WP1 literature review report and the separate HBBC evidence report on local carbon budget assessment (which derives a local carbon budget from the legislated national ones).

Feasibility and cost uplifts can be demonstrated through the WP2 evidence base report on energy modelling and cost analysis of policy scenarios, along with evidence bases of many adopted precedent plans, especially Cornwall, Bath, and Central Lincolnshire (and many other emerging plans). Their feasibility evidence shows that 100% on-site renewable energy is feasible *so long as sufficient energy efficiency improvements are made first* – therefore in these precedent policies (as in proposed HBBC Policy Option 3), the 100% renewable energy requirement is paired with energy efficiency targets in terms of energy use intensity (EUI) limits. The WMS does not prevent the setting of renewable energy targets that have the indirect effect of needing to design towards sensible EUI targets. These third-party evidence bases also further demonstrate the inadequacies of SAP in predicting building energy use and therefore in policy effectiveness if used to express policy.

An alternative approach could be to require a 100% reduction in TER by renewable energy generation on-site after the required reduction from energy efficiency has been achieved. This would follow the structure of earlier adopted precedents such as Milton Keynes Plan, which requires firstly a 19% reduction in TER, and then a further 20% reduction in TER via renewable energy (implying that the first 19% would be through energy efficiency). However, the way that Part L TER is calculated does not fully recognise the benefits made by on-site solar PV (the carbon savings it credits to solar PV generation per kWh are not as great as the carbon emissions it attributes to energy use

per kWh). This means a 100% TER reduction target requires over-provision of renewable energy, compared to the amount of regulated energy use – but yet still an under-provision of renewable energy in relation to total energy use. A renewable energy policy framed around TER would also have to be calculated using building regulations calculation methods of SAP / SBEM, therefore would be vulnerable to the inherent inadequacies and inaccuracies of SAP/SBEM as previously described.

Embodied carbon

Embodied carbon is not mentioned by the WMS2023 at all.

Nor is there any national legislation or regulation on embodied carbon.

There has been no other relevant national policy statements identified at the time of writing this report (including public archives of written ministerial statements[16]) that define a national policy approach to embodied carbon of buildings specifically.

The phrase 'embodied carbon' does appear in a separate WMS of 18th December 2023[17] stating that the Government intends to eventually "develop an embodied emissions reporting framework that could serve future carbon leakage and decarbonisation policies". That WMS' focus is on imposing conditions for imported goods, not on how to account for UK construction embodied carbon, in planning policy or otherwise.

Thus it appears there is still no relevant national approach with which local policy would need to be consistent in order to meet the NPPF tests of soundness previously explained. The scope of action available to the local plan with regards to embodied carbon therefore remains the same as it was before. HBBC local plan policy development team could therefore consider the option to the approach of previously noted adopted or emerging plans elsewhere that require embodied carbon reporting or compliance with specific embodied carbon targets. **To adopt any embodied carbon policy, HBBC should strengthen its own existing internal necessary expertise to implement such a policy**. This would involve creation of resources, training or recruitment to expand the Council's capacity to validate planning applications' performance against an embodied carbon standard.

[16] https://questions-statements.parliament.uk/#written-statements

[17] https://questions-statements.parliament.uk/written-statements/detail/2023-12-18/hcws146

3. Relevant policy themes

3.1 Operational energy

Operational energy is an area of policy development where the local plan can push boundaries and ensure the provision of buildings that are fit for the future, both in terms of reduced energy consumption and holistic integration of design decisions that address climate adaptation.As already explored in WP1 and 2, recent examples have detached from the previously typical CO_2 % reduction approach that had been driven by metrics used for Building Regulations compliance. These precedents now assess operational energy based on three key metrics:

3.1.1 Space heating demand (SHD)

Space heating demand simply represents the thermal energy efficiency of a building, which is primarily controlled by insulation properties of external and internal building elements, air tightness and thermal bridging. Unlike EUI, space heating demand is agnostic to any technology that requires powering within a building; rather the space heat demand metric is a measure of how many units of heat are required to provide sufficient comfort levels for occupants of the building. Whatever technology is used, whether this is a heat pump or gas boiler, will not change the space heating demand value as it is solely based on the fabric efficiency of the building.

3.1.2 Total energy use (Energy Use Intensity; EUI)

This is the total energy consumption of the whole building, measured in kWh/m^2/year. Energy Use Intensity (EUI) takes account of regulated *and* unregulated energy. This is important because the scope of Part L of Building Regulations does not include unregulated energy, meaning any policy based on Part L cannot result in a truly net zero building.

It is a crucial metric because it can prevent inefficient heating technologies (e.g. gas boiler or 'direct electric') from being used in designed buildings that are aiming to achieve policy compliance. Setting the right value can implicitly ban inefficient technologies as compliance with an EUI requirement is not possible due to significant energy use inefficiencies. For example, for one unit of energy used, a gas boiler will produce slightly less than one unit of heat (or a direct electric heater will produce one unit of heat), whereas a heat pump will produce three units of heat. Therefore, the heat generation proportion of the final EUI value will be three times less with a heat pump when compared to gas boiler or electric, to produce the same amount of heat. This saves bills for the occupant, and puts less stress on the electrical grid than if the building were to use direct electric heating.

3.1.3 On-site renewable energy generation

Under this energy-based policy approach – instead of a carbon-based approach – with these three key metrics, on site renewable energy generation typically is set at a level that requires equivalent annual on-site generation to match annual total energy use. This final metric therefore provides the final piece in achieving a low energy consumption, energy efficient, net zero energy (and therefore net zero operational carbon) building.

The lower the required EUI limit in policy, the less on-site renewable generation is needed to reach an on-site net zero energy balance. Generation is most easily achieved via rooftop PV.

Key benefits from the approach taken in this theme include:

- A truly operationally net zero building
- Low energy consumption
- Zero fossil fuel use
- Significantly reduced operational costs for residents
- Reduced reliance on grid decarbonisation
- Simple post-occupancy monitoring to understand performance gap
- Potential for decentralised energy networks
- High levels of building comfort for occupants

3.2 Embodied Carbon

Operational energy policy requirements are gradually becoming more consistently set at levels necessary to align with UK carbon budgets and its eventual 2050 net zero target. However, as operational energy and carbon are reduced, the proportion of embodied carbon becomes larger than ever as a share of the building's lifetime carbon emissions. This means that reductions to embodied carbon will require increased attention going forward.

The definition of net zero is key when considering operational and embodied carbon, since a truly net zero carbon building (over its entire lifetime) would require zero embodied and operational carbon emissions. The vast majority of nominally 'net zero' buildings today only consider operational emissions. In working towards a wholly net zero carbon building, local plan policy would need to address embodied carbon with equal weight, if not more, than operational energy/carbon policy.

A number of local authorities have now implemented embodied carbon policies that require reporting for development above a certain threshold, typically only larger development. However, where viability allows, requirements for embodied carbon targets to be hit should be promoted and integrated into local plans.

3.3 Overheating

Similarly to embodied carbon, the link between overheating and operational energy is becoming ever important and now needs to be put at the forefront of local plan policy, simultaneously with operational energy and embodied carbon policies.

As climate change impacts worsen, particularly with more extreme and more variable temperatures, the need for overheating assessments to be undertaken for new buildings is crucial for current and future occupant comfort. In particular, new buildings that meet ambitious space heating demand requirements (previously described) will be at increased risk of overheating due to the ability of the building to retain heat well. Clearly, throughout winter this is a key comfort benefit, yet during summer this can result in the opposite effect if not otherwise mitigated with measures to enhance ventilation and avoid excess solar gain, in warmer months. It is therefore paramount that overheating risk is sufficiently assessed and integrated into decisions throughout design stages to ensure high fabric efficiency standards are not achieved at the detriment of internal comfort and temperature levels.

In addition to addressing overheating with building-related measures, overheating mitigation measures can also be integrated alongside blue and green infrastructure policies. Benefits here are further intertwined, whereby overheating risks can be mitigated whilst also improving the biodiversity of a site. For example, green roofs, walls and trees are effective at reducing surface temperatures through natural shading and evapotranspiration.

3.4 Renewable energy

The UK grid is becoming increasingly powered by renewable energy, primarily through solar and wind technologies. This is a vital part of the UK's carbon reduction trajectory, which will need[2] near-total grid decarbonisation by 2035 and a mix that includes 80% renewables by 2050 while catering for a doubling of electricity demand between 2020 and 2050.

However, it is more important now than ever to ensure that the future energy network is resilient to increasingly variable weather patterns, which will require a balanced mix of generation and storage technologies. Without resilient energy networks at local and national levels, a reliance on fossil fuels will remain when solar and wind power generation is low due to weather constraints.

Partly due to current rise in large-scale renewable energy installations, some local grid substations are at risk of reaching full capacity in coming years without infrastructure reinforcement investments. As the industrial, commercial, domestic and transport sectors continue to electrify (switching from gas, coal and oil) at increasing rates, local policy must support as best it can the development of smart grids and energy sharing networks to relieve pressure on local areas at risk of reaching full grid electricity capacity. On-site energy management systems will play an important role in achieving this, through the provision of battery storage alongside solar PV generation and enabling peak-demand response management systems throughout new buildings. A permissive policy approach towards applications for standalone grid-connected battery storage can also play a role in readying the energy system for the UK's renewable-heavy, electricity-led future.

As local renewable energy generation schemes become more prominent and take up a larger proportion of land, it is also important to ensure that adverse impacts are not inflicted on local communities. Therefore, whilst local policy should support for sensible allocation of renewable energy generation schemes as much as possible, it should also set criteria that mitigates potential negative impacts, such as addressing community co-benefits and improving biodiversity on-site.

4. Policy options considered

4.1 Considering precedents: Two main types of approach to net zero carbon buildings policy – and their variations, strengths and weaknesses

- **Policy type 1, Using building regulations metrics:** Policies that require a % improvement on Building Regulations Part L Target Emissions Rate (in some cases is a 100% reduction) and/or improvements in other Part L metrics.
    - Adopted examples: London Plan 2021 policy SI 2[18]; Milton Keynes 2019 policy SC1[19]; Reading 2019 Policy H5[20], Warwick Net Zero Carbon DPD 2024[21]; West Berkshire Local Plan Review 2025 Policy DM4[22]; many others.
- **Policy type 2, 'True net zero operational carbon' using energy-based metrics:** Policies set fixed energy efficiency targets in terms of 'space heat demand' and 'total energy use intensity' (EUI), and renewable energy provision to match 100% of the development's total annual energy use. This follows the recommendations of expert green building coalitions LETI and UKGBC.
    - Adopted examples: Cornwall[23], Bath & North East Somerset[24]; Central Lincolnshire[25], Tendring & Colchester Borders Garden Community DPD[26].
    - HBBC's proposed Policy Option 3 follows this model.

There is variation within these categories. The table (opposite) outlines typical variations.

In addition to the operational carbon policy types described above, there is one adopted and several emerging local plans that require reporting and/or specific targets in **embodied carbon**. That is the carbon emitted in order to construct the building (including material extraction, product manufacturing, transport of materials to site, use of energy during construction). In some cases the 'embodied carbon' can also include the maintenance and eventual demolition/disposal of the building at end of life – in which case the scope is termed 'whole life embodied carbon'.

As previously noted, there is no current national building regulation that regulates embodied carbon, nor any nationally described standard for reporting it. However, the industry has developed its own standards for reporting on embodied carbon (the RICS Whole Life Carbon Assessment methodology). Two pioneering bodies in the industry[xiv] have also collaborated to develop a range of targets (for up-front or whole-life embodied carbon) that define current 'business as usual' ranging to ambitious pioneering practice at the cutting edge of what is feasible today. Some of the emerging local plans elsewhere are basing their policies around those industry targets.

Table 1. Comparison of net zero carbon buildings policy types

Topic of variation	Policy type 1 (Using building regulations metrics)	Policy type 2 (True net zero in operation as per green experts)
Energy efficiency	• Either a % reduction on Part L Target Emission Rate to be achieved through 'energy efficiency measures' (e.g. London Plan; Warwick DPD) • And/or a % or fixed improvement over Part L Fabric Energy Efficiency (e.g. Warwick DPD; West Berkshire emerging[27])	• Space heat demand target either 15, 20 or 30 kWh/m²/year, (varying by building type and each local plan area's viability pressures) • Total energy use intensity targets of 35 to 45 kWh/m²/year in homes (varying by cost/ viability situation) or higher in non-residential (varying by different non-residential uses)
Renewable energy	• Either renewable energy provision on-site to meet a specified % of the building's energy demand (may be regulated-only, or total energy)	• Provision of renewable energy annual generation capacity on-site equal to the building's predicted total annual energy demand. (thus 'net zero').
Offsetting	Where compliance with the above are not feasible/viable: • Either an S106 payment per tonne of operational carbon emissions over a 30-year period • Or an S106 payment per kWh of energy demand not matched by on-site renewable generation. Ringfenced to deliver projects to generate that energy or otherwise save an equal amount of carbon. Typically in the local plan area, but in some cases a county-wide scheme (e.g. Warwick DPD, via Warwickshire Ecosystem Services Trading Protocol).	Where the renewable energy requirement is not feasible: An S106 payment per kWh of energy demand not matched by on-site renewable generation. Ringfenced for the local authority to deliver renewable energy projects generate the equivalent amount of renewable energy. To be spent typically within the local plan area, but in some cases a county-wide energy offsetting scheme (e.g. Uttlesford emerging[28], linked to Essex model policies).

[18] https://www.london.gov.uk/sites/default/files/the_london_plan_2021.pdf#page=357
[19] https://www.milton-keynes.gov.uk/sites/default/files/2022-05/PlanMK%20Adoption%20Version%20%28March%202019%29.pdf#page=222
[20] https://images.reading.gov.uk/2019/12/Local_Plan_Adopted_November_2019.pdf#page=82
[21] https://www.warwickdc.gov.uk/downloads/file/8504/net_zero_carbon_dpd-adopted_may_2024
[22] https://www.westberks.gov.uk/media/63648/LPR-version-for-adoption-by-Council/pdf/LPR_version_for_adoption_by_Council.pdf?m=1749637079373
[23] https://www.cornwall.gov.uk/planning-and-building-control/planning-policy/adopted-plans/climate-emergency-development-plan-document/
[24] https://beta.bathnes.gov.uk/policy-and-documents-library/local-plan-partial-update-adoption-documents
[25] https://www.n-kesteven.gov.uk/central-lincolnshire/local-plan-review-adopted
[26] https://talk.tcbgardencommunity.co.uk/examination-latest-news
[27] https://www.westberks.gov.uk/media/53945/Proposed-Submission-Regulation-19-West-Berkshire-Local-Plan-Review-to-2039-Clean-Version/pdf/LPR_2022-2039_Proposed_Submission_for_consultation_20_Jan_2023_for_web.pdf?m=638096652954630000#page=156
[28] https://www.uttlesford.gov.uk/media/13180/Local-Plan-Full-Doc-high-res-no-bleeds-2a/pdf/Local_Plan_Full_Doc_-_high_res_no_bleeds_2a.pdf?m=1722872902437

4.1.1 Pros and cons of the approaches

Table 2. Pros and cons of net zero carbon buildings policy types

Policy type 1 (Using building regulations metrics)	Policy type 2 (True net zero operational carbon as defined by green building bodies)
Pros: • Uses metrics and calculations that all developers are already proficient with as they must already perform these calculations to pass building control • Can be made fully consistent with the WMS2023 (discussed previously; see section 0)	**Pros:** • Fixed energy targets that align with the necessary changes for the UK's carbon budgets – thus demonstrably fulfils the plan's legal duty to mitigate climate change (see section 4.3 on this) • Includes all energy, not just regulated • Incentivises not only good fabric and efficient heat systems, but also inherently thermally efficient building forms • Effectively reduces occupant energy bills • Can be measured in use, as the targets are meant to reflect actual metered energy use • Incentivises the industry to learn how to use these vital metrics for the UK's future
Cons: • Cannot ensure the energy efficiency standards necessary for the UK's carbon budgets (due to inaccurate metrics and limited scope) • Neglects the carbon associated with unregulated energy use in the building and is subject to the weaknesses of the building regulations calculation methods. (Although this could be partially addressed via a 100% renewable energy requirement separate from Building Regulations metrics – but this would need other calculations to establish what that total energy use is, as SAP and SBEM are either unable or inaccurate at this) – See section 4.3 on why this would fail the local plan's climate mitigation mandate set by the NPPF and law • Although the metrics used are ones that Building Control officers will be familiar with, implementation will require Development Management officers to gain understanding of these • Burden on local authority to implement offsetting projects to some extent. • Currently the only method available to express such a policy is Building Regulations Part L SAP 10.2 method, but if the policy is tied to that then it will quickly become obsolete as Part L SAP is being replaced by a new calculation model (HEM) some time between 2025-27. As HEM is not yet available in a usable form, it is not known whether a SAP-based policy will be able to be assessed when HEM replaces SAP. This creates a high risk of policy ineffectiveness.	**Cons:** • Will require the local authority development management officers to become familiar with the metrics that would be used and how to assess compliance with these in applications (albeit this is also true for the other type of net zero carbon policy) • Burden on local authority to implement offsetting projects to some extent (albeit this is also true for the other type of net zero carbon policy) • Some learning required by the development industry to utilise the right calculation methods for the required metrics – although some major developers (Landsec[29] and Barratt[30]) are already using these metrics and/or committing to standards similar to those expressed in proposed Policy Option 3.

[29] https://landsec.com/sites/default/files/2024-03/Sustainable%20Development%20Toolkit.pdf
[30] https://www.passivhaustrust.org.uk/news/detail/?nId=1450

4.1.2 Examples of inspectors' rationale in approving policies like that proposed for Hinkcley & Bosworth's proposed Policy Option 3

Inspectors have had highly diverse reactions to precedent local plans in both aforementioned categories of 'buildings carbon reduction' policy, even between similar policies. The main success factor in common across the plans that were approved – of either type – appears to be that these plans came with robust evidence that the policies were necessary, feasible and were costed so that they could be shown to be viable. However, a further major factor in success appears to be the strength and clarity of arguments made at the examination itself, even where policies and evidence bases are similar. This current evidence base for the Hinckley & Bosworth's proposed Policy Option 3 emulates the rationale of those approved policies and draws directly on their evidence where relevant.

The following table summarises Inspectors' reasoning on approving relevant policies with similar or identical metrics to Hinckley & Bosworth's proposed Policy Option 3:

Table 3. Summary of Inspectors' reasoning on approving policies similar to proposed Policy Option 3

Policy example	Net zero carbon new build policy requirements	Inspector rationale

Bath & North-East Somerset (B&NES): Policy SCR6[31]
 	
(Examined 2022; adopted January 2023)
	New build homes must be net zero carbon in operation, via:
	• Space heat demand (SHD) limit: <30kWh/m²/year
	• Energy use intensity (EUI) limit: <40kWh/m²/year
	• Onsite renewable energy to match total energy use.
	• Offset payment if the above cannot be met:
	  ○ B&NES: £373/tonne of carbon in 30 year period, plus 10% admin fee (in SPD[32])
	  ○ Cornwall: £117/MWh of energy use not matched by onsite renewable energy generation (in guidance[33]).
	
