

# Central Lincolnshire Local Plan: Climate Change Evidence Base

Draft

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## Policy Recommendations

Feb 2021 | Rev C - Draft

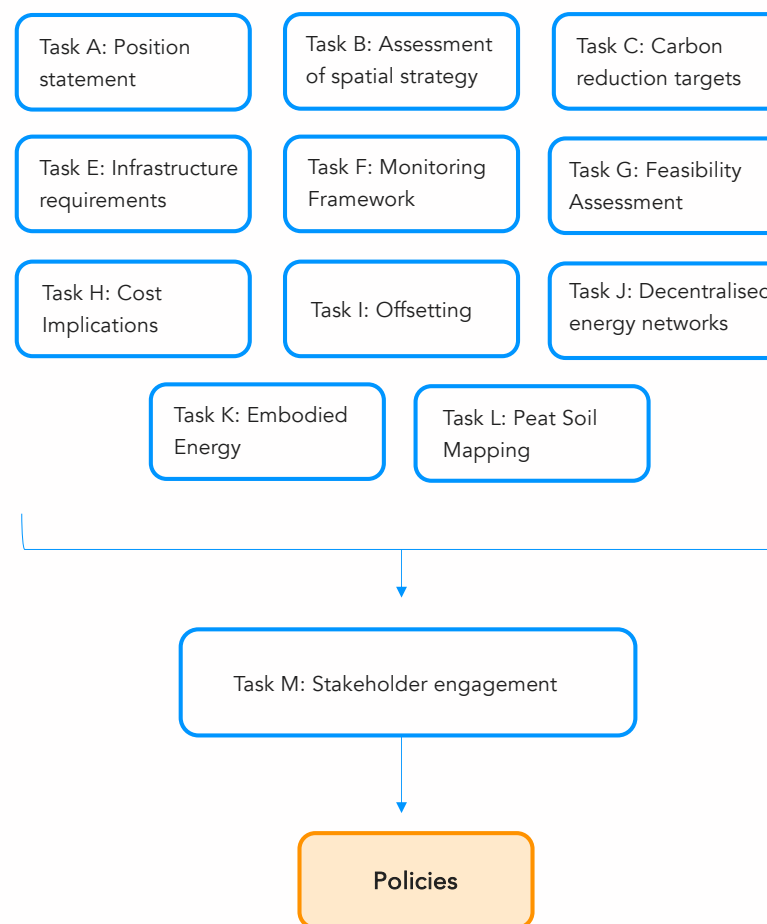


# Policies

This section lists the policies that have been developed in response to the evidence base built up through the analysis, modelling and stakeholder engagement undertaken as part of this Net Zero Carbon Local Plan Evidence Base study.

Policies are listed by the primary sector they influence, and rationale and evidence of need is explained through references back to relevant sections of the wider study.

## Central Lincolnshire Local Plan – Climate Change Evidence Base



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# Task C

## Policy Recommendations

### 1.0 Introduction

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# 1.1 Introduction

## Navigating this section

1.1.1 The contents and logic of this section is illustrated on the right. This section of the evidence base brings together the different workstreams into a set of policy recommendations.

## What this section does

1.1.2 This “Policy Recommendations” report lists the policies we feel should be implemented in Central Lincolnshire’s new Local Plan.

1.1.3 Policies are listed in a summary table on pages 7 to 10, and further expanded upon in a “crib sheet” for each policy in Section X. Each policy page summarises the evidence of need, feasibility and links to other policies. It also summarises the available mechanisms of the plan and how they can be utilised.

1.1.4 Policy headlines are suggested, and references are made to the other documents within the evidence base for detail. Details can be found in the net zero carbon evidence base sections referenced throughout this section:

- Task A: Position Statement
- Task B: Assessment of Spatial Strategy
- Task C: Emissions Reductions Requirements
- Task E: Infrastructure Requirements
- Task F: Monitoring Framework
- Task G: Technical Feasibility
- Task H: Cost Feasibility
- Task I: Offsetting
- Task J: Decentralised Energy Networks
- Task K: Embodied Carbon
- Task K : Peat Soil Mapping

## What this section does not do

1.1.5 This report does not attempt to write all policy wording as it would be seen in the local plan. It is intended that this document will be used as a starting point for the Local Authority to write relevant policies into the new local plan.