	B&NES shared the same evidence base with Cornwall, on feasibility (energy modelling) and cost.
	
	These SHD and EUI targets are slightly looser than other later adopted plans (e.g. Central Lincolnshire and Tendring, below) and many emerging plans. This is because this local plan's energy modelling evidence identified a "cost
		Inspector Philip Lewis' examination report (December 2022)[34] included:
		• Noted that "The Policy includes limits on space heating and total energy use, taking an energy-based approach, rather than being based upon carbon reduction as per the Building Regulations. The [Policy] applies to both regulated and non-regulated energy use, which is a further difference to … Building Regulations"
		• Noted that "The Planning and Energy Act 2008 includes provisions for local planning authorities to exceed the minimum energy efficiency requirements of the Building Regulations where they are not inconsistent with relevant national policies for England", and that "One of the tests of soundness is that local plans are consistent with national policy – enabling the delivery of sustainable development in accordance with the policies in the NPPF and other statements of national planning policy", and that one of the extant national policies was the WMS2015 which would block B&NES proposed policy – but also that the WMS2015 did "not reflect [the new] Building Regulations, the Future Homes Standard, or the [Climate Change Act goal of] net zero by 2050" which led to reduced relevance for the WMS2015 and the parts of the NPPG linked to it.
		• Concludes that "The NPPF is clear that mitigating … climate change … is one of the key elements of sustainable development, and that the planning system should support the transition to a … low carbon future … Whilst [the] NPPF… sets out that any local requirements for the sustainability of buildings should reflect the Government's policy for national technical standards … any inconsistency with [WMS2015] does not [mean] that Policy SCR6 is unsound, nor inconsistent with relevant national policies." … "I am satisfied that the [proposed] standards … are justified and … would not threaten [housing] deliverability or viability".

Cornwall policy SEC1[35]**;**		Inspector Paul Griffiths' examination report (January 2023)[36] concluded that: • The requirements "are justified in the light of the aim of this Plan to achieve net zero by 2030" • "Provisions to allow Councils to go beyond the minimum energy efficiency requirements of the Building Regulations are part of the Planning and Energy Act 2008"

[31] https://www.bathnes.gov.uk/sites/default/files/2023-06/1.%20Districtwide%20Composite%20plan%20final.pdf#page=68
[32] https://www.bathnes.gov.uk/sites/default/files/2023-01/PlanningObligationsSPDJan2023%28accessible%29.pdf#page=71
[33] https://www.cornwall.gov.uk/media/32elztg5/cedpd-policy-sec1-2b-renewable-energy-off-setting-framework-february-2025.pdf#page=4
[34] https://www.bathnes.gov.uk/sites/default/files/2022-12/EXAM24%20Inspectors%20Report.pdf
[35] https://www.cornwall.gov.uk/media/uxgjk4jn/climate-emergency-dpd.pdf#page=39
[36] https://www.cornwall.gov.uk/media/10pmiq1e/appendix-1-cornwall-climate-emergency-dpd-final-report-1.pdf

Policy example	Net zero carbon new build policy requirements	Inspector rationale
(Examined 2022; adopted February 2023)	optimised net zero carbon" buildings specification – matching these EUI and SHD limits – which placed less pressure on viability compared to what stricter EUI/SHD targets would do, while still keeping buildings' energy use low enough that it can still be matched by solar panels fitting on the building's roof.	• Echoed the B&NES inspector (above) about the WMS2015 not reflecting the FHS or net zero 2050 and thus of "limited relevance" especially in light of NPPF instructions to pursue "the transition to a low carbon future" • Noted that the costs evidence had informed viability assessment to show that the policy "will have little effect on housing delivery, …. [and] where the evidence shows that there might be an impact … in parts of Cornwall, the policy includes a viability clause." Resultingly, "this approach is soundly based and justified", only amending Cornwall's draft approach of "carbon offset" (payment £ per tonne of carbon) to instead be "energy offset" in £ per kWh of renewable energy generation shortfall versus onsite energy use).

Central Lincolnshire Policy S7 & S8[37]
(examined 2022; adopted April 2023)
	New buildings must be net zero carbon in operation, via:
	• Space heat demand (SHD) limit, all buildings: 15-20kWh/m²/year
	• Energy use intensity (EUI) limits:
	  ○ Homes: 35kWh/m²/year site-wide, within which no dwelling over 60kWh/m²/year
	  ○ Non-residential: 70kWh/m²/year site-wide, within which no unit over 90kWh/m²/year
	• Onsite renewable energy to match total energy use.
	• Offset payment* if the above cannot be met, (only in proposals of ≥10 units or ≥1,000m²):
	  ○ Residential: £5-15k per dwelling unit
	  ○ Non-residential: £5-100k per 1,000 square metres of floor space
	• Viability exception clause for residential in specific low-value locations that the viability assessment had identified as marginal
	• Clarifies exceptional circumstances whereby the offsetting route would be an acceptable route to compliance (e.g. heritage, overshadowing, unique purposes of non-residential buildings, or other technical reasons outside the developer's control).
	• Allows Passivhaus certification as a route to compliance with the SHD and EUI targets.
		Inspector Matthew Birkenshaw's examination report (March 2023)[40] key points:
		• "The Plan is supported by a suite of comprehensive evidence … identify[ing] the need to reduce energy consumption and generate more renewable energy and test[ing] ways in which [local plans can meet these] objectives … [This] evidence shows that existing buildings in Central Lincolnshire account for around 43% of all greenhouse gas emissions. Because a Local Plan has a limited influence on retrofitting existing buildings, in order to reach both national and local targets for carbon reductions, significant reductions in the energy requirements of new buildings are needed now."
		• Notes that the policy's primary aim is to make buildings 'net zero' onsite by meeting energy use with renewable power, while the SHD and EUI are secondary targets designed to make the primary aim feasible.
		• Notes that policy exceeds Building Regulations and affirms the plan's power to do so via the Planning and Energy Act. Notes that that Planning & Energy Act and NPPF both have clauses on consistency with national policies including the WMS2015 at the time – but that the WMS was overtaken by new policy and regulation.
		• Therefore the policy was "not inconsistent with national planning policy for the purposes of the Planning and Energy Act 2008" and was also consistent with the NPPF "when read as a whole" including "that the planning system should support the transition to a low carbon future [and] … radical changes in [carbon] emissions".
		• Noted that the extant national policy on limits to local energy efficiency standards were only expressed in relation to residential, and that therefore local plans are not restricted in such standards for non-residential.
		• Noted that the plan's evidence gave "a comprehensive assessment of issues from the need for carbon reductions to their feasibility and cost" including "a technical feasibility study which assesses different policy options" which had acknowledged that this kind of energy target (EUI and SHD) were ambitious but had proven they were "feasible, and [ensure] occupants will be less exposed to volatile energy price[s]"
		• Noted that the policy took "a justified and proportionate approach to … [flexibility for] areas where viability is already challenging", but a modification was needed to extend this to brownfield sites too.
		• Objectors had claimed that this region's development industry was not ready to meet the standard, but "no convincing evidence [had] been provided to substantiate these concerns" in contrast to the plan's credible evidence of feasibility and viability. Objections that "[in contrast to] Building Regulations, [the proposed policy sets] no gradual implementation or phasing of the standards" were not valid because the policy would not apply to existing permissions which would continue to be built out over many years.
		• Noted that the Council could monitor policy impact on delivery and address this if necessary via future plans.

[37] https://www.n-kesteven.gov.uk/sites/default/files/2023-04/Local%20Plan%20for%20adoption%20Approved%20by%20Committee.pdf#page=32
[40] https://www.n-kesteven.gov.uk/central-lincolnshire/adopted-local-plan-2023/supplementary-planning-documents-guidance-notes#:~:text=Energy%20Efficient%20Design%20and%20Construction

Policy example	Net zero carbon new build policy requirements	Inspector rationale
	*Neither the policy, nor the Planning Obligations SPD[38], nor the Energy Efficiency Guidance suite[39] detail how the exact offset payment is calculated for each specific scheme.	• Appraised that the offsetting mechanism and the "per unit"/ "site-wide" EUI limits mean that the policy approach "therefore strikes an appropriate balance between requiring … the prescribed targets but offering adequate flexibility in circumstances where technical reasons prevent this". Noted that while valid reasons for noncompliance may arise other than those listed in the plan, it is not necessary to list every possible scenario.
Tendring & Colchester Borders Garden Community DPD, GC Policy 8[41] (Examined 2024, adopted June 2025) Please note: This was the first EUI-based policy to be approved at examination since the WMS2023 (albeit not the only; see Uttlesford and Salt Cross, both outlined below).	All buildings shall be net zero in operation at occupation or, in exceptional circumstances, have an agreed strategy to achieve net zero within five years of occupation, and achieve net zero operational energy balance across the Garden Community. In new homes, this includes: • Space heat demand (SHD) limit: <30kWh/m²/year • Energy use intensity (EUI) limit: <40kWh/m²/year • Onsite renewable energy to match total energy use. • Offset payment if the renewable energy requirement is not met (but the DPD does not specify the offset pricing or formula). Non-residential buildings are not given any EUI or SHD targets but would still be subject to the requirement for "all buildings [to] be net zero". This policy relied on evidence produced at County Council level (Essex) on the feasibility and cost uplift of these energy targets, as the settlement would straddle the border of two local councils.	Inspector Graham Wyatt's examination report, March 2025[42] key points include: • "The Councils confirm that [their energy performance targets are] in line with the current definition of Net Zero carbon in operation and is supported by the Low Energy Transformation Initiative and is fully considered within the Essex Design Guide which contains the Essex Net Zero Policy Study". • Acknowledgement that the proposed policy uses "uses three metrics to separately measure each of the key attributes needed to achieve Net Zero. This is in comparison to the single performance metric of the Target Emissions Rate, which amalgamates into one metric a buildings effort in terms of energy efficiency, low carbon, heat, and renewable energy generation. Consequently, GC Policy 8 does go further than current or planned Building Regulations" but that the respective Councils had "agreed a Statement of Common Ground … with the lead developer" of the proposed Garden Community and also that this proposed policy "builds upon all the work that has been done by the Councils and ECC, such as the Essex Net Zero Policy Study, and accords with the shared vision of the Council and developer. The aim to meet Net Zero throughout the Garden Community has also been subject to site specific viability testing" • "In reaching this decision I have had regard to the 2023 Written Ministerial Statement [WMS2023] … However, **whilst the [WMS2023] is a material consideration of significant weight, the [plan] must … in accordance with … the [Planning & Compulsory Purchase] Act, include policies which contribute to the mitigation of … climate change**. Additionally … the Planning and Energy Act 2008 states that [local plans] may [impose] reasonable … energy efficiency standards that exceed the energy requirements of building regulations. **Consequently … GC Policy 8 Part A is appropriate and justified**". • The policy "has been tested and demonstrated to be viable and is supported by a lead developer with shared aspirations to deliver an exemplar mixed-use development", and it provides the detail to a new garden community" which has been a long-standing aspiration for the respective Councils including the intention to "secure the highest standards of energy efficiency and innovation in technology to reduce the impact of climate change across the Garden Community".
Uttlesford Local Plan Policy CP22[43]	All new buildings of 1 dwelling or ≥100m² floorspace must be net zero in operation, via: • Space heat demand (SHD) limit: ○ Bungalows: ≤20kWh/m²/year	Inspectors Guy Davies and William Cooper post-hearings note to the Council, July 2025[44]: This note shows that the Inspectors have no intent to remove the energy targets nor the net zero carbon policy approach as a whole:

[38] https://www.n-kesteven.gov.uk/sites/default/files/2023-11/Planning_obligations_SPD_adopted_October_2023.pdf
[39] https://www.n-kesteven.gov.uk/central-lincolnshire/adopted-local-plan-2023/supplementary-planning-documents-guidance-notes#:~:text=Energy%20Efficient%20Design%20and%20Construction
[41] https://legacy.tendringdc.gov.uk/sites/default/files/documents/planning/Planning_Policy/Garden_Community/Development%20Plan%20Document%20%28DPD%29.pdf#page=118
[42] https://legacy.tendringdc.gov.uk/sites/default/files/documents/planning/Planning_Policy/Garden_Community/Inspectors%20Report.pdf
[43] uttlesford.gov.uk/media/13180/Local-Plan-Full-Doc-high-res-no-bleeds-2a/pdf/Local_Plan_Full_Doc_-_high_res_no_bleeds_2a.pdf?m=1722872902437
[44] https://www.localplanservices.co.uk/_files/ugd/017f5b_bf62550d1d54440d95d5f919f3641fef.pdf

Policy example	Net zero carbon new build policy requirements	Inspector rationale
(examined June 2025; inspectors' indicative approval July 2025)	○ All other buildings: ≤15kWh/m²/year • Energy use intensity (EUI) limit in homes: ○ Homes: ≤35kWh/m²/year site-wide, within which none over 60kWh/m²/year • EUI limit in non-residential, where feasible: ○ Offices: ≤70kWh/m²/year ○ Schools: ≤65kWh/m²/year ○ Light industrial: ≤35kWh/m²/year ○ … unless exceedance is due to high unregulated energy that is unavoidable for the specific proposed building use ○ Other: Submit the predicted the EUI and compare to relevant EUI target in UK Net Zero Carbon Buildings Standard. • Onsite renewable energy to match total energy use, or if unfeasible then 80-120kWh/m²footprint/year • Offset payment if the renewable energy requirement is not met (for Council to install solar PV elsewhere, but price is unspecified) • Buildings must not use fossil fuels on site. This Uttlesford local plan relied on the same Essex-level feasibility and cost evidence as the previously approved Tendring & Colchester DPD above, plus similar evidence of policy need as this current evidence base for HBBC.	• The note discusses firstly several issues unrelated to the net zero carbon policy including housing land supply calculations, proposed road links, protection of countryside and Stansted airport, safeguarding land for schools, reasons for development capacity constraints in specific locations, and accessibility standards. • The note also continues that: "At the hearing we said we would be giving further thought to a number of … issues including … net zero housing standards … Having considered those issues in more detail, **we have decided not to require any further main modifications beyond those already proposed by the Council** or discussed at the hearing. We will set out our reasoning on these issues in our examination report" • The only modification relevant to the targets shown here was to amend the bungalow space heat target to be "no more than" instead of "less than" 20 kWh/m²/year. • The Main Modifications consultation is instructed to run for no less than 6 weeks. The date of that is as yet unknown.
Salt Cross Area Action Plan AAP, Policy 2[45] (and March 2025 modification versions "ed9d"[46] and "ed9e"[47])	All new buildings must be net zero carbon in operation via: • Space heat demand (SHD) limit: 15-20kWh/m²/year • Energy use intensity (EUI) limits: ○ Homes: <35kWh/m²/year ○ Offices: ≤70kWh/m²/year	Inspectors Darren McCreery and David Spence (2022) rejected this policy on the view that it could not be justified to depart from nationally described energy efficiency standards (Building Regulations), due to the WMS2015. This rejection was found unlawful at High Court[xv] (2024) as the Inspectors had misinterpreted the relevance of the WMS2015. The AAP was re-examined in Summer 2025[48] in the new context of the WMS2023 (see section.2.1.3). Inspector Helen Hockenhull's post-hearings note (August 2025)[49] includes the following key points:

[45] https://www.westoxon.gov.uk/media/gs3do2m0/cd1-pre-submission-draft-salt-cross-garden-village-area-action-plan-aap-august-2020.pdf#page=45
[46] https://www.westoxon.gov.uk/media/v0mkpt2s/ed9d-proposed-modifications-to-policy-2-and-supporting-text-march-2025.pdf
[47] https://www.westoxon.gov.uk/media/vgmlh2o3/ed9e-schedule-of-proposed-modifications-to-policy-2-and-supporting-text-march-2025.pdf
[48] https://www.westoxon.gov.uk/planning-and-building/planning-policy/salt-cross-garden-village/salt-cross-area-action-plan-examination/salt-cross-area-action-plan-examination-2024-2025/
[49] https://www.westoxon.gov.uk/media/vzkb3lbi/ed16-salt-cross-post-hearing-letter-1-aug-25.pdf

Policy example	Net zero carbon new build policy requirements	Inspector rationale
First examination: 2021 (but decision on this policy was overturned) Second examination (with positive outcome for this policy): 2025	○ Schools: ≤65kWh/m²/year ○ All others: EUI limit to be discussed and agreed with the council during pre-application meetings. • Onsite renewable energy to match total energy use • Buildings must not use fossil fuels on site. Notably: Unlike all other examples shown in the table above, the Salt Cross AAP does not include a mechanism to allow developers to make offset payments in lieu of not meeting renewable energy requirement on site. This is presumably because it is stated that this AAP relates to a specific site whose conditions are known and for which the feasibility studies have shown it should be feasible to meet the renewables requirement on site thus no need for the flexibility that an offsetting mechanism would offer. Additionally, embodied carbon should be calculated and shown to meet the relevant limit on up-front embodied carbon as specified for the relevant building type in the UK Net Zero Carbon Buildings Standard.	• Observes that the AAP uses the EUI metric instead of the WMS2023's stipulated metric of TER and stipulated calculation method of SAP. However, Hockenhull observes that while the WMS2023's purported goal was to prevent proliferation of standards, national government was already introducing new standards (e.g. HEM to replace SAP) and that the Council's evidence of feasibility and cost showed that "the EUI metric is suitable and feasible to assess energy use". • "I acknowledge that the WMS is a material consideration, but it should also be read in the context of wider national policy and legislative considerations. Reducing carbon emissions and supporting the transition to net zero forms a central part of the [NPPF] in line with the objectives and provisions of the Climate Change Act 2008. However, no matter how energy efficiency is proposed to be measured, the environmental outcome, to mitigate climate change and contribute to meeting the net zero obligation, will remain the same. Based on the evidence before me, I conclude the Council's approach is consistent with national policy." • The Inspector's note establishes there is a need for several modifications, but none of these are to remove any of the EUI or SHD targets nor the overall 'net zero' requirement. Rather, the modifications are: ○ Modifications for the purpose of clarity, including: ○ Removing the "less than" from the space heat demand target of 15-20kWh ○ A need to explain when the pre-application discussions would occur to establish EUI targets for the uses where the policy does already not specify an EUI target ○ A need to explain whether the renewable energy requirement must be met on-plot or simply across the wider Salt Cross village, in light of the energy modelling evidence showing that some taller buildings may struggle to meet the requirement on the building itself. ○ Policy implementation detail; specifically, a need to explain how the required energy calculation requirements would apply across phased development built out by different developers. ○ Modifications to avoid duplicating building regulation – but this related to overheating assessment, not energy and carbon performance targets summarised here. ○ Removal of the reference to the UK Net Zero Carbon Buildings Standard embodied carbon targets, because that "is currently a pilot and could be superseded" which would undermine policy effectiveness. ○ Removal of an in-use energy monitoring requirement because it had not been shown that this would be enforceable or implementable. As with Uttlesford (noted above), this Inspector's note requires the Council to next propose modifications in response to the note, and then to arrange a consultation on those modifications lasting at least 6 weeks.
Winchester Local Plan Policy CN3[50]. (examined April – June 2025; inspectors'	All new residential development (excluding conversion and change of use) must be net-zero carbon in operation via: • Space heat demand (SHD) limit: 15-20kWh/m²/year	Inspector R Barrett's post-hearings note to the council, 10th September 2025[51], indicatively approved the proposed policy standards on the basis of very similar reasoning to the Salt Cross case cited above. In that note, the Inspector: • Acknowledges the type of metric used (energy use intensity) and the Council's rationale for doing so (to meet the Council's 2030 net zero target, which is in advance of the national 2050 goal, and to reduce energy bills for residents)

[50] https://www.localplan.winchester.gov.uk/assets/inline/390/303_local_plan_reg19-web-1-.pdf#page=46
[51] https://www.localplan.winchester.gov.uk/assets/inline/2670/ED38a-Inspector-Note-16-Post-hearing-action-points.pdf#page=8

Policy example	Net zero carbon new build policy requirements	Inspector rationale

indicative approval September 2025)	• Energy use intensity (EUI) limit: <35kWh/m²/year
	• Onsite renewable energy to match total energy use, specifically:
	  • "The total kWh/yr of energy consumption of the buildings on the site and the total kWh/yr of energy generation by renewables to show that the balance is met", and
	  • "Onsite renewables to provide 100% of the energy consumption that is required by residential buildings, for example … photovoltaic solar panels or other suitable forms of renewable energy generating schemes that are appropriate for the location or the setting."
	• Buildings must not use fossil fuels on site.
	
	In non-residential buildings, the policy requires BREEAM Excellent and that they should "maximize on-site renewable energy generation" but does not require them to reach net zero nor does it set any specific required energy efficiency targets/limits for non-residential.
	
	Notably: Like the Salt Cross AAP shown above, the Winchester policy does not include a mechanism to allow developers to make offset payments in lieu of not meeting renewable energy requirement on site. Although this is not explicitly explained in the plan document, the policy is worded in a way that appears to imply that the renewable energy standard is expected to be met entirely on-site (see direct quotes above) which would mean no need for offsetting.
		• Notes that "Reducing carbon emissions and supporting the transition to net zero forms a central part of national policy as expressed at NPPF8c, 157 and 159b, in line with the objectives and provisions of the Climate Change Act 2008"
		• Notes the powers granted to the local authority by the Planning & Energy Act to set higher energy efficiency standards than those of building regulations, while also acknowledging the Act's provisions around consistency with relevant national policies and the use of standards that are nationally endorsed
		• Acknowledges the content of the WMS2023 including the need to ensure development remains viable and the stipulation that local standards should use the Building Regulations Part L TER metric
		• Finds that the Council's viability evidence was sufficiently robust to show that the application of the proposed net zero carbon policy "would be unlikely to impose a significant financial burden on the Plan's planned development or have a significant effect on its affordability" and furthermore that viability is further protected by another one of the Council's proposed policies, H6 (affordable housing), which "includes the potential for an exception to that policy on the basis of viability evidence"
		• Acknowledges that the Council's proposed net zero carbon policy uses the EUI metric and that this deviates from what the WMS2023 prescribes – but also notes that the Council had "sets out a number of advantages of its use [of the EUI metric]" including that it covers total energy use not just regulated, it represents actual predictive modelling, it focusses on minimising energy use and "overall … is a simpler metric, easy to understand [including by] residents … and can be used as a proxy for energy costs".
		• Concludes that "The WMS is a material consideration but needs to be read in the context of national policy and legislation. Evidence is presented to indicate that [the proposed standard is] technically and financially feasible. I recognise that one of the objectives of the WMS is to prevent the proliferation of varied local standards [and that] National … standards provide clarity and consistency for the development industry … However, no matter how energy efficiency is proposed to be measured, the environmental outcome, to mitigate climate change and contribute to the net zero obligation, will remain the same and it will meet the overarching aim of national policy. Therefore … I find the Council's approach … subject to the [modifications] proposed consistent with national policy, justified and effective. It is therefore sound."
		
		The proposed modifications[52] did not involve any change to the energy efficiency metrics and kept the net zero new buildings approach as a whole, but included:
		• A clarification that "requirements should be met at a 'building' level rather than per dwelling". This is a subtle change that would only affect blocks of flats, not affect individual houses.
		• A clarification on the required demonstration of policy compliance, i.e. that this should be "**predictive** energy modelling / energy use intensity" (bold/underline to show the word that was inserted by the modification).

[52] https://www.localplan.winchester.gov.uk/assets/inline/2671/ED38b-Schedule-of-Proposed-Main-Modifications-with-Inspector-comments.pdf#page=8

4.1.3 To recap, the following are the key ingredients for a policy that would ensure it thoroughly fulfils the local plan's legal duty to mitigate climate change to an extent that would be in line with the Climate Change Act (as instructed by the NPPF):

- **New development's energy demand must be minimised** so as to minimise the needed amount of new renewable energy generation and grid reinforcement, given that all other sectors' net zero transition (e.g. transport and industry) will also place high demands on the UK's finite capacity for renewable energy, and other land uses (e.g. afforestation and farming) – considering the limited land supply[53] and the embodied carbon of new energy equipment. This energy efficiency is also vital to protect people from excessive energy bills in the ongoing cost of living crisis.
    - To be certain of alignment with the UK's legislated carbon budgets, this needs to include a space heat demand target of no more than 15-20kWh/m^2/year.
    - To be effective in minimising total energy use to the point where this can be met with on-site renewable energy, this will need to include limits on total energy use intensity (EUI). While this would diverge from the WMS2023's stipulated energy efficiency metric, it would help ameliorate the WMS2023's concern about impact on local energy infrastructure. EUI limits would also be effective in protecting occupants from future volatility in energy prices (as experienced by the UK and internationally in 2022-23).
    - To be an effective policy, this will need to be calculated with an accurate energy prediction method.
- **New development should not use fossil fuel on site** given that the UK needs to transition its building stock away from gas, not add new gas users to the grid – and also given that heat pump technology exists that is three times as efficient as gas.
- **New development should come with enough new renewable energy generation to 'wash its own face'**, so that it does not worsen the existing huge challenge of weaning existing buildings, transport and industry off fossil fuel to electricity. When this condition is met, the building is 'net zero carbon in operation'. Evidence found in other existing and emerging local plan precedents elsewhere (Uttlesford/Tendring/Essex, Greater Cambridge, South Oxfordshire & Vale of White Horse, Central Lincolnshire, Cornwall, Bath & North East Somerset) showed this is feasible in an array of typical types of building, so long as the building is energy efficient as above (See further detail in section 6)
- **The energy/carbon metrics used in Building Regulations are unsuited to deliver the performance described above** therefore other more accurate methods are needed. As the national carbon budgets are absolute, the performance standards for new buildings should also be absolute limits, not percentage improvements on standard practice.
- **Therefore the ideal policy for climate purposes would adopt absolute targets** for space heat demand, total energy use intensity per square metre, and 100% renewable energy on site (or payment towards off-site installation), and that all of the above should be demonstrated using an energy modelling approach known to be typically accurate in predicting the building's total energy performance. This approach has been taken in several successfully examined and adopted local plan precedents (Central Lincolnshire, Cornwall, Bath & North East Somerset) albeit these were examined and adopted prior to the Written Ministerial Statement 2023.
- **In light of the Written Ministerial Statement of December 2023, policies that follow the above approach will need robust evidence on feasibility and viability.**
- **A truly comprehensive plan for buildings' climate mitigation would also include mandatory reporting and targets for embodied carbon.** Embodied carbon policies are not affected by the Written Ministerial Statement 2023. However, such a policy should still be carefully designed to ensure the viability headroom to cover the cost of an embodied carbon assessment, by carefully selecting the development characteristics where either the targets or the reporting requirement should apply (in terms of development type and size, taking into account that larger developments of repeated dwelling types can achieve economies of scale as they may only need a single assessment for a large number of units, whereas the assessment itself could represent a proportionally larger burden in smaller developments).

These ingredients informed the criteria by which policy options were identified and assessed, as outlined in the next section.

[53] https://phys.org/news/2023-02-linking-policy-key-uk-21st.html

4.2 Model policies assessed

In light of the range of precedent policies identified and the impacts of the WMS2023, three policy options for operational net zero carbon were identified ranging from least to most ambitious in terms of their climate effectiveness and the extent to which they would require special justification due to divergence from national policy:

Table 4. Comparison of policy options for operational net zero carbon

'Net zero' policy option	1. Fully WMS compliant	2. Testing WMS boundaries	3. True net zero; Overcome the WMS
Energy efficiency requirement	63% improvement on Part L 2021 TER through energy efficiency measures (categorising heat pumps as an energy efficiency measure)	As per Option 1, but also 15-20kWh/ m^2/year target in SAP fabric metric (DFEE) as a proxy for space heat demand	Absolute limits on space heat and EUI
Renewable energy requirement	On-site renewable energy to match regulated energy use, calculated using SAP	On-site renewable energy to match TOTAL energy use, but still calculated using SAP	On-site renewable energy to TOTAL energy use, calculated via an accurate energy prediction method
Offsetting approach if net zero not met on site	Offset 30 years' worth of regulated emissions at (erstwhile) national value of £269/tonne	Offset per kWh of renewable energy shortfall if the renewable energy requirement is not met on site	As per Option 2.
Embodied carbon requirement	Embodied carbon reporting only, for major development using RICS WLC methodology	Embodied carbon reporting for major development using RICS WLC methodology; target 900kgCO_2e/m^2 GIA for large-scale development	Embodied carbon reporting for major development using RICS WLC methodology; LETI-aligned [54] targets set for large-scale development

Option 1 is the least ambitious. Examples of relatively recent precedents include Warwick Net Zero Carbon DPD[55] (examined 2023; adopted 2024).

Option 2: A recent precedent example is West Berkshire, examined and adopted 2025[56] (other than the expression of the offsetting approach).

Option 3 represents the definition of 'true operational net zero' as established by well-respected industry bodies like LETI and UKNZCBS, and is aligned directly with the UK's carbon budgets. Recent precedents have been previously outlined in the current report (see section 4.1.2); at the time of the policy evaluation for HBBC the only adopted precedents were Cornwall, B&NES, Central Lincolnshire, and Winchester.

These policy options were then assessed for their relative merits. It was identified that such a policy would have implications for a wide range of issues that could be relevant to the sustainability of local plan outcomes, including:

- Climate duty: How effectively the policy would reduce carbon emissions, whether at all or to the extent needed to be in line with the Climate Change Act?
- Energy bills: How effectively the policy would protect occupants against events like the 2022-23 energy price crisis and thus fuel poverty?
- Retrofit risk: What magnitude of cost and disruption would occupants incur in any necessary future retrofit before 2050 to align with national carbon budgets?
- Electrical grid: Will this building minimise the stress they place on the local grid, whether from energy use or export of excess at times of peak solar generation?
- Sector readiness: How readily available are the materials and skills (including design) needed to meet this policy, compared to the national FHS?
- Build cost uplift: How much would it cost to comply with this policy? (Drawing on build cost estimates from national government and WP2 cost analysis results)
- Planning powers & precedents: To what extent does this policy utilise powers that are clearly expressed in legislation and/or demonstrated by recent successful adoption of other local plans?
- Compatibility with national approach: To what extent would this policy use existing endorsed national methodologies or metrics, and separately to what extend would it help or hinder broader national policy priorities relating to carbon and energy (such as for example a fully decarbonised electricity grid by 2035)?

All three options were scored for their relative merit in each of the above criteria.

[54] LETI is the Low Energy Transformation Initiative. In addition to their work on setting energy targets aligned with the UK's carbon budgets, they have also done the same with embodied carbon targets (which they have in turn aligned with the similar target setting/benchmarking conducted by RIBA, the Royal Institute of British Architects). Their optimal recommended targets (especially for future years) represent significant improvement on current typical practice.

[55] https://www.warwickdc.gov.uk/info/20799/development_plan_documents/1713/net_zero_carbon_development_plan_document

[56] https://www.westberks.gov.uk/media/63648/LPR-version-for-adoption-by-Council/pdf/LPR_version_for_adoption_by_Council.pdf?m=1749637079373

Policy Option 1- Fully WMS-compliant represented a safe route to compliance with the WMS2023, whilst exceeding Building Regulations standards to an extent, yet does not go far enough to create true net zero buildings that are needed to align with the UK's legally-binding carbon budgets. Because all of its targets are calculated using SAP as per the WMS2023, there is little reflection of real life performance. The energy efficiency targets are therefore not guaranteed to fully protect occupants from energy price rises, nor protect the electricity grid from unnecessarily high energy demands. This option therefore represents the safest option in terms of alignment with the WMS2023's stipulated metrics and individual NPPF paragraph on 'national technical standards', but poses significant risk to the climate and could cause future disruption to occupants and the electricity grid, thus diverging from NPPF paragraphs on 'radical reductions' in carbon emissions 'in line with the objectives of the Climate Change Act'.

Policy Option 2- Testing WMS boundaries represented a strong middle ground between compliance with the WMS and showing additional ambition to create robust net zero policy. The standards suggested, if achieved on-site, may create true net zero buildings due to the requirement that on-site renewable energy matches both regulated and unregulated energy use. However, a performance gap (between energy prediction and actual energy use) will occur due to the use of SAP to calculate the policy metrics. SAP both underestimates regulated energy demand and overestimates unregulated energy demand. Therefore the energy used within the building will be higher than the optimal efficiency level for the UK's climate goals. As a result of this failure to optimise energy efficiency, and due to overestimation of unregulated energy demand, quite a large amount of solar panels would be needed to ensure that the (inaccurately) predicted total energy demand is matched annually. The peak solar panel output would occur at times that tend to coincide with lower energy use in homes, i.e. midday in summer, and this excess energy would likely be exported to the grid. The avoidably high energy demand, and the peak solar export, would raise the risk of additional strain on local grid infrastructure compared to Policy Option 3 or the imminent Future Homes Standard.

Policy Option 3- Overcome the WMS was the ambitious best practice approach that aligns with the scale of action needed in the new build sector for the UK's carbon budgets, and importantly has the lowest risk for occupant bills and future retrofit disruption/costs. Importantly, Approach 3 utilises accurate methods (PHPP or CIBSE TM54) to predict energy use and space heating demand that will better align with real performance. It strongly fulfils the climate mitigation duty and the carbon reduction priorities in the NPPF, but this is necessarily achieved by diverging from the stipulated metrics of the WMS2023. However, this policy option also minimises actual total energy use (thus reducing grid demand) which means that a smaller amount of solar panels are needed to make the building 'net zero', thus helping reduce the likelihood excessive solar export and therefore avoiding excess stress on the electricity grid (or grid upgrade costs). This helps avoid the WMS2023's stated concern about policy impacts on local energy infrastructure, and means that build cost uplifts in Policy Option 3 are similar or lower than Approach 2 and minimal compared to the incoming Future Homes Standard.

In light of this evaluation, HBBC set an intent to pursue Approach 3. The reason for not preferring Approaches 1 or 2 was that they were not aligned with the performance needed for the Climate Change Act carbon budgets and therefore not aligned with the NPPF carbon reduction priorities. There was no way to achieve that alignment without diverging from the WMS2023's stipulations about metrics, because the WMS2023 stipulates an inherently flawed metric and calculation method that is not suitable for the purpose of ensuring energy efficiency to the required degree. Additionally, Policy Option 3 was likely to have the lowest impact on grid capacity and best impact on occupants' energy bills and the risk of future retrofit needs.

Please also note that in the decision to pursue Policy Option 3, it was considered whether to simply follow the UKNZCBS targets for EUI, SHD and renewables, which ramp up slowly over time, but that this idea was discarded because it would not be practical to conduct assessments of feasibility and cost uplift for each individual different year's targets between now and the end of the plan period and also it was felt that this sort of moving target could be complicated for developers and DM officers or could present confusion where a development is granted outline permission but is built many years later. Therefore a single set of targets is selected, for which the proposed Policy Option 3's EUI and SHD targets are approximately aligned with the UKNZCBS targets for circa 2040 (homes), 2030 (offices) or 2025 (light industrial, if assuming this reflects the UKNZCBS category "unconditioned storage"). These targets are supported by feasibility and cost evidence summarised in WP2 evidence base report on energy modelling and cost analysis of policy scenarios.

4.3 Local justification: Analysis of impact on Hinckley and Bosworth's necessary contribution to the nationally legislated carbon budgets

As previously noted, there is a legal duty on the local plan to ensure its policies mitigate climate change, and the NPPF states that the extent of this mitigation should be proactive and in line with the objectives and provisions of the Climate Change Act, ultimately leading to net zero by 2050.

Therefore in order to understand whether the proposed policy is necessary to fulfil that mandate, an exercise was carried out to establish what degree of emissions reduction in Hinckley & Bosworth would be necessary in order to be compatible with the national transition to net zero carbon including the Climate Change Act legislated national carbon budgets. That full exercise and analysis is provided in a separate WP2 report titled "Evidence base: Carbon budget assessment". Findings are summarised as follows:

- The national carbon budget to 2050 is approximately 4,588,000 kilotonnes CO_2e
- Hinckley & Bosworth's reasonable share of this, based on Hinckley & Bosworth's existing emissions as a share of UK-wide existing emissions, is **0.184%** (8,460 $ktCO_2$ e kilotonne CO_2e)
- The housing sector's reasonable share of that total Hinckley & Bosworth carbon budget, based on the housing sector's emissions as a share of the local area's total emissions in the last 10 years, is 23.5% (1,9826 $ktCO_2e$). This needs to cover all housing: both existing homes and new homes completed in the carbon budget period.[57]

The analysis then looked at the reasonably anticipated emissions of existing and new housing as follows:

- New housing in Hinckley & Bosworth (17,582 throughout the carbon budget period of 2025-2050 derived from housing growth trajectory figures provided by HBBC) if built to the anticipated FHS building regulations (or equivalent policy scenario based on the FHS to placate the Written Ministerial Statement 2023 as previously outlined), would emit : 49.7kilotonnes of emissions to 2050, of which 45.3 kilo tonnes from Part L homes built before 2027 and of which 4.4 kilo tonnes from FHS homes.
- Existing housing in Hinckley & Bosworth (52,758 Existing homes) currently emits 121.70$ktCO_2e$ per year (with 2025 grid carbon intensity). Its future emissions through to the net zero carbon target dates, taking into account the decarbonisation of the electricity grid, is 2,702.33 $ktCO_2e$ (2050). **This already exceeds the available total carbon budget for the net zero carbon date**. (see Figure 7).