## 1.2 Policies for a net zero carbon compliant local plan

### Introduction

1.2.1 The policies listed in this section have been formulated drawing on the evidence base created for Central Lincolnshire's new local plan. They specifically address the requirement for new local plan to be consistent with the requirements of legislated national targets of being zero carbon by 2050, science based targets aligned with the Paris Agreement and the City of Lincoln's and North Kesteven's commitment to be zero carbon by 2030, and West Lindsey's commitment to be zero carbon by 2050.

### Policy aims

1.2.2 Policies have been developed with the specific aim of reducing greenhouse gas emissions from Central Lincolnshire.

1.2.3 We believe that in addition to reduction of greenhouse gas emissions policies should also address wider sustainability objectives where possible. We have used Bioregional's One Planet Living framework to assess each policy. This serves to: highlight co-benefits of policies, and; cross-check policies for any potential conflicts with wider sustainability objectives.

### What the local plan can do

1.2.4 Our position statement (Task A) details the powers of the the local plan. These are summarised in the table on the right. These mechanisms are able to influence changes in different ways.

1.2.5 The local plan has the greatest influence over new development through policy requirements, however by bearing in mind the mechanisms listed on the right, it is possible for the the local plan to have a much wider influence. Indeed, our analysis of emissions reductions requirements carried out in Task C shows us that it is imperative that the local plan exercises its full influence across all sectors. In doing so, it can be consistent with overarching local, national and global zero carbon objectives.

1.2.6 This structure is used for each policy page as a framework for articulating the recommended policies and content of the local plan and its supporting documents.

Local Plan Mechanism	Description
Policy	Can be used to require compliance with details.
Material considerations	A matter that should be taken into account in deciding a planning application
Supplementary planning documents	Documents which add further detail to the policies in the local plan
Design codes	A set of illustrated design requirements that provide specific, detailed parameters.
Site allocations	Site allocations can identify sites for specific uses such as housing, employment, retail, infrastructure, renewable energy generation, etc.
Section 106 (S106)	A legal agreement between an applicant seeking planning permission and the local planning authority, used to mitigate the impact of a development that cannot meet a planning policy.
Community Infrastructure Levy (CIL)	A charge which can be levied by Local Authorities on new development in their area, and usually pay for supporting infrastructure. Rates are set at a certain cost/m <sup>2</sup> .
Local Development Orders	LDOs provide permitted development rights for specified types of development in defined locations. They are flexible and locally determined tools that LPAs can use to help accelerate the delivery of appropriate development in the right places.

**Figure 1.2 – Local Plan Mechanisms:** This table illustrates various mechanisms that can be utilised within the local plan. This table will be reproduced

## 1.3 The local plan and beyond

### Beyond the local plan

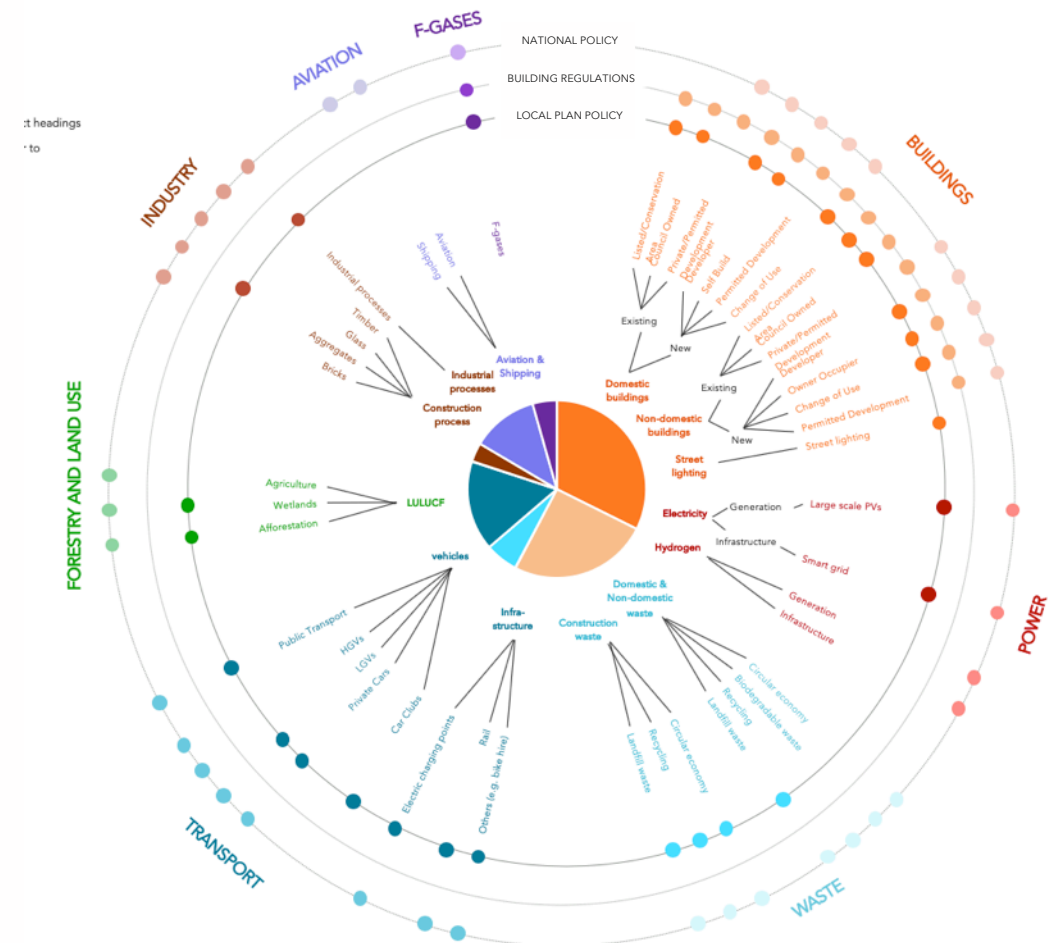
1.3.1 The control and influence of Local Authorities extends beyond their local plans and the policies within them. Local authorities will play a large role in reducing the existing emissions within their districts, including running initiatives, creating partnerships and implementing organisational level policies. These actions are beyond the local plan are outside the scope of this particular study. However, Lincolnshire County Council's Green Masterplan intends to set a direction for wider action on sustainability across the county.