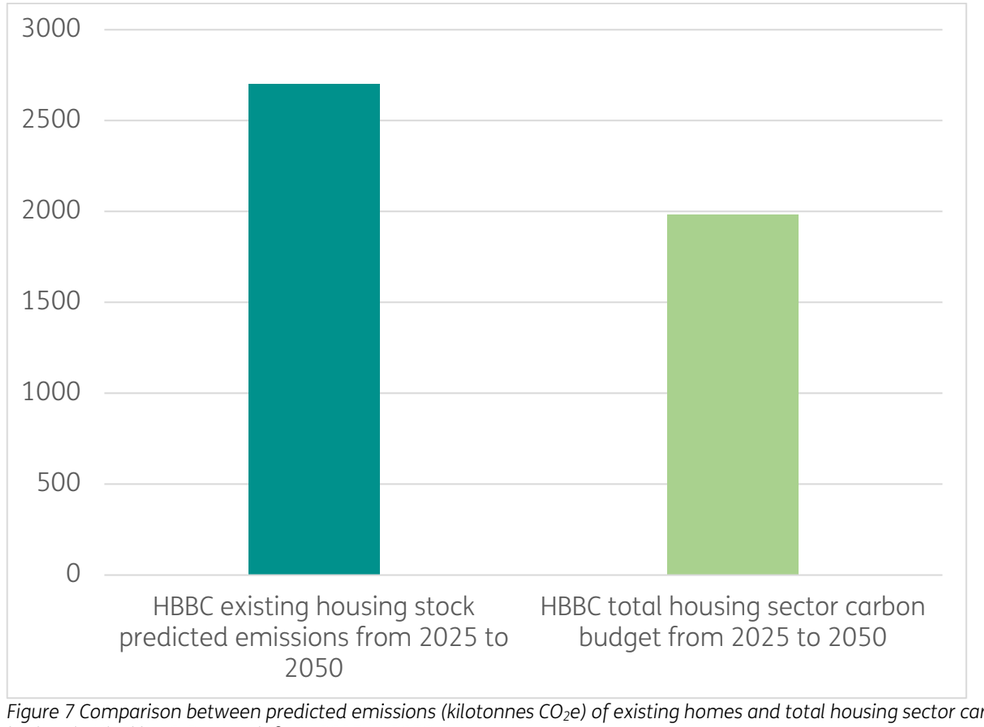

Figure 7 Comparison between predicted emissions (kilotonnes CO_2e) of existing homes and total housing sector carbon budget in Hinckley & Bosworth from 2025 to 2050

The above *prediction* did not assume that existing homes undergo any future retrofit work to improve existing stock energy efficiency or switch away from gas heat. Therefore, to free up some of this carbon budget to make room for new homes:

- The existing housing sector carbon budget for Hinckley & Bosworth was divided between existing and new homes based on their respective % of *predicted* emissions

The 'freed-up' carbon budget allocated for new homes is therefore reliant on the very optimistic assumption that the existing housing stock will in fact undergo further future improvements, such it stays within its available carbon budget. The available carbon budget for new housing was thus 35.86 $ktCO_2e$ to 2050. Unfortunately, the **predicted emissions of the new housing, in a policy scenario that follows the WMS2023 by aligning with the FHS, still exceed this** (Figure 8).

[57] Please note the units to express the carbon emissions above switches from megatonnes to kilotonnes because megatonne value would be too small to be expressed clearly. 1 megatonne = 1,000 kilotonnes.

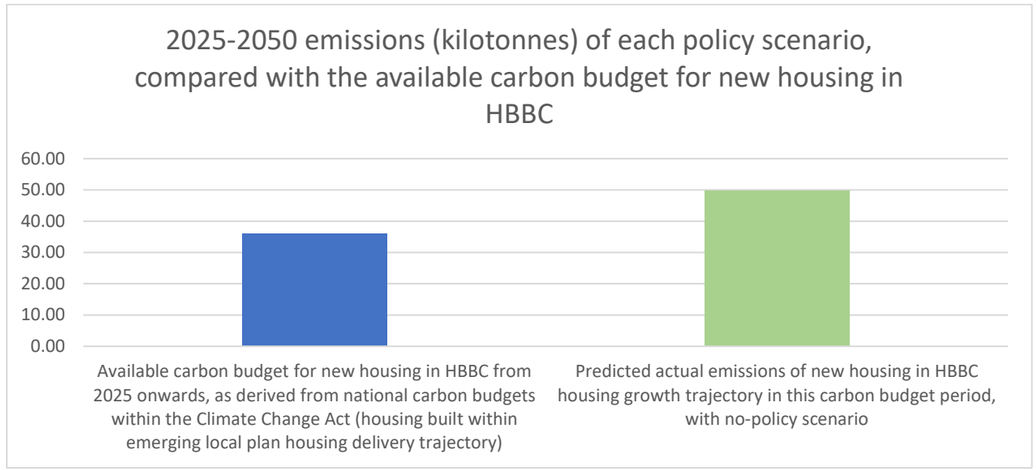

Figure 8 2025-2050 emissions (kilotonnes) of each policy scenario, compared with the available carbon budget for new housing in HBBC

By contrast, with a 'true net zero' policy like HBBC's proposed Policy Option 3, the emissions of new housing built after the expected introduction of FHS in 2027, would be negative because the policy would make the homes so energy efficient that their annual *total* energy use would be lower than on-site generation of zero-carbon electricity (and because they are so efficient, this required amount of renewable energy would often be less than that required by current building regulations or the anticipated FHS). This can only be achieved where the policy uses absolute energy efficiency metrics for *total* energy use calculated using an accurate methodology, not the WMS2023's stipulated metric of relative % reduction on TER, which does not cover total energy use and is calculated using SAP which is not an accurate prediction method.

Furthermore: As previously noted, the share of available total housing sector carbon budget in Hinckley & Bosworth that was allocated to *new* housing was reliant on the very optimistic assumption that the existing housing stock will in fact undergo further future improvements, such it stays within its available carbon budget. In fact the nationwide rate of energy efficiency improvement and clean heat rollout in existing homes has been far slower than it needs to be for the achievement of the current and future legislated carbon budgets. This problem is even worse in Hinckley & Bosworth, which has[xvi] a higher proportion of homes with fossil fuel central heating, and a lower proportion of homes with electric heating, than the average across England and Wales, thus lagging behind the already too-slow national rate of heat pump rollout. This presents a huge challenge for the prospect of Hinckley & Bosworth achieving a carbon emissions reduction trajectory compatible with the legislated national one.

Hence, it follows that **it is necessary to have a policy that ensures new homes have truly net zero emissions from *total* operational energy use**, so as to:

- Prevent them adding to the existing emissions burden
- Leave as much time and 'manoeuvring room' in the carbon budget as possible, for the existing housing stock to catch up to where it needs to be
- Thus ensure that the local plan does not fail to mitigate climate change to the extent necessary to be in line with the objectives and provisions of the climate change act as the NPPF instructs.

As previously noted in section 2.1.3, a policy based on the Building Regulations Part L 'TER' metric would be incapable of ensuring that buildings truly have net zero emissions – because of the limited scope of TER, the inaccuracy of its calculation method (SAP) to predict actual energy performance, and the fact that TER is not an energy efficiency metric and thus not suitable to make a building energy-efficient enough that its total energy use can be met on site with renewable energy (thus making the building net zero carbon).

Thus this exercise demonstrates the local circumstances that make it necessary to diverge from the WMS2023's stipulation of the TER metric and SAP calculation, in favour of the EUI metric and accurate calculation methods such as PHPP or CIBSE TM54.

The findings from this carbon budget exercise would also justify having a policy that actively welcomes energy retrofit improvements to existing building stock. However, such a policy on retrofit cannot be *relied upon* to deliver the necessary carbon reductions – because planning policy cannot *ensure* that these changes occur in existing buildings, as the plan can only exert influence through the granting or refusal of permissions where permissions are sought. HBBC local plan policy team decided against a retrofit policy because it could only be expressed in terms of a general encouragement to delivery energy performance improvements (at least unless there were extensive additional analysis to justify standards that could be applied across all planning applications relating to existing buildings).

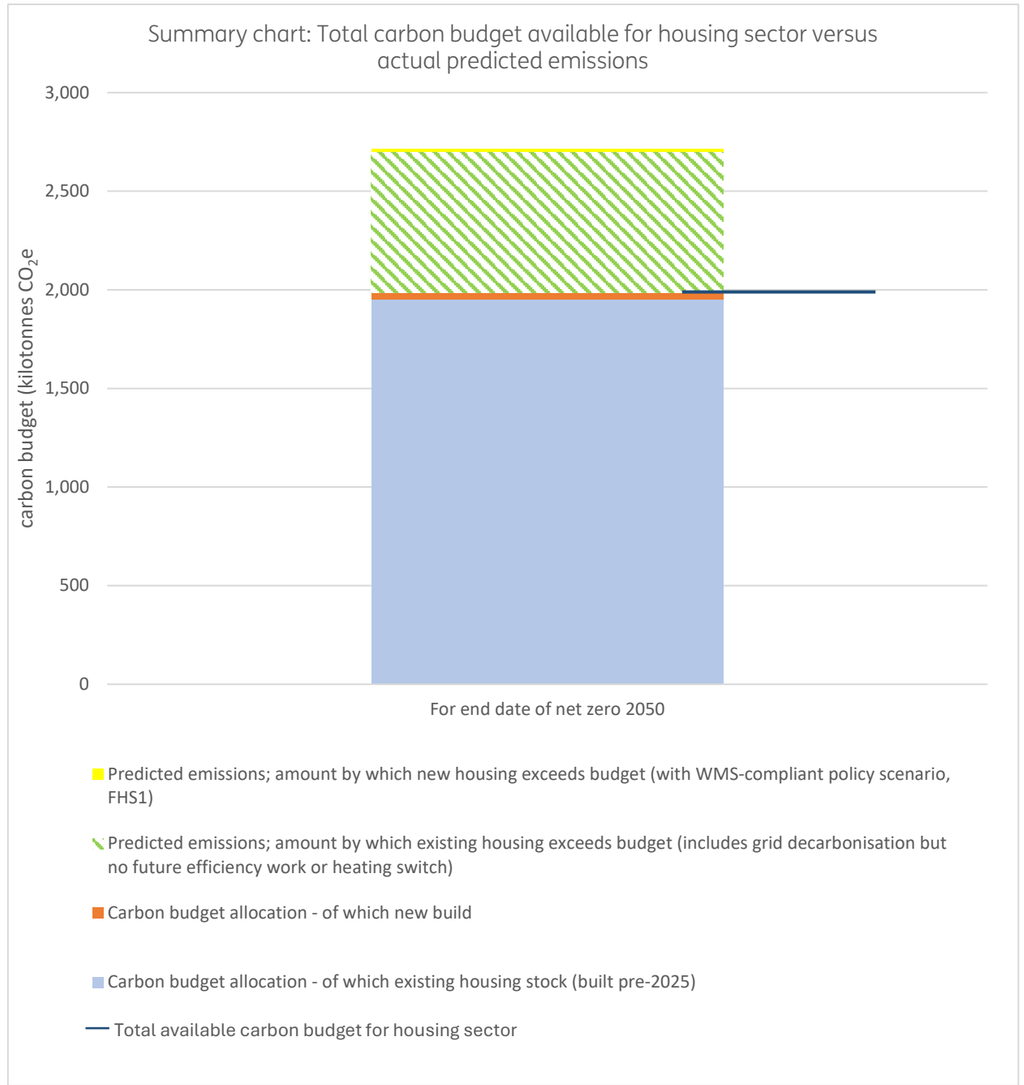

Figure 9: Summary of total carbon budget available for housing sector verses actual predicted emissions

5. Policy recommendations

It is recommended that HBBC adopts two policies that correspond to the proposed Policy Option 3, which seeks to best ensure utmost ease of policy implementation. These policies cover the following themes:

- Net zero (operational energy) new build domestic development
- Net zero (operational energy) new build non-domestic development
- Overheating in new buildings
- Renewable energy
- Embodied carbon

Policy A is divided into two parts; Part 1 focuses on quantitative requirements whilst Part 2 focuses on qualitative requirements that would not be impacted by potential changes in the NPPF. These policy clauses are intentionally presented as a combined policy options table to support evidence testing, rather than as a recommended final Local Plan drafting approach.

Table 5. Summary of proposed policy clauses (Policy A)

Policy A					
			Part 1		Part 2
Theme	sub-theme	clause	content	clause	content
Net zero (operational energy) new build	Total energy use	a.	≤ 40 kWh/m2/year for domestic development ≤ 30 kWh/m2/year for warehouse ≤ 55 kWh/m2/year for care home Other non-domestic building types not listed limited to ≤ 90 kWh/m2/year		
	Space heating demand	b.	≤ 20 kWh/m2/year (or <15kWh/m2/year in flats only) for domestic ≤ 16 kWh/m2/year for non-domestic		
	On-site renewable energy	c.	On-site annual renewable energy generation capacity to at least equal predicted annual total energy use.	a.	Large-scale development (50 residential units or more / 5000m2 non-domestic floorspace or more) should demonstrate that opportunities for on-site renewable energy infrastructure, such as solar PV canopies on car parks, have been explored.
			It must be demonstrated that the amount of on-site renewable energy generation equates to ≥75 kWh/m2building footprint/year for domestic and ≥55 kWh/m2building footprint/year for non-domestic development.		
			Where a building in a multi-building development cannot individually achieve the requirements, this shortfall is to be made up across other units on-site before energy offsetting is considered.		
			Large-scale development (50 residential units or more / 5000m2 non-domestic floorspace or more) should demonstrate that opportunities for on-site renewable energy infrastructure, such as solar PV canopies on car parks, have been explored.		

	Energy offsetting	d.	Only in exceptional circumstances and as a last resort where it is demonstrably unfeasible to achieve an on-site net zero energy balance, any annual on-site energy use not matched by on-site annual renewable energy generation is to be offset via S106 financial contribution.		
	Reduced performance gap	e.	Energy performance predictive calculations of units are to be completed using Passive House Planning Package, CIBSE TM54, or other method demonstrably proven to produce accurate predictions of total in-use energy, subject to local authority approval of the method. The energy performance of all units is to be calculated individually and each should comply with policy elements 1a and 1b. In exceptional circumstances, it may be considered acceptable to achieve a site-wide average that complies with policy elements 1a, subject to no individual dwelling exceeding an EUI of 60kWh/m2/yr and nondomestic unit exceeding 90 kWh/m2/year.	b.	An assured performance method must be implemented throughout all phases of construction to ensure operational energy in practice performs to predicted levels at the design stage.
	Smart energy systems			c.	Proposals should demonstrate how they have considered the difference (in scale and time) of renewable energy generation and the on-site energy demand, with a view to maximising on-site consumption of energy generated on site and minimising the need for wider grid infrastructure reinforcement. Where the on-site renewable energy generation peak is not expected to coincide with sufficient energy demand, resulting in a need to export or waste significant amounts of energy, proposals should demonstrate how they have explored scope for energy storage and/or smart distribution systems to optimise on-site or local consumption of the renewable energy (or waste energy) that is generated by the site, and where appropriate that they have integrated these to optimise these carbon- and energy-saving benefits and minimise the need for grid reinforcements. This may include smart local grids, energy sharing, energy storage and demand-side response, and/or solutions that combine elements of the above.
	Post-occupancy evaluation			d.	Large-scale development (50 residential units or more / 5000m2 non-domestic floorspace or more) is to monitor and report total energy use and renewable energy generation values on an annual basis. An outline plan for the implementation of this should be submitted with the planning application. The monitored in-use data are to be reported to the local planning authority for 5 years upon occupation.

Overheating in new buildings	Cooling hierarchy			e.	Demonstrate that overheating risk measures have been selected in accordance with the cooling hierarchy: 1. Minimise internal heat generation through energy efficient design. 2. Reduce the amount of heat entering the building in summer using: a. Building orientation b. Shading c. Albedo d. Fenestration and insulation 3. Manage heat within the building through exposed internal thermal mass and high ceilings. 4. Passive ventilation. 5. Mechanical ventilation. 6. Active cooling measures.
	Overheating assessment	f.	Domestic development to complete CIBSE TM59 overheating assessment as their route to compliance with Building Regulations Part O. The simplified Part O route will not be considered acceptable.		
			Non-domestic development to complete CIBSE TM52 overheating assessment.		
Renewable energy	Smart site allocation			f.	Allocate sites for renewable energy that supports a balanced energy system resilient to conditions on an annual basis, which should include storage and not be reliant on one generation technology.
					Proposals for large-scale renewable energy development (≤ 100MW) are encouraged to choose a site that is well supported by sufficient grid capacity.
					Support will be given to proposals for standalone electrical grid capacity upgrades, local smart grids, and development of grid-connected energy storage especially if co-located with large-scale renewable energy generation installations.
	Energy storage	g.	Proposals for standalone renewable energy generation are encouraged to provide at least an additional 10% of energy storage (e.g. battery storage) of the overall energy generation.	g.	Where permission is needed, support will be given to proposals that form part of the transition to a net zero carbon borough and county. This could include energy storage facilities (e.g. battery and thermal storage) and upgraded or new electricity facilities.
	Co-benefits	h.	Large-scale proposals (≤ 100MW) are encouraged to demonstrate >10% improvement on biodiversity net gain.	h.	Positive weight will be given to schemes led by the community and community energy groups.
					All proposals are to undertake community engagement sessions with the local Parish community to mitigate any potential impacts to the community throughout site development.

					All proposals are to demonstrate how the renewable energy generation site can be restored to its original state following removal of technologies and mitigate any biodiversity loss.
					Proposals will be subject to a condition requiring the submission of an end-of-life removal scheme within 1 year of the scheme becoming non-operational and the implementation of such a scheme within 1 year of scheme approval.
					The removal scheme should demonstrate how any biodiversity net gain that has arisen on the site will be protected or enhanced further, and how materials to be removed would, to a practical degree, be re-used or recycled.
					Where feasible, proposals should incorporate trees, green roofs, green walls and other nature-based solutions to reduce local temperatures and enhance climate resilience.
	Grid reinforcement			i.	All development for renewable energy generation, or development that includes renewable energy generation, is to demonstrate how options for energy storage, smart grids, and energy sharing networks have been explored to reduce the need for grid capacity upgrades.
	Refusal of fossil fuels			j.	Any applications for exploration and extraction of fossil fuels to be refused.
	Support for innovative energy generation			k.	Support will be given to innovative renewable energy generation approaches, such as 'agrivoltaics' – the combined use of land for solar PV generation and agriculture.
					Although these sites may not specifically be identified as suitable in land sensitivity assessments, they should be not refused without an appropriate individual assessment of land suitability based upon the specific innovative use of land.
	Protecting infrastructure			l.	Any development should not significantly harm:
					i. Technical performance of any existing or approved renewable energy facility.
					ii. Potential for optimisation of strategic renewable energy installations.
					iii. Availability of the resource, where the operation is dependent on uninterrupted flow of energy to the installation.
	Mitigation of negative impacts			m.	Support will be given to proposals that demonstrate mitigation measures are implemented for:
					i. Scale, siting and design and impacts on landscape character, visual amenity, biodiversity, flood risk, townscape, heritage, historic landscape and highway/rail safety.
					ii. Impacts on aviation and defence navigation systems/communications.

					iii. Impacts on the amenity of sensitive neighbouring uses (local residents) included issues such as noise, dust, odour, shadow flicker, air quality and traffic.

Table 6. Summary of proposed policy clauses (Policy B)

Policy B			
Topic	sub-topic	clause	content
Embodied Carbon	Embodied carbon reporting	a.	All major new domestic and non-domestic developments are to complete a whole-life carbon assessment in accordance with RICS Whole Life Carbon Assessment guidance.
	Limiting embodied carbon	b.	Large-scale new domestic (50 and above units) and non-domestic (5000m2 commercial floorspace) development to limit embodied carbon (modules A1 – A5) to: i. houses: 237 $kgCO_2e/m2$ GIA ii. low rise flats: 362 $kgCO_2e/m2$ GIA iii. retail: 340 $kgCO_2e/m2$ GIA iv. primary school: 514 $kgCO_2e/m2$ GIA v. offices: 543 $kgCO_2e/m2$ GIA vi. warehouse: 377 $kgCO_2e/m2$ GIA For all other archetypes, embodied carbon (modules A1-A5) should be limited to 900 $kgCO_2e/m2$ GIA.
		c.	All new development is strongly encouraged to achieve LETI 2020 Design Guide embodied carbon targets (modules A1 – A5).
	Embodied carbon offsetting	d.	Offsetting should not be an option for embodied carbon with current requirements.
	Building end-of-life	e.	All new buildings are to be designed to enable easy material re-use and disassembly, subsequently reducing the need for end-of-life demolition.
	Demolition audits	f.	All major development that contains existing buildings/structures to carry out a pre-redevelopment and/or pre-demolition audit, following a well-established industry best practice method (e.g. BRE).
	Construction waste	g.	Construction waste on major development to achieve the following: i. Recycling rate: >90% ii. Diversion from landfill: >99%

The following section assesses each of the above policy recommendations based on the following:

- Links to other policy
- Scope for future improvements in next local plan review
- Alignment with national policy
- Feasibility and costs overview
- Implementation considerations
- Development industry capability to deliver policies
- Development Management capability to assess policies

Clauses assigned to Policy 1 Part 1 are highlighted in light orange; clauses assigned to Policy 1 Part B are highlighted in light blue.

5.1 A. Net zero (operational energy) new build domestic development

Table 7. Summary of policy clauses for net zero (operational energy) new build domestic development

A1.Total energy use		≤ 40 kWh/m2/year
A2. Space heating demand		≤ 20 kWh/m2/year (or <15kWh/m2/year in flats only).
		The use of fossil fuels and connection to the gas grid will not be considered acceptable.
A3. On-site renewable energy		On-site annual renewable energy generation capacity to at least equal predicted annual total energy use.
		It must be demonstrated that the amount of on-site renewable energy generation equates to ≥75 kWh/m2building footprint/year.
		Where a building in a multi-building development cannot individually achieve the requirements of A3, this shortfall is to be made up across other units on-site before energy offsetting (A4) is considered.
		Large-scale development (50 residential units or more) should demonstrate that opportunities for on-site renewable energy infrastructure, such as solar PV canopies on car parks, have been explored.
A4. Energy offsetting		Only in exceptional circumstances and as a last resort where it is demonstrably unfeasible to achieve an on-site net zero energy balance, any annual on-site energy use not matched by on-site annual renewable energy generation is to be offset via S106 financial contribution.
A5. Reduced performance gap		Energy performance predictive calculations of domestic units are to be completed using Passive House Planning Package (or other method demonstrably proven to produce accurate predictions of total in-use energy, subject to local authority approval of the method). The energy performance of all domestic units is to be calculated individually and each should comply with policy elements A1 and A2. In exceptional circumstances, it may be considered acceptable to achieve a site-wide average that complies with policy elements A1 and A2, subject to no individual dwelling exceeding an EUI of 60kWh/m2/yr.
		An assured performance method must be implemented throughout all phases of construction to ensure operational energy in practice performs to predicted levels at the design stage.
A6. Smart energy systems		Proposals should demonstrate how they have considered the difference (in scale and time) of renewable energy generation and the on-site energy demand, with a view to maximising on-site consumption of energy generated on site and minimising the need for wider grid infrastructure reinforcement.
		Where the on-site renewable energy generation peak is not expected to coincide with sufficient energy demand, resulting in a need to export or waste significant amounts of energy, proposals should demonstrate how they have explored scope for energy storage and/or smart distribution systems to optimise on-site or local consumption of the renewable energy (or waste energy) that is generated by the site, and where appropriate that they have integrated these to optimise these carbon- and energy-saving benefits and minimise the need for grid reinforcements. This may include smart local grids, energy sharing, energy storage and demand-side response, and/or solutions that combine elements of the above.
A7. Post-occupancy evaluation		Large-scale development (over 50 units) is to monitor and report total energy use and renewable energy generation values on an annual basis. An outline plan for the implementation of this should be submitted with the planning application. The monitored in-use data are to be reported to the local planning authority for 5 years upon occupation.

Policy elements A1, A2 and A3 are to be addressed at design and post-completion stages, to ensure that the development has been built to intended standards. Post-completion resubmission of energy performance calculations, informed by the relevant tests to systems and fabric, should be required as a condition as part of the planning application process.

These clauses on domestic building standards have been developed with the carbon budget analysis in mind (as outlined in Section 4.3). Hinckley & Bosworth has an available carbon budget of 35.86 $ktCO_2e$; however, following Building Regulations alone (i.e. a WMS-compliant Future Homes Standard) would result in emissions of 49.7 $ktCO_2e$, exceeding the budget by approximately 39%.

Links to other policies

Policy A2 is linked to C1 and C2 due to the link between improved space heating demand standards and increased overheating risk.

Policies A3 and A6 are linked to the suite of renewable energy policies, as any on-site renewable energy development will form part of the larger energy network of the area. Policy A1 is also linked to wider renewable energy policies, particularly F4 as reduced energy consumption will demand less renewable energy from the grid in cases where an on-site net zero energy balance is not achieved.

Scope for future improvements

Policies A1 and A2 could be further improved in subsequent local plans, however this may not be feasible across every typology. Improvements to A1 would however make compliance with A3 easier since less renewable energy supply would be needed.

Alignment with national policy

All of these policies are aligned with national policy since their implementation works towards achieving the legally-binding UK target of net zero by 2050, as set out in the Climate Change Act 2008, and carbon budgets subsequently legislated under the aegis of that Act. These associated carbon budgets are linked to the Climate Change Committee's Balanced Pathway to Net Zero report, which in turn is supported by analysis[58] that sets out that all new buildings must be net zero by 2025 have a space heating demand of 15-20 kWh/m^2/year.

The Planning and Energy Act 2008 sets out that local standards for energy efficiency in new homes are able to exceed those set in Building Regulations.

WMS 2023 has been reviewed as a material consideration in the development of this policy approach. As set out in detail in Section 2.1.3, while the WMS establishes expectations regarding alignment with national standards, the locally derived carbon budget evidence demonstrates that reliance on a WMS-compliant FHS alone would result in emissions exceeding the available carbon budget. On this basis, the proposed policy represents a justified and proportionate departure, necessary to ensure consistency with the HBBC's climate objectives and statutory duties.

The potential impact of December 2025 NPPF consultation package is set out in Appendix 1: Implications of December 2025 NPPF consultation. This appendix should be read as contextual background only, as the Local Plan will be examined against the adopted NPPF (2024).

Feasibility and costs overview

Please refer to sections 6 and 8.

Implementation considerations

Due to the high ambition of these policies, it is vital that specific information for policy compliance must be set such as:

- Examples of assured performance
- Acceptable scenarios where exceptional circumstances are valid for A3 and A4
- Methodologies and assumptions for energy performance calculations

Information on the mechanisms of energy offsetting for A5 will need to be included in a planning document that addresses planning obligations.

For A3, renewable energy installations will need to be accompanied with calculations of expected outputs required under the policy by an MCS certifier.

Industry capability

With appropriate engagement with developers operating in the area throughout the local plan process, the local development industry should be well prepared to deliver on these policies. The policies require additional levels of skill to be applied through design and construction phases but do not introduce any new skills not currently known and utilised by developers.

The standard of insulation and glazing typically required to meet the space heating demand requirement (A2) are similar to those set out in the indicative specification for the Future Homes Standard (FHS) (although airtightness is likely to need some improvement compared to the FHS). Additionally, the total energy use intensity limit (A1) is strongly linked to the use of a heat pump, which equally is part of the indicative FHS specification. Therefore, the development industry should be well prepared to deliver on A3, particularly as FHS will come into force in March 2027.

[58] https://www.theccc.org.uk/publication/uk-housing-fit-for-the-future/

The wider development industry needs to upskill to deliver truly net zero buildings, particularly in terms of predictive energy modelling and high energy performance buildings in-use (rather than just predicted). Delivery of buildings subject to these net zero policies requires quality construction standards to mitigate the performance gap, which the implementation of the A-suite of policies will work towards improving at a larger scale.

Development Management capability

The capability of Development Management officers to accurately assess these policies is reliant on the degree of training and guidance documents available. It is essential that officers have guidance on hand to assess policies against to ensure that compliance is achieved in accordance with methodologies set out in subsequent guidance. Specific upskilling of at least one officer on climate change policies to gain a technical understanding will greatly assist the overall ability of the team to assess policy compliance.

5.2 B. Net zero (operational energy) new build non-domestic development

Table 8. Summary of policy clauses for net zero (operational energy) new build non-domestic development

B1. Total energy use	1. Warehouse: ≤ 30 kWh/m2/year 2. Carehome: ≤ 55 kWh/m2/year
	Other building types not listed limited to ≤ 90 kWh/m2/year
B2. Space heating demand	≤ 16 kWh/m2/year
	The use of fossil fuels and connection to the gas grid will not be considered acceptable.
B3. On-site renewable energy	On-site annual renewable energy generation capacity to at least equal annual total energy use.
	It must be demonstrated that the amount of on-site renewable energy generation equates to ≥55 kWh/m2building footprint/year.
	Where a building in a multi-building development cannot individually achieve the requirements of B3, this shortfall is to be made up across other units on-site before energy offsetting (B4) is considered.
	Large-scale development (5000m2 non-domestic floorspace or more) should demonstrate that opportunities for on-site renewable energy infrastructure, such as solar PV canopies on car parks, have been explored.
B4. Energy offsetting	Only in exceptional circumstances and as a last resort where it is demonstrably unfeasible to achieve an on-site net zero energy balance, any annual on-site energy use not matched by on-site annual renewable energy generation is to be offset via S106 financial contribution.
B5. Reduced performance gap	Energy performance calculations of domestic units are to be completed using Passive House Planning Package, CIBSE TM54, or other method demonstrably proven to produce accurate predictions of total in-use energy (subject to local authority approval of the method). The energy performance of all non-domestic units is to be calculated individually and each should comply with policy elements B1 and B2. In exceptional circumstances, it may be considered acceptable to achieve a site-wide average that complies with policy elements B1 and B2, subject to no individual unit exceeding 90 kWh/m2/year.
	An assured performance method must be implemented throughout all phases of construction to ensure operational energy in practice performs to predicted levels at the design stage.
B6. Smart energy systems	Proposals should demonstrate how they have considered the difference (in scale and time) of renewable energy generation and the on-site energy demand, with a view to maximising on-site consumption of energy generated on site and minimising the need for wider grid infrastructure reinforcement.
	Where the on-site renewable energy generation peak is not expected to coincide with sufficient energy demand, resulting in a need to export or waste significant amounts of energy, proposals should demonstrate how they have explored scope for energy storage and/or smart distribution systems to optimise on-site or local consumption of the renewable energy (or waste energy) that is generated by the site, and where appropriate that they have integrated these to optimise these carbon- and energy-saving benefits and minimise the need for grid reinforcements. This may include smart local grids, energy sharing, energy storage and demand-side response, and/or solutions that combine elements of the above.
B7. Post-occupancy evaluation	Large-scale development (5,000m2 non-domestic floor space or more) is to monitor and report total energy use and renewable energy generation values on an annual basis. These are to be reported to the local planning authority for 5 years upon occupation.

Policy elements B1, B2 and B3 are to be addressed at design and post-completion stages, to ensure that the development has been built to intended standards. Post-completion resubmission of energy performance calculations, informed by the relevant tests to systems and fabric, should be required as a condition as part of the planning application process.

Links to other policies

Policy B2 is linked to C1 and C2 due to the link between improved space heating demand standards and increased overheating risk.

Policies B3 and B6 are linked to the suite of renewable energy policies, as any on-site renewable energy development will form part of the larger energy network of the area. Policy B1 is also linked to wider renewable energy policies, particularly D4 as reduced energy consumption will demand less renewable energy from the grid in cases where an on-site net zero energy balance is not achieved.

Scope for future improvements

Policies B1 and B2 could be further improved in subsequent local plans, however this may not be feasible across every typology. Improvements to B1 would however make compliance with B3 easier since less energy supply is needed.

Alignment with national policy

All of these policies are aligned with national policy since their implementation works towards achieving the legally-binding UK target of net zero by 2050, as set out in the Climate Change Act 2008, and carbon budgets subsequently legislated under the aegis of that Act. These associated carbon budgets are linked to the Climate Change Committee's Balanced Pathway to Net Zero in the Sixth Carbon Budget report[59], which sets out that all new buildings should be zero carbon from 2025, with high levels of energy efficiency and low-carbon heat. It also found that non-domestic buildings should phase out high-carbon fossil fuel boilers no later than 2026, and phase out gas boilers in 2030-33, less than 10 years from today (2023), while boilers have a typical lifetime of 15 years. Therefore, new buildings today should not have these, to avoid the need for expensive disruptive retrofit less than 10 years after completion which would also waste embodied carbon (even if the need for 'net zero carbon new builds from 2025' did not already effectively rule out fossil fuel boilers). The policy supports these targets by prohibiting fossil fuel connection and by the EUI targets, which mandate a heating technology similarly efficient to a heat pump (which a fossil boiler cannot meet).

Feasibility and costs overview

Please refer to sections 6 and 8

Implementation considerations

Due to the high ambition of these policies, it is vital that supplementary guidance is provided for the benefit of Development Management officers and the development industry. This is particularly important for B1, B2, B4 and B5 because specific information for policy compliance must be set such as:

- Examples of assured performance
- Acceptable scenarios where exceptional circumstances are valid for B3 and B4
- Methodologies and assumptions for energy performance calculations

Information on the mechanisms of energy offsetting for A5 will need to be included in a planning document that addresses planning obligations.

For B3, renewable energy installations will need to be accompanied with calculations of expected outputs required under the policy by an MCS certifier.

The wider development industry needs to upskill to deliver truly net zero buildings, particularly in terms of predictive energy modelling and high energy performance buildings. Delivery of buildings subject to these net zero policies requires quality construction standards to mitigate the performance gap, which the implementation of the A-suite of policies will work towards improving at a larger scale.

Industry capability

With appropriate engagement with developers operating in the area throughout the local plan process, the local development industry should be well prepared to deliver on these policies. The policies require additional levels of skill to be applied through design and construction phases but do not introduce any new skills not currently known and utilised by developers.

The standard of insulation and glazing efficiency typically required to meet the space heating demand requirement (B2) is similar to those set out in the Future Homes Standard (FHS). Therefore, the development industry should be well prepared to deliver on B3, particularly as FHS will come into force in March 2027.

Development Management capability

The capability of Development Management officers to accurately assess these policies is reliant on the degree of training and guidance documents available. It is essential that officers have guidance on hand to assess policies against to ensure that compliance is achieved in accordance with methodologies set out in subsequent guidance. Specific upskilling of at least one officer on climate change policies to gain a technical understanding will greatly assist the overall ability of the team to assess policy compliance.

[59] https://www.theccc.org.uk/wp-content/uploads/2020/12/The-Sixth-Carbon-Budget-The-UKs-path-to-Net-Zero.pdf

5.3 C. Overheating in new buildings

Table 9. Summary of policy clauses for overheating in new buildings

C1. Cooling hierarchy	Demonstrate that overheating risk measures have been selected in accordance with the cooling hierarchy: 1. Minimise internal heat generation through energy efficient design. 2. Reduce the amount of heat entering the building in summer using: a. Building orientation b. Shading c. Albedo d. Fenestration and insulation 3. Manage heat within the building through exposed internal thermal mass and high ceilings. 4. Passive ventilation. 5. Mechanical ventilation. 6. Active cooling measures.
C2. Overheating assessment	Residential development to complete CIBSE TM59 overheating assessment as their route to compliance with Building Regulations Part O. The simplified Part O route will not be considered acceptable.
	Non-residential development to complete CIBSE TM52 overheating assessment.

Links to other policies

Policies C1 and C2 are linked to A1, A2, B1 and B2 due to the link between improved space heating demand standards and increased overheating risk. Overheating policy requirements should be considered holistically with space heating demand requirements since improved air tightness and fabric performance can increase overheating risk without careful design considerations. Additionally, measures to reduce cooling demand through passive overheating measures will also help to keep energy demand low, by avoiding the need for active cooling and excess use of mechanical ventilation.

Scope for future improvements

None as numerical targets are not given.

Alignment with national policy

The requirement to integrate the cooling hierarchy into the design of new development is consistent with national policy and complements the Building Regulations approach, including the Written Ministerial Statement (WMS) UIN HCWS495 (15 December 2021), which emphasises avoiding duplication of Building Regulations within Local Plan policy. In this context, C1 and C2 do not seek to replicate Part O, but instead clarify the Council's expectations for how overheating risk should be assessed and managed, particularly for larger and more complex schemes.

Part O sets a minimum standard for mitigating overheating risk and provides two compliance routes: a simplified method and a dynamic modelling route. While the simplified method can be applied to many developments, it has inherent limitations in how accurately it represents the combined effects of local context, design choices and building operation, and it may not provide sufficient confidence for more complex proposals. By contrast, the dynamic modelling route, using approaches aligned with CIBSE TM59 for domestic buildings and TM52 for non-domestic buildings, offers a more robust assessment of overheating risk, supporting earlier identification of design vulnerabilities and enabling mitigation to be embedded efficiently into the design process.

A forward-looking approach is also justified by the direction of travel of climate risk. UKCP18 projections indicate that hotter summers and more frequent extreme heat events are likely over the plan period, increasing overheating risk in both new and existing buildings. Against this backdrop, the policy encourages applicants to adopt assessment and design approaches that are resilient to future conditions rather than optimised solely for historic climate baselines.

Finally, the policy recognises the interaction between high fabric efficiency and overheating. While improved fabric performance and airtightness are essential for reducing operational energy use, they can also increase the risk of overheating if solar gains and internal heat gains are not properly managed and if purge ventilation and shading are not designed in from the outset. The cooling hierarchy provides a structured method for resolving this potential trade-off by prioritising passive and low-energy measures such as orientation, shading, and appropriate glazing strategies before mechanical solutions. The potential impact of December 2025 NPPF consultation package is set out in Appendix 1. This appendix should be read as contextual background only, as the Local Plan will be examined against the adopted NPPF (2024).

Feasibility and costs overview

No feasibility or cost implications.

Implementation considerations

Specific information on overheating assessments should be set out in future guidance.

Although mechanical ventilation is listed down the cooling hierarchy as part of C1, the use of mechanical ventilation with heat recovery (MVHR) should not be viewed negatively as this may assist compliance with operational energy policies. However, MVHR should have the ability to bypass the heat recovery function in periods of warmer weather in order to support the overheating risk mitigation goal.

Industry capability

Overheating assessments are a requirement of Building Regulations Part O (for residential), and is a common measure performed in the design of good-quality non-residential new buildings especially where a BREEAM rating is sought. Therefore, it should not inflict any significant additional burden on the development industry to deliver on C1 and C2.