### National policy and building regulations

1.3.2 National policy and building regulations will play an important role in reducing emissions. Central Lincolnshire should engage with the government to highlight areas of national policy and building regulations that impede progress towards its zero carbon goals

### Avoid policy gaps

1.3.3 Local plan policies also need to be supported by national policy, and in the case of buildings, building regulations. A policy gap map has been created to the right. All relevant sectors and emissions sources are included, and policy intervention at local or national level is indicated. This highlights the areas the local plan can have most impact, and areas the local plan has limited ability to influence.



**Figure 1.3:** Diagram highlights which areas of each sector can be affected by the local plan, building regulations or national policy. This highlights the scope of the local plan is limited, and that action must also be taken outside it to realise a zero carbon Central Lincolnshire.

## 1.4 One Planet Living

### Introduction

1.4.1 One Planet Living is a framework developed by Bioregional based on ten guiding principles of sustainability. They can be used by individuals, businesses, councils or regions to develop sustainability strategies that are holistic and joined-up. The framework is built on the principle that we only have one planet earth and that we should strive to live happy, healthy, equitable lives within the boundaries of this one planet (currently, as a country, we are consuming in ways that if every global citizen consumed in the same way, we would need four planets to sustain us).

### Relating One Planet Living to the local plan

1.4.2 Each suggested policy has been considered against each of the ten guiding principles. Where we feel the policy meets some of the objectives of the principle, this has been highlighted.

1.4.3 Equally, we have carefully reviewed the policies to ensure they are not in conflict with any of the ten One Planet Living principles. Any potential conflicts have been highlighted.



Figure 1.4: Summary of One Planet Living Framework



# Task C

## Policy Recommendations

### 2.0 Summary table of policies

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## 2.1 Table of policies

### 2.1.1 Proposed policies: Buildings – Net zero carbon new buildings

Recommended net zero carbon buildings policies.

\*indicates policies we think are essential in achieving net zero carbon aims.

A.1.0*	<b>Net zero carbon new buildings</b> All buildings should be net zero carbon and comply with policies A.1.1, A.1.2, A.1.3 and, where A.1.3 cannot be achieved, A.1.4.
A.1.1*	<b>Net zero carbon new buildings: Space heating</b>
A.1.1.a*	- All housing should achieve a space heating demand of 15-20 kWh/m2/yr.
A.1.1.b*	- All non-domestic buildings should achieved a space heating demand of 15-20 kWh/m2/yr.
A.1.1.c*	- All heating shall be provided through low carbon fuels (not fossil fuels).
A.1.1.d*	- No new developments shall be connected to the gas grid.
A.1.2*	<b>Net zero carbon new buildings: Energy Use Intensity (EUI) targets</b> All housing should achieve an Energy Use Intensity (EUI) of no more than 35 kWh/m2/yr (as calculated by TBC) Non-domestic buildings should achieved an Energy Use Intensity (EUI) of no more than the following, by building type: - TBC
A.1.3*	<b>Net zero carbon new buildings: Renewable energy</b> Renewable energy should be generated on-site for all new developments. The amount of energy generated in a year should match the predicted annual energy demand of the building. I.e. Renewable energy generation (kWh/m2/yr) = EUI (kWh/m2/yr).
A.1.4*	<b>Net zero carbon new buildings: Offsetting</b> In the first instance, Requirement A.1.3 should be met. Where this is not possible, the development can be made compliant through payment into an offset fund to balance the shortfall in renewable energy provision.
A.1.5*	<b>Net zero carbon new buildings: Assured Performance</b> All developments (domestic and non-domestic) must demonstrate use of an assured performance method in order to ensure that the buildings' operational energy performance reflects design intentions.