Development Management capability

The cooling hierarchy is simple to follow and assess to grant policy compliance, assuming some officers have had training carried out and have guidance to refer to. Guidance on how to assess CIBSE overheating assessments will make policy compliance simple to grant or not.

5.4 D. Renewable energy

Table 10. Summary of policy clauses for renewable energy

D1. Smart site allocation	Allocate sites for renewable energy that supports a balanced energy system resilient to conditions on an annual basis, which should include storage and not be reliant on one generation technology.
	Proposals for large-scale renewable energy development (≤ 100MW) are encouraged to choose a site that is well supported by sufficient grid capacity.
	Support will be given to proposals for standalone electrical grid capacity upgrades, local smart grids, and development of grid-connected energy storage especially if co-located with large-scale renewable energy generation installations.
D2. Energy storage	Where permission is needed, support will be given to proposals that form part of the transition to a net zero carbon borough and county. This could include energy storage facilities (e.g. battery and thermal storage) and upgraded or new electricity facilities.
	Proposals for renewable energy generation are encouraged to provide at least an additional 10% of energy storage (e.g. battery storage) of the overall energy generation.
D3. Co-benefits	Positive weight will be given to schemes led by the community and community energy groups.
	All proposals are to undertake community engagement sessions with the local Parish community to mitigate any potential impacts to the community throughout site development.
	Large-scale proposals above 100MW are encouraged to demonstrate >10% improvement on biodiversity net gain.
	All proposals are to demonstrate how the renewable energy generation site can be restored to its original state following removal of technologies and mitigate any biodiversity loss.
	Proposals will be subject to a condition requiring the submission of an end-of-life removal scheme within 1 year of the scheme becoming non-operational and the implementation of such a scheme within 1 year of scheme approval.
	The removal scheme should demonstrate how any biodiversity net gain that has arisen on the site will be protected or enhanced further, and how materials to be removed would, to a practical degree, be re-used or recycled.
	Where feasible, proposals should incorporate trees, green roofs, green walls and other nature-based solutions to reduce local temperatures and enhance climate resilience.
D4. Grid reinforcement	All development for renewable energy generation, or development that includes renewable energy generation, is to demonstrate how options for energy storage, smart grids, and energy sharing networks have been explored to reduce the need for grid capacity upgrades.
D5. Refusal of fossil fuels	Any applications for exploration and extraction of fossil fuels to be refused.
D6. Support for innovative energy generation	Support will be given to innovative renewable energy generation approaches, such as 'agrivoltaics' – the combined use of land for solar PV generation and agriculture.
	Although these sites may not specifically be identified as suitable in land sensitivity assessments, they should be not refused without an appropriate individual assessment of land suitability based upon the specific innovative use of land.
D7. Protecting infrastructure	Any development should not significantly harm:
	a. Technical performance of any existing or approved renewable energy facility.
	b. Potential for optimisation of strategic renewable energy installations.
	c. Availability of the resource, where the operation is dependent on uninterrupted flow of energy to the installation.
D8. Mitigation of negative impacts	Support will be given to proposals that demonstrate mitigation measures are implemented for:
	a. Scale, siting and design and impacts on landscape character, visual amenity, biodiversity, flood risk, townscape, heritage, historic landscape and highway/rail safety.
	b. Impacts on aviation and defence navigation systems/communications.
	c. Impacts on the amenity of sensitive neighbouring uses (local residents) included issues such as noise, dust, odour, shadow flicker, air quality and traffic.

Links to other policies

Due to the requirement for new residential and non-residential buildings to have an on-site net zero energy balance, for which renewable energy generation is crucial, policies D1 and D4 are inherently linked to A1 – A4, A6, B1 – B4 and B6.

Net zero new buildings can reduce additional stresses of new development on grid capacity (D4), particularly if battery storage is integrated on-site. Grid infrastructure reinforcement is critical for net zero development, primarily because as the significant amount of on-site renewable energy generation will be connected to the electricity grid. Therefore, mitigating energy consumption through A1 and B1 reduces stress on the grid.

Offsetting policies A4 and B4 could be benefited by successful implementation of D1, since having sites identified for renewable energy generation reduces time lags for large-scale energy offsetting projects.

Scope for future improvements

No scope for specific improvement on policies as numerical requirements are not set, but improvements are possible on the delivery and information to support policy development and implementation.

Alignment with national policy

Renewable energy is a key component towards the fulfilment of the Climate Change Act 2008 and associated 2050 net zero target. Therefore, if the UK it to successfully transition to net zero, renewable energy opportunities must be maximised.

National policy supports growth of renewable energy generation and specifically requires that sites are allocated to identify suitable areas for installations. Task 6 of this evidence base will fulfil this requirement to enable development of onshore wind schemes. The biodiversity net gain requirement follows the same approach as now applied at national scale, although national policy sets a lower standard of 10%.

The potential impact of the draft NPPF, published for consultation in December 2025, is set out in Appendix 1: Implications of December 2025 NPPF consultation. This appendix should be read as contextual background only, as the Local Plan will be examined against the adopted NPPF (2024).

Feasibility and costs overview

No feasibility or cost implications.

Implementation considerations

Supplementary guidance is essential to the delivery of these policies to set expectations of what is required from developers to demonstrate policy compliance, particularly D2, D3, and D4.

Requirements for developers on community benefit and engagement should involve HBBC planning officer participation and members from the local town or parish council. Similarly, ecology officers should be heavily involved in assessments to demonstrate biodiversity net gain.

Industry capability

All the policy elements set out involve existing themes within the renewable energy development industry and should be deliverable. Biodiversity net gain has been introduced as a national standard and will therefore be a familiar concept to the industry by the time of policy adoption.

Please also refer to section 1.2.1, which summarises Hinckley & Bosworth's historic solar PV deployment trajectory and provides Borough-specific evidence for why a proactive planning framework is needed rather than reliance on market delivery alone.

Development Management capability

Due to the wide-ranging potential impacts of renewable energy generation and storage development, technical expertise from various internal officers will be necessary to appropriately assess policy compliance. Input will be needed from officers who have expertise in:

a. Biodiversity/ecology
b. Highways
c. Landscape
d. Heritage/conservation

Policy compliance is likely to be determined on a lengthy process of liaison with the renewable energy developer and dependent on the degree of cooperation with council officers, particularly when addressing community-based implications.

5.5 E. Embodied carbon and waste

Table 11. Summary of policy clauses for embodied carbon and waste

D1. Embodied carbon reporting	All major new domestic and non-domestic developments are to complete a whole-life carbon assessment in accordance with RICS Whole Life Carbon Assessment guidance.
D2. Limiting embodied carbon	All new development is strongly encouraged to achieve LETI 2020 Design Guide embodied carbon targets (modules A1 – A5).
D3. Building end-of-life	All new buildings are to be designed to enable easy material re-use and disassembly, subsequently reducing the need for end-of-life demolition.
D4. Demolition audits	All major development that contains existing buildings/structures to carry out a pre-redevelopment and/or pre-demolition audit, following a well-established industry best practice method (e.g. BRE).
D5. Construction waste	Construction waste on major development to achieve the following:
	Recycling rate: >90%
	Diversion from landfill: >99%

Information demonstrating compliance with D2 is to be submitted at the planning application stage and post-completion stage to verify that as-built embodied carbon quantities remain compliant.

Links to other policies

There are limited links to other policies but opportunities to address embodied carbon and operational energy should be explored holistically to achieve carbon savings across both scopes.

Scope for future improvements

There is significant scope for future improvements for embodied carbon and waste policies. In particular, numerical targets should be introduced for D2 in future local plan reviews as embodied carbon policy becomes integrated into local and national policy. As policy is implemented on embodied carbon, industry will become better placed to deliver on ambitious policy requirements and move towards net zero embodied carbon emissions.

Alignment with national policy

Limited alignment with national policy as embodied carbon is not part of Building Regulations currently. While Private Members' Bills related to the industry proposal of Part Z have been tabled in Parliament, embodied/whole-life carbon requirements have not yet been incorporated into the Building Regulations. It is therefore unlikely that national regulation equivalent to 'Part Z' will be in place before HBBC Local Plan is adopted.

The potential impact of the draft NPPF, published for consultation in December 2025, is set out in Appendix 1: Implications of December 2025 NPPF consultation. This appendix should be read as contextual background only, as the Local Plan will be examined against the adopted NPPF (2024).

Feasibility and costs overview

Embodied carbon requirements can introduce additional capital cost in the current market, as they often require early design decisions and material substitutions that are not yet standardised across all sectors and supply chains. The South & Vale evidence base[60] includes useful testing of "reduced embodied carbon" specifications alongside operational net zero variants, including consideration of lower-uplift approaches that align with LETI benchmarks. However, as this evidence is not HBBC-specific, and given the absence of a locally tailored embodied carbon cost and feasibility assessment for the archetypes modelled in this study, this report does not propose any specific embodied carbon limits or benchmark thresholds at this stage. HBBC may nevertheless wish to retain the South & Vale evidence as a reference point, and to revisit the case for embodied carbon reporting and/or limits in a future policy iteration if additional HBBC-specific testing is undertaken.

Implementation considerations

Information and requirements on embodied carbon assessments will need to be set out in supplementary policy guidance to enable developers to sufficiently demonstrate policy compliance. Methodologies and the scope of embodied carbon assessment should be clarified, alongside other potential implications such as third-party verification.

Similarly, acceptable methodologies to comply with D5 should be set out in guidance.

[60] https://www.southandvale.gov.uk/app/uploads/2024/09/NZC-Task-3-visual-accessible.pdf

Industry capability

The embodied carbon requirement as part of D2 is an achievable target for developers to achieve and acts as a backstop target to prevent worst-offending developments from excessive embodied carbon emissions. The encouraged targets are more challenging to achieve for the development industry yet are still achievable provided responsible and appropriate decision making throughout design stages.

Development Management capability

The capability of Development Management officers to accurately assess these policies is reliant on the degree of training and guidance documents available. It is essential that officers have guidance on hand to assess policies against to ensure that compliance is achieved in accordance with methodologies set out in a subsequent Technical Guidance Notes. Specific upskilling of at least one officer on climate change policies to gain a technical understanding will greatly assist the overall ability of the team to assess policy compliance.

6. Feasibility

This section collates and explores primary energy modelling results outlined in WP2, along with existing published evidence of the feasibility and impact on housing delivery from studies relating to similar or identical policies to those now proposed in Policy Option 3. This includes:

- Energy modelling evidence regarding whether and how the proposed performance targets can be met in new buildings (section 6.1)
- Available analysis of whether such policies may impact housing supply (section 6.2.6).

6.1 Primary evidence of feasibility to meet the energy targets

WP2 energy modelling tests whether a 'true net zero' policy approach (proposed Policy Option 3) is technically achievable, using a consistent set of representative archetypes and specifications. Five development typologies were modelled (three residential and two non-domestic), comparing current Building Regulations performance, an anticipated future standard, and a more ambitious net zero specification. Two additional residential pathways were also tested to support viability discussion: a Cost Optimised route "towards net zero", and a "low bills" route that prioritises PV and battery storage.

6.2.1 Overall conclusions from the energy modelling

The WP2 modelling provides clear evidence that the proposed Policy Option 3 is **technically achievable** across the representative residential and non-residential archetypes tested. The strongest feasibility signal comes from the **demand-side metrics** (Space Heating Demand (SHD) and Energy Use Intensity (EUI)) which show consistent and substantial improvement from Part L 2021 to the future standard and then to the net zero specification. In other words, the core "fabric-and-services" performance implied by the net zero approach is demonstrably deliverable within the archetype testing undertaken.

For residential typologies, the Net Zero specification delivers SHD outcomes that sit below the NZCBS 2050 benchmark for all three domestic archetypes modelled, and EUI outcomes that cluster closely around the benchmark level. Two of the three residential archetypes fall below the benchmark EUI value and the remaining archetype is marginally above it, indicating that the net zero specification aligns closely with the benchmark framing across typical dwelling types. The modelling therefore supports the conclusion that the net zero specification is deliverable from a demand-reduction perspective for domestic development, and that the performance outcomes implied by the policy direction are not dependent on atypical or untested design measures.

For non-residential typologies, the modelling also indicates that net zero demand-side performance is achievable. The care home archetype meets the benchmark values shown for SHD and EUI with a material margin, indicating headroom within the modelled outcomes. The warehouse archetype shows substantial reductions in SHD and EUI between the Part L 2021 baseline and the net zero specification and sits below the benchmark EUI value shown for that archetype. The results also highlight that non-domestic outcomes are sensitive to operational assumptions, particularly internal temperature set-points, and therefore should be interpreted in light of realistic operating conditions. This sensitivity does not undermine the feasibility conclusion; rather, it reinforces that operational assumptions can materially affect reported outcomes and should be considered when translating modelling evidence into policy expectations and compliance reporting.

The key nuance emerging from the modelling relates to on-site renewables and, specifically, the extent to which a building-level net energy balance can be achieved through rooftop PV across all typologies. The results indicate that, for the house typologies, the PV capacity required for an energy balance outcome is within a modest dwelling-scale range and the PV generation required for energy balance sits within the "feasible estimate" presented. For apartments, feasibility is more sensitive to roof configuration and usable PV area, and the results indicate a gap between the energy-balance PV generation requirement and the feasible estimate presented for the apartment archetype. For care homes, the PV requirement associated with a building-level energy balance is substantially greater than the PV provision that can be accommodated on the available roof area under the assumptions presented. Importantly, these findings demonstrate that a strict requirement to achieve a full building-level energy balance solely through rooftop PV is not equally compatible with all building forms. This distinction is critical for policy design, as it supports a policy architecture that separates demand-side performance requirements from the route by which renewable contribution is delivered, particularly where roof constraints are likely to bind.

6.2 Existing primary evidence of feasibility to meet the energy targets, from energy modelling in existing / emerging local plans elsewhere

The feasibility of the identified measures in the policy have been evidenced through the case studies of several recent and emerging local plans, summarised in this section.

6.2.1 Cornwall Climate Emergency DPD (2023) [xvii] and Bath & North East Somerset Local Plan Partial Update (2023) [xviii]

The requirements for on-site energy performance are as follows:

- Space heating demand less than **30 kWh/m²/annum**
- Total energy consumption less than **40kWh/m²/annum**
- On-site renewable generation to match the total energy consumption, with a preference for roof-mounted solar PV
- (However, the technical evidence reports for this policy also tested tighter energy standards even closer to those of the proposed Policy Option 3).

These requirements were supported by technical evidence reports [xix, xx] of energy and cost modelling for six home types (semi-detached, terraced, bungalow, detached, low-rise flats, mid-rise flats). The reports used accurate energy modelling method (PHPP - which is considered best practice for the design and energy modelling of high-performance, ultra-low energy buildings). The energy modelling identified a range of energy performance targets that were feasible in Cornwall and outline different pathways for meeting the net zero carbon target (i.e. through different combinations of fabric / energy efficiency and renewable energy measures). This evidence piece also benchmarked the proposed 'net zero carbon' building performance options against how a building would perform if it simply met the Future Homes Standard.

The viability assessment found that most residential development scenarios remained viable with the policies applied. The costs analysis also showed that a significant proportion of the policy cost uplifts over the 2013 building regulations (in place at the time) would be incurred by developers to meet the new 2021 building regulations (in place now), even without the local plan carbon policy.

The analysis **identified two different 'true net zero' standards that were both technically feasible for all home types modelled**: A 'true net zero with optimal targets' (similar to HBBC's proposed Policy Option 3), and a 'cost-optimised net zero', i.e. slightly laxer EUI and SHD targets that could be achieved for significantly less cost uplift while still being able to achieve a net zero energy balance via onsite renewables that fit on the building's roof. Cornwall's adopted policy reflects this 'cost-optimised net zero' standard, to reduce the risk of slowing housing delivery.

Both policies require compliance to be demonstrated at application stage using accurate energy calculation methods – either using the method PHPP, or using a 'SAP conversion tool' that Cornwall's consultants developed for it which converts SAP inputs into more accurate outputs than SAP itself can achieve.

The analysis also shows **the maximum power that can be generated by solar PV fitting on the buildings' roofs**, in kWh/m² floorspace/year, with the homes' actual orientation (e.g. north/south or east/west; not always optimally oriented for PV). Multiplying the 'per floorspace' figure by number of storeys, it is approximately:

- Semi-detached (north/south roof thus only 1 roofplane suitable for PV): **152** kWh/m²footprint/year
- Terraced (east/west roof, thus PV on both sides): **252**kWh/m²footprint/year
- Bungalow (north/south roof thus only 1 roofplane suitable for PV): **>140**kWh/m²footprint/year
- Detached (north/south main roof): **140**kWh/m²footprint/year
- Flats, Low-rise (mansard roof with small flat area for east/west concertina-pattern panels): **150** kWh/m²footprint/year
- Flats, Mid-rise (flat roof without mansard, allowing larger area of east/west concertina-pattern PV) **162** kWh/m²footprint/year

As previously noted, both the Cornwall and B&NES policies successfully passed examination with this evidence, assessed against the WMS 2015 on soundness, and were adopted in 2023. See previous section 4.1.2 for the respective Inspectors' reasoning on the robustness of these evidence bases and thus the soundness of these policies. **Therefore**, this evidence can be considered **robust enough** to support policy.

While the *adopted* EUI and SHD targets are slightly laxer than in HBBC's proposed Policy Option 3, their adoption proves the principle of using such targets, and in fact the cited *evidence* base did show that targets like those in proposed Policy Option 3 were feasible. Similarly, the fact that the 100% renewables requirement can still be met on site despite slightly higher energy use than in HBBC's policy proves that HBBC's equivalent renewable energy target is feasible in the modelled home types.

6.2.2 Central Lincolnshire Local Plan (adopted 2023)

Policy S7 (Reducing Energy Consumption- residential) and S8 (Reducing Energy Consumption- non-residential buildings) [xxi] align with recommendations from LETI and the Committee on Climate Change. These policies' energy performance standards are similar or identical to those of HBBC's proposed Policy Option 3.

Policy S7 requires the following (with m² referring to *floor space*):

- a site average space heating demand of **15-20kWh/m²/yr**
- a site average total energy demand (EUI, energy use intensity) of **35kWh/m²/yr**, achieved through a 'fabric first' approach to construction.
- No single dwelling unit to have an EUI in excess **of 60kWh/m²/yr**, irrespective of amount of on-site renewable energy production.

Policy S8 requires the following for non-residential buildings:

- a site average space heating demand of around **15-20kWh/m²/yr**
- a site average total energy demand of **70 kWh/m²/yr**.
- No unit to have a total energy demand in excess of **90 kWh/m²/yr**, irrespective of amount of on-site renewable energy production.

Policies S7 and S8 both also require that the proposed development annually generates at least the same amount of **renewable electricity** as it annually uses.

The policy includes flexibility in several ways – including clauses for viability in specific locations, and for feasibility reasons outside the developer's control. In the latter case, offsetting offers an alternative route to compliance.

Central Lincolnshire's consultants produced in-depth robust evidence on the feasibility[xxii] and costs[xxiii] of these standards. In that evidence, the two policies' energy performance requirements were assessed for feasibility by conducting energy modelling using PHPP across five building typologies (detached house, semi-detached house, bungalow, primary school, and light industrial unit) that represented the most common type likely to be built in Central Lincolnshire. The analysis demonstrated that the policy targets for all the modelled building typologies is technically feasible in Central Lincolnshire. For building types that were not modelled, the analysis provided case studies with researched and suggested provisional energy targets for these building types, noting that further work would be required to confirm appropriate targets for those other types.

Regarding renewable energy, the energy modelling report discusses the possibility of a 120kWh/m²footprint/year generation target as an alternative to the policies' actual requirement of simply matching 100% of annual energy demand. However, none of the modelled home types were found to need this amount in order to get to net zero so long as they firstly stay within the policy's EUI energy efficiency target, whether the actual adopted EUI limit of 35kWh/m²/year or the alternative slightly laxer EUI limit of 40kWh/m²/year that was considered as an alternative policy option.

All homes modelled were low-rise with pitched roofs, thus strongly affected by orientation. In the models, up to 154kWh/m²^{footprint}/year electricity was generated with PV panels fitting on the home's own roof. This was in a semi-detached house with a pitched roof oriented east/west, meaning solar panels can be fitted on both sides, although a dormer window reduced the space available. Lower figures were achieved on roofs oriented north-south (because the northern roof plane is unsuitable for solar); however, this was still enough to match their annual energy use (reaching net zero) thanks to the policy's energy use intensity (EUI) limits. The Central Lincolnshire modelling showed that this 120kWh target can be met and excelled (up to 154kWh) with panels oriented east-west, whereas the cases where the maximum amount of solar was lower were only where a developer chose to have a north-south pitched roof, which is highly unlikely on mid-to-high rise blocks.

As previously cited in section 4.1.2, this feasibility and cost evidence was accepted as robust enough to support the policy. In the Inspector's report[xxiv]:

- Paragraph 178: "Where space heating demand, energy use and renewable energy generation is concerned, the evidence shows that the Local Plan option (Option 1) is the most ambitious. Nevertheless, the technical analysis indicates that the targets are feasible, and because the efficiencies are concerned with the core of a building's operation, potential future occupants will be less exposed to volatile energy price changes."
- Paragraph 187: "In our view the policy therefore strikes an appropriate balance between requiring new development to meet the prescribed targets but offering adequate flexibility in circumstances where technical reasons prevent this. The values cited in the policy reflect the average costs in the supporting evidence and have been viability tested."

For Policy S8, the inspector determined that as its approach is similar to Policy S7 justified by tested feasibility and viability and a summary that distinguishes between residential and non-residential development, the policy is sound.

It is noted that Central Lincolnshire is slightly further north than Hinckley & Bosworth therefore may have a slightly colder average annual outdoor temperature. Resultantly, as these standards for space heat demand and renewables have been proven technically feasible in Central Lincolnshire, then they also are in Hinckley & Bosworth.

Hence, **this Central Lincolnshire evidence of feasibility of these standards can be reasonably applied to Hinckley & Bosworth** as both share similar climatic conditions.

6.2.3 Essex Net Zero Policy Study 2023

This energy and cost modelling evidence has been relied upon to justify two local plans in 2025, one of which has been confirmed sound and adopted (Tendring & Colchester DPD), and the other of which has received preliminary approval via an inspector's post-hearing note (Uttlesford).

Essex Net Zero Policy Study[xxv] was produced by the Essex County Council in 2023 to provide technical evidence on feasibility and cost uplift, to support the creation of 'model' policies for adoption by any local plan in Essex. This technical evidence base included modelling for 6 building typologies for domestic new buildings using PHPP and 3 non-domestic new building typologies using Integrated Environmental Solutions Virtual Environment (IESVE)[61]. These building types were: Terraced house, bungalow, semi-detached house, low/mid/high rise blocks of flats, office, school and industrial (distribution/warehouse).

[61] Integrated Environmental Solutions Virtual Environment. Energy modelling software for non-residential buildings, preferred for its ability to model a wide range of HVAC components and occupancy patterns.

The findings from this Essex Net Zero Policy Study showed that the modelled building types for both domestic and non-domestic demonstrated the feasibility of meeting EUI and SHD targets like those of Hinckley & Bosworth (SHD 15kWh/$m^{2floorspace}$/year or 20kWh/$m^{2floorspace}$/year in bungalows; EUI of 35kWh/$m^{2floorspace}$/year in homes, 70 in offices, 65 in schools, or 35 in light industrial; energy generation either equal to demand or else 80-120kWh/$m^{2footprint}$/year depending on building type).

Essex' study also demonstrates that in the modelled building types, feasible solar electricity generation amounts per m^2footprint per year were 120kWh (on flat roofs with panels in east-west concertina-layout), 160kWh (on a symmetrical pitched roof with east-west orientation) or even 260kWh (on a 'monopitch' roof which is entirely south-facing). On a symmetrical pitched roof oriented north-south (thus no PV on the north side), the generation figure was 100kWh, but this does not mean the 120kWh target is unfeasible, as it is the developer's choice how the roof is oriented and there is nothing to stop the developer rotating the roof to face east-west, enabling the aforementioned figure of 160kWh to be met.

Tendring & Colchester Borders Garden Community DPD relates to a new settlement of 7,500 new homes on land that overlapping the boundary between Tendring District Council and Colchester City Council. The DPD successfully passed examination in 2025 and was adopted by both councils in May-June 2025. In that adopted DPD[xxvi], the energy targets in Policy 8 Part A- Net Zero Carbon are:

- Space heating demand ≤**30kWh/$m^{2floorspace}$/per annum.**
- Total energy consumption (EUI) ≤**40kWh/$m^{2floorspace}$/annum.**
- Onsite renewable generation to match or exceed the total energy use
- (However: The evidence supporting this policy did also test tighter energy performance targets in line with those set in Hinckley & Bosworth's proposed Policy Option 3).

It has not been identified why the adopted Tendring & Colchester DPD uses laxer targets than those that the Essex energy modelling had proved feasible, but it is likely to be because of costs (and the Tendring supporting text specifically mentions the Cornwall case previously outlined). This might have been necessary in order to get the developer's Statement of Common Ground.

By contrast, the Uttlesford local plan adopted the tighter targets that reflect those of the Essex evidence base and associated Essex model policy.

Essex' 2023 study also found that the cost uplift for meeting the net zero policy was similar or possibly slightly lower than the cost uplift previously modelled for the county by a different set of consultants, and therefore viability should be improved when using the cost estimates from the 2023 study versus what was previously calculated. Additionally, this evidence base was supplemented by open legal advice from Estelle Dehon KC, Cornerstone Barristers[xxvii]. One of the main points identified in that advice was how the costs from this study could be used for local plan viability assessments across Essex to provide a consistent approach.

As a result, Tendring & Colchester's Policy 8 Part A successfully passed examination in April 2025[xxviii], concluding that the evidence submitted by the Council(s) demonstrated that the policy targets would not impact viability or feasibility. In particular, the inspector noted:

- Paragraph 77 & 79 : "There is no evidence to suggest that … the highest standards of sustainable design [would] make the development unviable or undevelopable over the plan period …The policy provides the detail to a new garden community, which … has been tested and demonstrated to be viable and is supported by a lead developer with shared aspirations to deliver an exemplar mixed-use development."

Tendring & Colchester Borders Garden is our first example where the inspector acknowledged the WMS2023 but concluded that the policy is justified. The Uttlesford policy also received indicative approval in July 2025 in the form of an Inspector's note confirming they see no need to amend that policy. **Therefore**, these successes demonstrate that this feasibility evidence **must be considered as robust enough for the current planning regime. The standards tested in that evidence were equivalent to those in Hinckley & Bosworth's proposed Policy Option 3 and can therefore be reasonably assumed to support Hinckley & Bosworth's feasibility.**

6.2.4 South Oxfordshire & Vale of White Horse Joint Local Plan (2024)

South & Vale Joint Local Plan evidence included a Net Zero Carbon Study[xxix] for its policy options that covered operational energy and embodied carbon. This included feasibility (energy modelling) and cost uplift in 8 building types: 4 domestic (detached, semi-detached, home, terraced, and medium rise flats) and 4 non-domestic (primary school, warehouse, retail, office). Each was modelled using PHPP to identify the energy performance.

The net zero operational energy and embodied carbon requirements for which feasibility and viability was tested in South & Vale were as follows, i.e. similar or identical to Hinckley & Bosworth's proposed Policy Option 3:

Residential

- Total energy use **35 kWh/m^2/yr**
- Space heating demand **15 kWh/m^2/yr (or 20 kWh/m^2/yr for bungalows)**
- On-site renewable energy generation capacity to at least equal the predicted annual total energy use.

Non- residential

- Total Energy use

    - Warehouses - ≤ **35kWh/m2/year** (flexible if unavoidable high unregulated energy use e.g. server farm)
    - Offices - ≤ **55 kWh/m2/year**
    - Schools - ≤ **55 kWh/m2/year**
    - Retail - ≤ **35 kWh/m2/year** (flexible if refrigerated goods)
- Space heating demand ≤ **15 kWh/m²/year**
- On-site renewable energy generation capacity to at least equal the predicted annual total energy use.

Embodied carbon

- Large-scale new residential (50 and above units) and non-residential (5000m2 commercial floorspace) development to limit embodied carbon (modules A1 – A5) to 900 $kgCO_2e/m2$ GIA (as defined under RICS NRM2).
- All new development is strongly encouraged to achieve LETI 2020 Design Guide embodied carbon targets (modules A1 – A5).
- Construction waste on major development to achieve over 90% recycling rate and over 99% diversion rate from landfill.

The energy modelling demonstrated that the operational energy and embodied carbon requirements proposed in the policy are feasible, and the policy offers flexibility by allowing offsetting as a route to compliance where the renewable energy target cannot be met. The analysis found that the cost uplifts of achieving net zero operational energy ranged from <1% for warehouses to over 6% for flats. While the embodied carbon targets increased the uplift in all archetypes, it was also noted that the net zero energy standard strongly reduces running costs.

The modelling showed that 120-122kWh/$m^{2footprint}$/year solar generation is feasible with the "reasonable maximum" area of PV (equal to ~70% of a building's footprint area). The only exception was in the detached house, likely due to pitched roof orientation, but in that home only 66kWh/$m^{2footprint}$/year was needed to reach net zero and so the 'maximum PV' target would not kick in.

South & Vale is currently undergoing examination, thus the Inspector's verdict on the robustness of its evidence is yet to be confirmed.

Table 12. Summary Table of cited plans & inspectors' view on robustness

Points of policy soundness	Local authority and planning document	Why it was successful
1. Policy sound and in line with national policy	Cornwall Climate Emergency DPD (2023) (B&NES)	The inspectors at examination cited the soundness of the policy exceeding Building Regulations Part L as events have overtaken WMS2015 and the NPPG. Additionally, that the policy is in line with provisions of the Planning and Energy Act and Planning & Compulsory Purchase Act for local policies to exceed national standards if robustly evidenced.
	Bath & North East Somerset Local Plan Partial Update (2023)	
	Central Lincolnshire Local Plan (2023)	
	Tendring & Colchester Borders Garden Community DPD (2025)	While the WMS23 was considered after the DPD was submitted, the policy was sound in light of the relevant legislated powers and duties.
2. Impact on housing delivery	Cornwall DPD (2023) (as above)	The inspector found that the evidence demonstrated that housing delivery and employment will not be impacted in achieving the net zero standards in the proposed policy.
	Tendring & Colchester as above	The inspector found that the robust feasibility evidence demonstrated that the policy would not make the scheme undevelopable; a key factor in the decision.
3. Technical feasibility	Cornwall DPD (2023) (as above)	The inspectors at examination concluded that the evidence provided was robust enough and tested to prove the feasibility of meeting the net zero energy performance standards.
	B&NES (2023, as above)	
	Central Lincolnshire (2023)	
	Tendring & Colchester as above	
4. Viability	Cornwall DPD (2023) (as above)	The policies were found viable through testing and therefore justified.
	B&NES (2023, as above)	
	Central Lincolnshire (2023)	
	Tendring & Colchester as above	

6.2.5 The UK Net Zero Carbon Building Standard (UKNZCBS)

The UK Net Zero Carbon Building Standard (UKNZCBS) is the first unified approach to defining the performance in all major building types in the UK, ensuring that the built environment supports the UK 2050 net zero goal and the carbon budgets aligned to the Paris Agreement. The UKNZCBS has a set of targets which includes operational energy and embodied carbon and they become more stringent over time. The evidence for these targets was developed collaboratively by industry representatives. However, the standards set by the UKNZCBS confusingly do not necessarily mean a building *is net zero carbon*, rather that it is *in line with the transition to net zero*. The UKZCBS Version 1 has now been published, building on the Pilot Version released in 2024. While it provides a robust technical framework (including limits/targets and an approach to verification), it is not accompanied by a comprehensive, plan-maker-ready cost uplift evidence base. As a result, it should be used with caution as the sole basis for setting policy requirements, and the Council may wish to revisit its role in future plan iterations as the Standard's verification offer and supporting cost evidence develops.

6.2.6 Existing evidence of similar policies' impact on housing supply

Not only are there other recent and emerging local authorities that have successfully passed policies with similar energy performance requirements as Hinckley & Bosworth, but there have been studies to evidence that these policies will not impact housing delivery.

A study[xxx] by Bioregional in 2024 examined three local authorities (Bath & Northeast Somerset, Cornwall, and Central Lincolnshire) that set ambitious net zero targets similar to those in Hinckley & Bosworth's proposed Policy Option 3 as previously outlined. This compared the rate of development applications before and after the policy adoption, on the assumption that developers would not make applications for schemes that they cannot deliver.

The overall indication from that study was that stronger energy efficiency standards does not negatively impact housing delivery via the proxy of applications. In fact, Bath & Northeast Somerset observed a 7.7% increase in accepted residential planning application after the Council adopted the DPD in January 2023. Similarly, Cornwall adopted a progressive DPD in June 2023 and observed an 8.5% increase in applications in the Q3 of 2023 from Q2 pf 2023. The study also noted that there is normally a surge in applications prior to the adoption of new and improved policy standards, but this was not the case in Cornwall, further evidencing the minimal impact that such ambitious policy standards are likely to have on housing delivery. Finally, Central Lincolnshire adopted its new DPD in June 2023 which observed no big change in the number of housing applications received for major developments. The study did note that there was a reduction in minor housing applications which could be a result of Central Lincolnshire's higher energy use intensity and space heating demand standards than B&NES and Cornwall. However, the study noted that it could not conclude if the higher standards inhibit minor housing applications because it was only observed in one of the local authorities studied; also representatives from Central Lincolnshire have observed that there is often a brief dip in applications after any new plan is adopted. At the time of the study, it was recommended that further research was needed to be conducted across a larger sample size to increase the confidence of our preliminary findings. However, overall, the study found indications that energy-based net zero policies should not be a barrier to delivering housing at scale.

A similar study was conducted by the University of Bath[xxxi] in partnership with Bath & Northeast Somerset, and technical advisors to examine the industry implementation of and influence from B&NES's new adopted planning policies (Jan 2023) that covered operational energy and embodied carbon standards. This study did not compare the rate of applications or delivery (therefore should not be considered a direct indicator of actual delivery) but rather considered the *rate of compliance with the new policy* within applications that were received. 38 applications were studied and mostly for minor developments. As the study was conducted six months after implementation of the policy, the initial findings included challenges in the awareness of the new standard and negative reception of the policy. However, the study noted that there was a general agreement among applicants that the policy was effective in reducing operational and embodied emission, supporting the intentions of the policy. Thus, the study signalled for a need for further research conducted on a wider scale and long-term to monitor the evolving industry response to this policy, measuring the real emissions savings from construction and occupation, and further engaging with stakeholders.

Apart from the feasibility of the measures in the proposed policy, it is also noted in the WMS23 to consider the feasibility of accessing the necessary supply chains. It is not possible to isolate the specific supply chains that would be different for this policy in comparison to what will already be needed for the incoming new national building regulations Future Homes Standard. This is because, compared to today's Building Regulations Part L, the main difference will be the use of a heat pump (which is also present in the Future Homes Standard), whereas the other building elements to meet local policy would simply remain the same in terms of insulation, air tightness, and solar panels. However, it is worth noting that the impact of specialist skills to meet net zero targets is minimal compared to the current construction overarching skills shortage experienced throughout the industry[xxxii] (e.g. bricklayers) which constrains the delivery of construction unrelated to this policy. Therefore, there is no reason to believe that the proposed policy will slow down construction any further. In fact, a policy like this will stimulate regional growth in the kind of skills necessary for the FHS and the UK's net zero carbon future as a whole. This was demonstrated by evidence of greater proliferation of heat pump engineers in areas where policies similar to the one being proposed have been adopted, such as in the Southwest of England.

The report acknowledges that the above cited studies are not nation-wide and that the evidence they provide is relatively limited. However, it must be compared against the complete lack of evidence of the purported concern about the impact of policies like these on housing delivery that is often put forward by objectors to any policy standard (whether the policy uses Building Regulations metrics or 'true net zero' standards like Hinckley & Bosworth's proposed Policy Option 3). HBBC should conduct an accompanying viability assessment to ensure that any policy adopted will comply with viability requirements.

In conclusion, the impact achieving HBBC's net zero policy requirements on housing delivery have been considered, but deemed negligible as primary modelling results and the available existing evidence indicates the minimal impact similar policies have had on housing delivery.

7. Cost uplift

7.1. Existing primary evidence of cost uplift to meet proposed policy

This section establishes an assumed cost uplift for proposed Policy Option 3, by deriving this from WP2 primary cost analysis, existing costs evidence of similar or identical policy standards in robust evidence bases that are established to be robust on the basis that they formed the costs basis for several adopted and approved local plans as previously cited.

7.1.1 Primary evidence of cost uplift to meet energy requirements

The cost modelling provides an indicative assessment of the capital cost uplift associated with moving from baseline regulatory compliance to the higher performance pathways tested in WP2. Results are presented for three residential typologies (detached house, semi-detached house, and a low-rise block of flats) and two non-residential typologies (care home and warehouse) as per energy modelling. Capital uplifts are disaggregated into the main cost categories used in the modelling: fabric and ventilation, heating systems, and renewables (PV). Uplifts are reported both relative to Part L 2021 and relative to the Future Homes Standard (FHS) baseline, enabling the Council to understand both the immediate and the "future regulation" incremental cost position.

Against Part L 2021, the net zero approach shows mid-single-digit percentage uplifts for houses and a higher uplift for the flats archetype (detached 6.4%, semi-detached 6.8%, low-rise flats 8.7%), equivalent to £109–£177/m². Against the Future Homes Standard (FHS) baseline, incremental uplifts are materially lower (detached 3.4%, semi-detached 3.4%, low-rise flats 4.2%, equivalent to £60–£91/m²), supporting the interpretation that the additional cost of net zero approach reduces when assessed against a future regulatory baseline.

The cost optimised pathway consistently reduces uplift relative to the net zero approach across all residential archetypes, largely through lower fabric and ventilation allowances, providing an evidence-based intermediate route where viability is demonstrated to be a constraint. The "low bills" pathway has a distinct cost profile due to higher PV and the inclusion of battery storage; it should therefore be treated as a differentiated route rather than a direct substitute for cost optimisation.