\*indicates policies we think are essential in achieving net zero carbon aims.

## 2.2 Table of policies

### 2.2.1 Proposed policies: Buildings – Other buildings policies

Recommended buildings policies continued. For discussion and agreement with Central Lincolnshire Local Authorities.

A.2.0	<b>New buildings: Reducing overheating</b> All future housing to be designed to achieve a Low Overheating risk using the Good Homes Alliance Overheating Risk Assessment Method
A.3.0	<b>New buildings: Promoting sustainable materials</b>
A.3.1	<b>New buildings - Promoting sustainable materials: embodied carbon</b> Embodied carbon of all new buildings to be calculated and minimised in line with latest Net Zero Carbon whole life guidance
A.3.2	<b>New buildings - Promoting sustainable materials: disassembly and re-use</b> All new buildings to be designed with principles of easy dis-assembly at end-of-life, in order that materials are more easily re-used or recycled, in line with the latest best-practice guidance.
A.4.0	<b>New buildings: Efficient use of water</b>
A.4.1	<b>New buildings: Water consuming fittings shall be specified with consideration to water efficiency.</b> - Residential developments should minimise the use of mains water in line with the Optional Requirement of the Building Regulations, achieving mains water consumption of 105 litres or less per head per day (excluding allowance of up to five litres for external water consumption)
A.5.0	<b>Existing buildings</b> Consider Local Development Orders to facilitate energy efficiency measures and renewable energy installations on all existing buildings.

## 2.3 Table of policies

### 2.3.1 Proposed policies: Renewable energy

Recommended policies for renewable energy. For discussion and agreement with Central Lincolnshire Local Authorities.

<b>B.1.0</b>	<b>Maximising renewable energy</b>
<b>B.1.1*</b>	Sites for the allocation of large scale solar photovoltaic installations should be identified.
<b>B.1.2*</b>	Sites for the allocation of onshore wind turbine installations should be identified.
<b>B.1.3</b>	Sites for other forms of renewable energy generation (e.g. anaerobic digestion from agricultural waste) should also be considered.
<b>B.1.4</b>	Sites should be allocated alongside large scale renewable energy generation installations for energy storage.
<b>B.1.5*</b>	No support for new fossil fuel based exploration, production or energy generation.

### 2.3.2 Proposed policies: Transport

Recommended policies for transport. For discussion and agreement with Central Lincolnshire Local Authorities.

<b>C.1.0</b>	<b>Supporting zero emissions transport</b>
<b>C.1.1*</b>	Electric charging points to be included in each development: 50% active / 50% passive
<b>C.1.2</b>	Cycle storage to be included on each development in line with with best practice/guidance
<b>C.1.3</b>	Preference will be given to developments which are located and designed so as to reduce the need for car travel, and support journeys made on foot, bicycle or public transport. / PTAL score based.
<b>C.1.4*</b>	New electrical charging infrastructure to be included in strategic plans and should be consistent between urban and rural areas
<b>C.1.5*</b>	Enhanced pedestrian and cycle routes in strategic plans

## 2.4 Table of policies

### 2.4.1 Proposed policies: Waste

Recommended policies for waste. For discussion and agreement with Central Lincolnshire Local Authorities.

D.1.0	Facilitating a zero waste, circular economy
D.1.1	Domestic waste storage and collection requirements to be in line with best practice/guidance.
D.1.2	Non-domestic waste storage and collection requirements to be in line with best practice/guidance.
D.1.3	Construction waste on new-build projects to achieve the following rate: recycling > 90%, diversion from landfill > 99%.
D.1.4	Allocation of sites – The local plan should seek to allocate sites for waste processing as rate of recycling and re-use of materials increase.

### 2.4.2 Proposed policies: Land-use

Recommended policies for Land-Use. For discussion and agreement with Central Lincolnshire Local Authorities.

E.1.0	Supporting land based carbon sequestration and biodiversity
E.1.1	Developments over an area threshold will be required to demonstrate that the chosen site is not a significant carbon sink.
E.1.2	Sites should be allocated for the creation of new woodlands, in order to support an increase woodland cover by at least a factor of two by 2041.
E.1.3	Development on degraded peatlands will not be supported where those peatlands can be restored. New development on peatland sites will be required to demonstrate that there is no potential for the site to become a carbon sink.
E.1.4	Urban Greening Factor in new developments to be > 0.5

# Task C

## Policy Recommendations

### 3.0 Policy one-pagers

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In this section we detail the rationale for each policy in summary form, and reference back to the relevant documents within this evidence base.

## 3.1 Policy A.1.0 : Net zero carbon new buildings

### 3.1.1 Policy Requirements

- All new buildings should be designed and built to be net-zero carbon – all energy consumption must be offset by renewable energy generation. The following requirements must be met:
  - Requirement A.1.1 - Space heating targets of 15-20 kWh/m<sup>2</sup>/yr are achieved
  - Requirement A.1.2 - Total energy use intensity targets are achieved as per building type (see policy pages for details).
  - Requirement A.1.3 - Renewable energy generation on-site balances energy consumption (over the course of a year)
  - Requirement A.1.4 – Where there is insufficient roof space or site constraints that prevent A.1.3 being achieved, payment into an offset fund to balance the shortfall must be made.
  - Requirement A.1.5 - Net zero carbon new buildings: Assured Performance - All developments (domestic and non-domestic) must demonstrate use of an assured performance method in order to ensure that the buildings' operational energy performance reflects design intentions.

### 3.1.2 Evidence of need

New buildings should be built to be net zero carbon with immediate effect in order to be able to stay within challenging remaining carbon budgets (Task C).

The recommendation is also in line with the recommendations of the Committee on Climate Change, the London Energy Transformation Initiative (LETI), the Royal Institute of British Architects (RIBA).

### 3.1.3 Feasibility

The technical and cost feasibility of the three pillars of this policy have been assessed and are discussed on the relevant pages for Requirements A.1.1, A.1.2 and A.1.3

### 3.1.4 Links to other policies

This overarching policy is reliant on all the requirement A.1.1 through to A.1.5 being met.

### 3.1.5 Implementation and monitoring

Implementation and monitoring are discussed on the relevant Requirements pages.

Local Plan Mechanism	Description
Policy	Yes. See wording to the left and for policies A.1.1, A.1.2 and A.1.3.
Material considerations	None if using policy.
Supplementary planning documents	See policy pages for Requirements A.1.1, A.1.2 and A.1.3.
Design codes	See policy pages for Requirements A.1.1, A.1.2 and A.1.3.
Site allocations	See policy pages for Requirements A.1.1, A.1.2 and A.1.3.
Planning obligations - Section 106	See policy pages for Requirements A.1.1, A.1.2 and A.1.3.
Community Infrastructure Levy (CIL)	N/A
Local Development Orders	N/A

Figure 3.1 Mechanisms of the local plan

### 3.1.6 One Planet Living



See individual policy requirement pages for One Planet Living assessments.

## 3.2 Requirement A.1.1: Net zero carbon new buildings: space heating policy

### 3.2.1 Policy Requirements

- Requirement A.1.1a - All housing should achieve a space heating demand of 15-20 kWh/m<sup>2</sup>/yr.
- Requirement A.1.1b - All non-domestic buildings should achieve a space heating demand of 15-20 kWh/m<sup>2</sup>/yr.
- Requirement A.1.1c - All heating shall be provided through low carbon fuels (not fossil fuels).
- Requirement A.1.1d - No new developments shall be connected to the gas grid.

### 3.2.2 Evidence of need

New buildings cannot continue to burn fossil fuels for heating if we are to stay within carbon budgets (Task C). Energy for space heating will necessarily come from renewably generated electricity (Task C). Off-site and on-site generation capacity limits dictate that energy must be used efficiently (Task C). By limiting space heating demand to this level, houses and some flats are able to generate all their own energy on-site, reducing the need for off-site renewable energy generation, which is naturally constrained by available resource.

The recommendation is also in line with the recommendations of the Committee on Climate Change, the London Energy Transformation Initiative (LETI), the Royal Institute of British Architects (RIBA).