For the care home, the net zero approach represents a clear uplift relative to the future standard baseline (net zero approach relative to FBS: £78/m²), driven mainly by fabric/ventilation and renewables. For the warehouse, the net zero approach relative to FBS baseline is shown as -£40/m² in the cost outputs, driven by the renewables line, highlighting that non-domestic results are sensitive to how renewables are treated within each baseline and scenario.

Overall, the cost evidence indicates that **the net zero approach (as in proposed Policy Option 3) can be pursued with manageable uplifts**, particularly when framed against a future regulatory baseline.

7.1.2 External sources of cost uplift data to meet Hinckley & Bosworth's proposed policy standard

There are various recent studies in the public domain which estimate the cost uplifts to reach standards similar, or identical, to those in proposed Policy Option 3 (as cited in the feasibility section 3 above). Those that provide relevant costs to feed into this Hinckley & Bosworth study are provided in the table below. Where these were not given as a % in the original source data, the % uplift has been calculated from stated absolute costs.

Table 13. Recent studies that estimate the cost uplifts to reach standards similar or identical to those in proposed Policy Option 3

For what plan was this evidence made?	Study date	What standards does this evidence base cost for?	Costs uplift on Part L 2021 baseline
Cornwall Climate Emergency DPD[62] (and Bath & North East Somerset)	2021	Residential: • Space heat demand: 15 kwh/m²/year • EUI 35kwh/m²/year • Renewables: To match use (Note: This evidence also costed SHD 30 / EUI 40, but costs for the tighter targets are cited)	• Flats: 3.6% (Low rise 4%; mid rise 3.1%;) • Terraced: 5.1% • Semi detached: 2.7% • Detached: 0.5% • Bungalow: 4.1%
Any in Essex[63] Of which Inspector approved to date: Tendring Colchester Borders Garden Community DPD; adopted 2025 Uttlesford Local Plan approved 2025	2023	Space heat demand kWh/m²/year: • Bungalows: 20 • All other builds: 15 EUI (kWh/m²/year) • Homes: 35 • Offices: 70 • School: 65 • Industrial: 35 Renewables: To match use	• Flats: low rise 7%; mid rise 4%; high rise 3%; av. 4.7% • Terraced: 7% • Semi detached: 6% • Bungalow: 5% • Office: 2% • School: 2% • Light industrial: 12%
South Oxfordshire & Vale of White Horse (at examination Summer 2025[64])		Space heat demand kWh/m²/year: • All buildings: 15 EUI (kWh/m²/year) • Office: 55 • School: 55 • Warehouse (industrial): 35 • Retail: 35 Renewables: To match use	• Flats, low-rise: 6.2% • Terrace: 4.9% • Semi-detached: 4.6% • Detached: 4.1% • Office: 6.1% • School: 4.3% • Light industrial: 0% • Retail: 1.2%

[62] https://www.cornwall.gov.uk/media/fkzp45mv/eb042-20200359-climate-emergency-dpd-technical-evidence-base-rev-g.pdf

[63] https://www.essexdesignguide.co.uk/media/2940/report-1-essex-net-zero-policy-technical-evidence-base-july-2023.pdf#page=48

[64] https://jlp.southandvale.gov.uk/pages/supporting-documents

Please note there are also other studies in existence that have estimated cost uplifts for these standards, such as that of Greater Cambridge (study 2021[65]; plan not yet examined) and Central Lincolnshire[66] (study February 2021; plan examined 2022 and adopted 2023). However, cost data from those is not used here because these studies' stated costs were as uplifts over the erstwhile baseline of Building Regulations Part L 2013. That baseline is no longer relevant because Building Regulations was updated with Part L 2021, which forms the basis for the viability study costs baseline sample.

7.1.3 Note: Cost 'uplifts' are likely to be significantly less in real terms from 2026 onwards

The Future Homes Standard / Future Buildings Standard are now confirmed, with the regulations coming into force on 24 March 2027 (and a later commencement date of 24 September 2027 for certain higher-risk building work), subject to transitional arrangements. This suggests that much of the "policy cost uplift" identified in this study would be incurred by developers regardless of Local Plan policy, as FHS is expected to embed low-carbon heating as the norm for new homes, alongside improved fabric performance, and on-sire renewable electricity generation in most cases. Accordingly, the residual uplift should be understood as the incremental cost of moving ahead of potential regulatory positions, rather than the full cost of transitioning away from gas heating. Typically, when new national regulations bring cost uplifts like the FHS, the market responds in that these are typically compensated for by reductions in the sale value of pre-development land (as acknowledged in national policy source such as the FHS Impact Assessment 2023[67] which notes that "Historically, [capital and installation] costs have been factored into land prices and passed onto landowners".

In addition to this likelihood that these costs will be somewhat mitigated by shifts in land value that will occur anyway due to the FHS, there is also evidence that homes with higher energy efficiency sell for higher prices (as buyers know they will recoup this in lower energy bills). One in-depth study[xxxiii] by Halifax noted home sale value increases of between 1.8% to 3.8% per EPC band. And when looking at the social rental market, more energy-efficient homes benefit[xxxiv] from lower void periods and lower amounts of arrears, thus achieving financial and administrative benefits for the landlord.

It is up to the Council's viability consultants to decide whether the impact of higher sustainability credentials on running costs and property values should be included in any future iterations of the viability assessment.

[65] https://consultations.greatercambridgeplanning.org/sites/gcp/files/2021-08/NetZeroCostReport_GCLP_210831.pdf
[66] https://www.n-kesteven.gov.uk/sites/default/files/2023-03/CLC007%20Task%20H%20-%20Cost%20Implications.pdf
[67] https://assets.publishing.service.gov.uk/media/65cc90e139a8a7000f60d508/Future_Homes_Standard_consultation_stage_impact_assessment.pdf

8. Maximising the value of the evidence base beyond the Local Plan

This study has been prepared primarily to support the emerging Local Plan evidence base. However, the Council's ability to progress its climate commitments does not rely on Local Plan policy alone. Given the possibility that national planning policy may narrow the scope of what local plans can require, it is increasingly important to advance delivery through other Council levers and routes. The work completed to date provides a locally grounded understanding of what higher performance looks like in practice, where delivery constraints can arise, and what the cost and feasibility implications are. That insight can be embedded across Council functions to maintain momentum even if Local Plan policies need to remain more principles-led.

8.1 Related delivery routes that can continue to draw on this programme's findings

- **Development management and pre-application guidance**: The modelling evidence, archetype specifications and performance benchmarks can be translated into validation requirements, checklists, and technical guidance for applicants. This can strengthen consistency in decision-making and improve early-stage design outcomes, even where Local Plan policy wording is necessarily more principles-based. The work on assured performance and post-occupancy evaluation can similarly be used to shape expectations for compliance reporting and to reduce the performance gap in practice.
- **Supplementary Planning Documents and technical guidance notes**: Where there is appetite to provide more detail than can be contained in a Local Plan policy, the evidence base can inform supplementary guidance that clarifies expectations on energy strategies, overheating risk management, renewable integration, and monitoring arrangements. This enables the Council to maintain ambition through implementation clarity, while keeping Local Plan policy appropriately high-level if required.
- **Council-led projects and the public estate:** Apply the same performance expectations to Council-led development and the Council estate through briefs, procurement and capital programme decisions, demonstrating leadership and normalising higher standards locally.
- **Local energy and infrastructure coordination:** The renewables and energy systems evidence can support proactive engagement with network operators and delivery partners, helping to identify where grid capacity, reinforcement, storage, and flexibility solutions may be needed. This is especially important where the modelling highlights that building-level net energy balance requires additional work for some typologies through rooftop PV alone, and where area-wide energy solutions and infrastructure planning are required to deliver decarbonisation at scale.
- **Programmes, funding and partnership delivery**: Strengthen funding bids and delivery programmes led by climate and energy teams by using the evidence base as a shared reference point for need, deliverability and prioritisation.

8.2 Additional avenues for climate delivery that the Council can pursue independently of the evidence base

The Council can advance climate delivery through its own estate and procurement, regardless of the Local Plan. This can include adopting a corporate performance standard for all Council-led new build and major refurbishment projects and embedding that standard in briefs and contracts. The Council can also deliver a prioritised retrofit programme for its own buildings, focusing first on assets with high heat demand and clear value-for-money opportunities. Procurement can be strengthened by requiring suppliers and contractors to provide carbon management plans, adopt low-carbon materials approaches, and submit proportionate reporting. In parallel, the Council can develop and implement a fleet electrification plan, supported by a depot and operational charging strategy.

The Council can also use planning-related tools that sit outside the Local Plan to maintain momentum. Aside from Supplementary Planning Document or technical guidance, HBBC can formalise a pre-application "energy surgery" route for major schemes so that energy and overheating issues are addressed early and are less likely to become negotiated late-stage constraints. Validation checklists can be introduced to make clear what evidence must be submitted with applications, and planning conditions and section 106 obligations can be used, where lawful and appropriate, to secure implementation commitments such as commissioning, monitoring, and reporting.

Housing and retrofit delivery can be accelerated through partnership and place-based programmes. The Council can work with housing associations to align retrofit standards, coordinate delivery pipelines, and strengthen resident engagement. Area-based retrofit pilots can be used to aggregate demand and procurement, improving delivery efficiency and affordability. The Council can support private landlords through advice, signposting and incentives, and it can explore licensing-linked measures where appropriate and lawful. The Council can also establish or sponsor a local "one-stop shop" service that provides residents and SMEs with trusted advice, installer routes, and finance navigation.

Local energy and infrastructure coordination remains an important delivery route for HBBC, but the Borough is now able to build on the Leicester & Leicestershire Local Area

Energy Plan (LAEP)[68] (2025). The LAEP covers Hinckley & Bosworth alongside the other Leicestershire districts/boroughs and is supported by a dedicated spatial summary annex for each authority, including Focus Zones and candidate projects. The Council can therefore use the LAEP as the strategic "whole energy system" framework to coordinate priorities for heat decarbonisation, electricity capacity, EV charging and flexibility, and to structure ongoing engagement with network operators and delivery partners around investment needs, network constraints and low-regret interventions. As delivery progresses and conditions change, HBBC can support periodic updates and refreshes of this work (noting that LAEPs are intended to be revisited over time) to keep the pathway and investment priorities current. Renewable energy deployment can be progressed directly through Council assets and facilitation. The Council can deliver a programme of solar installations on public roofs and car parks, including solar canopies where appropriate. The Council can also facilitate land-based renewables by identifying low-conflict opportunity areas and working with partners to bring forward viable schemes. Where relevant, the Council can consider a local approach to battery storage where it supports network constraints and improves the integration of renewable generation.

In addition, the Council can strengthen finance, investment and governance arrangements to accelerate delivery. A costed climate investment plan can be developed, with a prioritised pipeline, clear delivery ownership, and a monitoring framework. The Council can use appropriate finance mechanisms, including prudential borrowing where suitable, to invest in measures that reduce long-term operating costs. Internal governance can be strengthened through regular reporting, clear decision points, and corrective action triggers where progress falls behind trajectory, and climate risk considerations can be embedded into the capital programme and asset management processes, including overheating, flooding and wider resilience priorities.

Finally, the Council can progress climate outcomes through behaviour, skills and transport measures. It can run an SME decarbonisation programme that provides audits, grant navigation support and peer learning, and it can deliver targeted public engagement focused on high-impact household actions such as retrofit readiness and low-carbon heat. The Council can also work with training providers and employers to grow local skills and supply chain capacity for retrofit, heat pumps and low-carbon construction. Alongside this, the Council can implement an EV charging strategy covering on-street provision, destination charging and fleet charging through delivery partnerships, strengthen active travel and demand reduction programmes, and use transport policy tools and the management of Council-owned land to reinforce low-carbon travel behaviours and reduce car dependency.

[68] https://greenerfutureleicestershire.co.uk/laep

Appendix 1: Implications of December 2025 NPPF consultation

In December 2025, the Government published a draft revised National Planning Policy Framework (NPPF)[69] for consultation. The consultation ran from 16 December 2025 to 10 March 2026, and the Government has indicated it is currently analysing responses, with the final outcome and any amendments to the draft text to follow. This appendix summarises context for policy drafting and risk management while the national policy position remains subject to consultation outcomes.

Since HBBC is intending to submit its Local Plan for examination under the 'legacy' plan-making system, its Local Plan will be examined against the 2024 NPPF. However, the Draft NPPF may still influence the Inspector's take on the direction of travel of national policy. When adopted the new NPPF will have impact on development management.

Two proposed changes in the draft NPPF are particularly relevant to policies addressing energy efficiency, carbon reduction and related requirements.

- PM13 – Setting standards (constraints on quantitative standards and overlap with Building Regulations): The draft introduces a new plan-making policy, PM13, which proposes that quantitative standards set through development plan policies should be limited to a narrow set of topics (infrastructure provision, affordable housing requirements, parking, and design/placemaking). PM13 further states that such standards should not cover matters already addressed by Building Regulations, except in limited cases (accessibility and water efficiency), and should not cover matters relating to the construction or internal layout of buildings unless implementing the nationally described space standard.
- DM5 – Development viability (stronger plan-led approach and limited scope for application-stage viability): The draft introduces a new decision-making policy, DM5, which states that where development proposals accord with relevant up-to-date plan policies and national decision-making policies, they should be assumed viable. DM5 also limits the circumstances in which a viability assessment to inform decision-making is justified, makes clear that land price paid should not justify failing to accord with plan policy, and requires that any submitted viability assessment must refer back to the plan-stage viability evidence and use the approach set out in planning practice guidance.
- DM7 – Relationship with other regulatory regimes: The draft states "Planning decisions should not seek to duplicate or extend controls imposed by separate regulatory regimes other than where there is a development plan policy in place applying optional technical standards for the development proposed (see policy PM13)." However, the development plan still has legal primacy under s38(6) of the Planning and Compulsory Purchase Act. The draft NPPF states that the NDMP's are non-statutory, and such they are to be considered as a material consideration to decision making. This somewhat conflicts with the draft NPPF, under Annex A, where it states that development plan policies which are inconsistent with NDMPs should be given **very limited weight**, unless examined under this new Framework.
- The draft NPPF also strengthens the plan-making and decision-taking emphasis on renewables and energy infrastructure through **W2** (plan positively for renewables and electricity networks) and **W3** (give substantial weight to the benefits of renewables and do not require applicants to demonstrate need).
- In parallel, the decision-making section includes a general principle that planning should not seek to duplicate or extend controls imposed by other regulatory regimes (with limited scope via PM13).

Against this draft national policy direction, Part 1 of Policy A is more exposed than Part 2, because Part 1 contains multiple numerical targets (e.g., EUI/SHD limits and quantified on-site renewable energy generation requirements). These are more likely to be interpreted as "quantitative standards" and therefore face higher examination risk under PM13. By contrast, Part 2 contains a higher proportion of qualitative and process-based requirements (e.g., demonstrating that specific opportunities have been explored, assured performance processes, smart energy systems considerations, post-occupancy reporting, and design-led overheating responses). These provisions are generally more capable of being framed as planning policy requirements that guide design, implementation and evidence submission, and are therefore less directly exposed to PM13's restriction on quantitative standards.

69 https://assets.publishing.service.gov.uk/media/697b71c52ff8d10a830d5d4a/Draft_NPPF_December_2025.pdf

Theme-by-theme implications for viability and deliverability

Net zero (operational energy) – new build residential development

Where Policy A requires residential developments to meet defined EUI/SHD targets and to match annual energy use with on-site renewable generation (including quantified generation equivalence metrics), these elements are most exposed under PM13 because they are expressed as numeric requirements outside the limited list of topics for quantitative standards. However, even under the draft NPPF, local plans are expected to contribute to climate mitigation and adaptation through design and layout choices that conserve energy and minimise overheating risk. Policy A's residential net zero theme is consistent with this direction because it seeks to secure energy-efficient building outcomes through planning policy, and (in Part 2) strengthens deliverability through assured performance, smart energy systems integration and monitoring. DM5 further supports a plan-led approach by reducing reliance on application-stage viability negotiation and requiring any viability case to be grounded in plan evidence.

Implication for soundness framing: Notwithstanding the draft NPPF's proposed restrictions on quantitative standards, Policy A's residential provisions remain policy-rational where they are framed as a planning-led approach to delivering low-carbon development. In practice, residential energy demand and on-site generation have clear implications for site layout, design, and local energy infrastructure, including peak demand, export/import patterns, and the potential need for grid reinforcement. It is therefore reasonable to claim that these impacts are managed through requirements that are within the planning system's influence. In addition, the draft NPPF's plan-led viability position would, if implemented, support the consistent application of clearly defined policy requirements by limiting the circumstances in which application-stage viability arguments can justify non-compliance.

Net zero (operational energy) – new build residential development

Non-residential EUI/SHD limits and quantified on-site renewable generation requirements are similarly exposed under PM13 if treated as quantitative standards outside the permitted list, and may also attract scrutiny where they are seen as overlapping with Building Regulations matters. Policy A's non-residential provisions are consistent with the draft NPPF's broader expectation that planning supports the transition to net zero and secures energy-conserving design outcomes. In addition, the policy's process and implementation provisions (assured performance and smart energy systems) should be viewed as planning measures addressing land-use and infrastructure implications, including the relationship between demand profiles and on-site generation/export and the need to avoid unnecessary grid reinforcement. This aligns with the draft NPPF's increased emphasis on planning positively for energy infrastructure. As for residential, the numeric targets are the most exposed; however, the non-residential theme remains policy-rational where it is framed around design, implementation assurance, and managing energy-system impacts, supported by plan-led viability expectations in DM5.

Overheating in new buildings

Policy A's overheating theme combines a design-led cooling hierarchy and requirements for recognised overheating assessments. This is less directly affected by PM13 unless drafted as a new quantitative "standard". However, the draft NPPF explicitly expects development to contribute to climate mitigation and adaptation and to minimise overheating risk through planning-influenced design choices (layout, orientation, massing, landscaping and materials). Policy A's overheating clauses are consistent with this because they focus on design intent and risk management that sit squarely within the planning system, rather than treating overheating solely as a building control matter.

Renewable energy

The draft NPPF strengthens support for renewables through plan-making policy W2 and decision-making policy W3, including that substantial weight should be given to benefits and applicants should not be required to demonstrate need. This supports Policy A's wider renewables theme (e.g., allocating sites, encouraging storage, protecting infrastructure, and requiring consideration of grid impacts and restoration). However, it is important to note that where Policy A requires quantified on-site renewable generation outcomes as part of the net zero theme, those numeric requirements may still be exposed under PM13 as quantitative standards outside the permitted list. Overall, even if national policy tightens around numeric standards, the policy rationale for renewables remains strengthened under the draft NPPF: plans should actively support clean power and network infrastructure, and decision-taking should place substantial weight on benefits. Policy A's Part 2 provisions on smart energy systems, storage, grid reinforcement minimisation and post-approval restoration/decommissioning can therefore be justified as directly aligned with the draft NPPF's direction and as supporting deliverability and system resilience.

Embodied carbon

Embodied carbon isn't explicitly "provided for" in the draft NPPF in the way renewables and energy infrastructure are, so in that sense it's not strongly driven by the consultation text.

Appendix 2: References and endnotes

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