### 3.2.3 Feasibility

This policy has been found to be technically feasible based on modelling analysis and case study work undertaken (Task G – Feasibility Analysis). This target range reflects best practice energy efficiency aligned with PassivHaus standards. It is also deliverable.

The cost analysis undertaken (Task F – Cost Implications) indicates a construction cost uplift of 4-6% over the current baseline in (see summary in Task G section 6.9).

### 3.2.4 Links to other policies

This policy is linked to the wider zero carbon buildings policy. It supports the achievement of the Energy Use Intensity (EUI) policy.

### 3.2.5 Implementation and monitoring

Space heating targets can be measured and submitted for approval at planning stage using PHPP (preferred) or SAP/SBEM (less accurate). As-built versions should be requested and checked.

Local Plan Mechanism	Description
Policy	Yes. See wording to the left.
Material considerations	None if using policy.
Supplementary planning documents	SPDs should give guidance on how best to achieve space heating targets.
Design codes	Design codes could be developed to support delivery and compliance.
Site allocations	N/A
Planning obligations - Section 106	N/A – we do not expect instances where this target should not be achievable.
Community Infrastructure Levy (CIL)	N/A
Local Development Orders	N/A

Figure 3.2 Mechanisms of the local plan

### 3.2.6 One Planet Living



Benefits:

- Homes cost less to heat, increasing affordability of heat, addressing fuel poverty and creating a healthier environment.
- Reduced chance of “cold spots”, eliminating damp and mould and associated health risks.

Considerations

- Increased embodied carbon due to larger volume of materials. However, analysis indicates that the increase in embodied carbon will be more than offset by the carbon saved over the life of the building.



## 3.3 Requirement A.1.2: Net zero carbon new buildings: Energy Use Intensity (EUI) target

### 3.3.1 Policy Requirement

- Requirement A.1.2a, residential - All housing should achieve an Energy Use Intensity (EUI) of no more than 35 kWh/m<sup>2</sup>/yr.
- Requirement A.1.2b, non-residential - Non-domestic buildings should achieved an Energy Use Intensity (EUI) of no more than the following, by building type:
  - Offices – 55 kWh/m<sup>2</sup>/yr
  - Schools – 65 kWh/m<sup>2</sup>/yr
  - Others building types are required to declare their energy use intensity in kWh/m<sup>2</sup>/yr.

### 3.3.2 Evidence of need

In future new buildings all energy will necessarily come from renewably generated electricity (Task C). Off-site and on-site generation capacity limits dictate that energy must be used efficiently (Task C). By total energy demand to this level, many buildings are able to generate all their own energy on-site, reducing the need for off-site renewable energy generation, which is naturally constrained by available suitable land.

The recommendation is also in line with the independent analysis of both London Energy Transformation Initiative (LETI) and the Royal Institute of British Architects (RIBA).

### 3.3.3 Feasibility

This policy has been established to be technically feasible based on modelling analysis and case study work undertaken as part of “Task D – Technical Feasibility”.

Our cost analysis shows that achieving both the space heating target (Policy A.1.1) and the EUI target would cost 6-9% over a current building regs compliant baseline (residential). Achieving the EUI target alone would cost approximately 4-9% over the baseline (residential).

### 3.3.4 Links to other policies

This policy is linked to the wider zero carbon buildings policy. It supports the achievement of the renewable energy policy, and is supported by the space heating policy.

### 3.3.5 Implementation and monitoring

A PHPP/TM54 or SAP/SBEM output should be requested at planning stage and at completion. EUI is easily measured through the energy meter. However privacy concerns make the data difficult to obtain.

Local Plan Mechanism	Description
Policy	Yes. See wording to the left.
Material considerations	None if using policy
Supplementary planning documents	SPDs should give guidance on how best to achieve space heating targets.
Design codes	Design codes could be developed to support delivery and compliance.
Site allocations	N/A
Planning obligations - Section 106	N/A – we do not expect instances where this target should not be achievable.
Community Infrastructure Levy (CIL)	N/A
Local Development Orders	N/A

Figure 3.3 Mechanisms of the local plan

### 3.3.6 One Planet Living



Benefits:

- Homes cost less to run, increasing affordability of heat, addressing fuel poverty and creating a healthier environment.

## 3.4 Requirement A.1.3: Net zero carbon new buildings: Renewable energy generation

### 3.4.1 Requirement

- Requirement A.1.3a – Renewable energy should be generated on-site for all new developments. The amount of energy generated in a year should match the predicted annual energy demand of the building. I.e. Renewable energy generation (kWh/m<sup>2</sup>/yr) = EUI (kWh/m<sup>2</sup>/yr).
- Requirement A.1.3b – Where enough renewable energy cannot be generated on-site, it must be demonstrated that at least 120 kWh/m<sup>2</sup><sub>building footprint</sub> per annum (measured in per square meter of building footprint).
- Requirement A.1.3c – Where a development of multiple buildings is concerned, policy requirements A.1.3a must be calculated and demonstrated across the whole development (i.e. buildings that are able to exceed A.1.3a requirements must do so in order to compensate for those buildings on the same site which aren't able to meet A.1.3a requirements).

### 3.4.2 Evidence of need

New buildings should be zero carbon in order that Central Lincolnshire stays within allowable carbon budgets (Task C) and new growth does not increase rates of carbon emissions. The recommendation is also in line with the independent analysis of both London Energy Transformation Initiative (LETI) and Royal Institute of British Architects (RIBA).

### 3.4.3 Feasibility

This policy has been established to be technically feasible on low density buildings based on modelling analysis and case study work undertaken as part of "Task D – Technical Feasibility". Where it is not possible to achieve targets on-site, as will be the case for residential buildings above 3 or 4-storeys and some non-domestic building types, developers should be required to pay into an energy offset fund in order that the shortfall in renewable energy provision can be provided off-site (see policy A.1.4).

The cost of enough additional PV to match energy use on the residential buildings was 2-4% of the cost of a baseline building built to current building regs (Task H – Cost Implications).

### 3.4.4 Links to other policies

This policy is linked to the wider zero carbon buildings policy. It is essential in achieving "zero carbon" developments.

### 3.4.5 Implementation and monitoring

To be decided.

Local Plan Mechanism	Description
Policy	Yes. See wording to the left.
Material considerations	Policies should state that applications will be assessed for how well they respond to the site and solar resource, and how well building design responds to the need for maximum renewable energy generation.
Supplementary planning documents	SPDs should give guidance on how best to utilise roof space effectively for renewable energy generation. Example strategies, both poor and good, should be given to illustrate how different renewable energy generation intensities are achieved. Expected ranges should be given.
Design codes	Design codes could be developed to support delivery and compliance.
Site allocations	The council should identify sites that could be used for large scale renewable energy provision funded by offset payments from developments that cannot comply with this policy.
Planning obligations - Section 106	Yes. Where the renewable energy provision to meet net zero carbon targets cannot be provided on site.
Community Infrastructure Levy (CIL)	N/A
Local Development Orders	N/A

Figure 3.4 Mechanisms of the local plan

### 3.4.6 One Planet Living



Benefits:

- On-site renewable energy generation can reduce energy bills for occupants.
- New homes are zero carbon and contribute to overall renewable energy targets.

Potential conflicts:

- Embodied carbon of PV. We have assessed this issue and found the whole life carbon of PV to be negative, i.e. PV saves more carbon than is required to make it. See Task G Feasibility Analysis Appendix

## 3.5 Requirement A.1.4: Net zero carbon new buildings: Offsetting

### 3.5.1 Policy requirements

- Requirement A.1.4 - In the first instance, Requirement A.1.3 should be met. Where this is not possible, the development can be made compliant through payment into an offset fund to balance the shortfall in renewable energy provision.
- Options and recommendations for Offsetting are discussed in Task I.

### 3.5.2 Evidence of need

Analysis shows that while some building types can feasibly achieve net zero carbon on-site, for other building types this will not be possible (Task D). It is possible for the deficit of renewable energy to be provided off-site through payment into an offset fund.

### 3.5.3 Feasibility

Offset funds are operated by many Local Authorities in the UK today (Task I) through collection of Section 106 payments. Should this mechanism be removed by the Housing Standards Review, alternative means of funding off-site renewable energy provision will be required to ensure that all new buildings are net zero carbon. Options are discussed in Task I Offsetting.

Our recommendation is that the cost of offsetting is equivalent to the cost of installing off-site renewable energy, which should represent cost parity with providing on-site renewable energy generation. Our cost analysis has indicated these costs.

### 3.5.4 Links to other policies

This policy is linked to the wider zero carbon buildings policy. It is essential in achieving “zero carbon” developments in the event that requirement A.1.3 is not achieved.

### 3.5.5 Implementation and monitoring

Estimates of renewable energy generation should be provided at planning stage. At pre-completion stage calculations will be required from an MCS accredited installer confirming expected output. Payments will be required on the shortfall of renewable energy generation compared with predicted energy consumption of the building.

Local Plan Mechanism	Description
Policy	Yes. See wording to the left.
Material considerations	Policies should state that applications will be assessed for how well they respond to the site and solar resource, and how well building design responds to the need for maximum renewable energy generation.
Supplementary planning documents	SPDs should give guidance on how best to utilise roof space effectively for renewable energy generation. Example strategies, both poor and good, should be given to illustrate how different renewable energy generation intensities are achieved. Expected ranges should be given.
Design codes	Design codes could be developed to support delivery and compliance.
Site allocations	The council should identify sites that could be used for large scale renewable energy provision funded by offset payments from developments that cannot comply with this policy.
Planning obligations - Section 106	Yes. Where the renewable energy provision to meet net zero carbon targets cannot be provided on site.
Community Infrastructure Levy (CIL)	N/A
Local Development Orders	N/A

Figure 3.5 Mechanisms of the local plan

### 3.5.6 One Planet Living



Benefits:

- Off-site renewable energy generation can be managed and structured to benefit the local community.

Considerations

- Sites for renewable energy generation should be identified in advance in order that provision of offsite renewable energy can be made in a timely manner, with minimal delay between occupation and completion of install.

## 3.6 Requirement A.1.5: Net zero carbon new buildings: Assured Performance

### 3.6.1 Policy requirements

- Requirement A.1.5 – Net zero carbon new buildings: Assured Performance - All developments (domestic and non-domestic) must demonstrate use of an assured performance method in order to ensure that the buildings' operational energy performance reflects design intentions.

### 3.6.2 Evidence of need

The actual energy performance of buildings often fails to meet the design standard. This difference is commonly referred to as 'the Performance Gap'. The Zero Carbon Hub concluded in their Evidence Review Report in 2014 that a compliance process focused on design rather than as built performance is a key contributor to the Performance gap (Task G).

### 3.6.3 Feasibility

Not applicable.

### 3.6.4 Links to other policies

This policy is linked to the wider zero carbon buildings policy.

### 3.6.5 Implementation and monitoring

Central Lincs to advise on how this may be implemented

Local Plan Mechanism	Description
Policy	Yes. See wording to the left.
Material considerations	Policies should state that applications will be assessed for how well they respond to the site and solar resource, and how well building design responds to the need for maximum renewable energy generation.
Supplementary planning documents	SPDs should give guidance on how best to provide assured performance, and schemes that can be used. E.g. PassivHaus, AECB, The Assured Performance Process (National Energy Foundation) or The Building Energy Performance Toolkit (Bioregional).
Design codes	N/A
Site allocations	N/A
Planning obligations - Section 106	N/A
Community Infrastructure Levy (CIL)	N/A
Local Development Orders	N/A

Figure 3.6 Mechanisms of the local plan

### 3.6.6 One Planet Living



Benefits:

- Ensures theoretical energy performance is achieved in practice.

Considerations

- Additional work for either the developer or the local authority.

## 3.7 Policy A.2.0 : New buildings: Reducing the risk of overheating

### 3.7.1 Policy Requirements

- Requirement A.2.1 - All future housing to be designed to achieve a Low Overheating risk using the Good Homes Alliance Overheating Risk Assessment Method

### 3.7.2 Evidence of need

Overheating, particularly in new residential buildings is becoming an increasing problem with climate change, with potentially serious consequences to health and life (Task C). Overheating risks can and should be mitigated through consideration of various factors at early design stages.

The recommendation is also in line with the following independent analysis:

- Zero Carbon Hub, "Impacts of Overheating in New Homes".
- The Committee on Climate Change, "UK Housing: Fit for the Future" report.

### 3.7.3 Feasibility

Specific aspects of technical and cost feasibility have not been assessed within this evidence base. However, with consideration at early design stages, it is expected that cost-neutral design measures can be integrated.

### 3.7.4 Links to other policies

This policy is indirectly linked to the zero carbon buildings policy, since measures to reduce cooling demand will also reduce overall energy use and result in a lower energy use intensity (EUI) (Requirement A.1.2).

### 3.7.5 Implementation and monitoring

Results of the overheating risk assessment using the Good Homes Alliance methodology should be required at design stage, and pre-completion stage.

Local Plan Mechanism	Description
Policy	Yes. See wording to the left.
Material considerations	N/A
Supplementary planning documents	SPDs should give guidance on how to mitigate overheating risk and excessive solar gain in both residential and non-residential buildings.
Design codes	N/A
Site allocations	N/A
Planning obligations - Section 106	N/A
Community Infrastructure Levy (CIL)	N/A
Local Development Orders	N/A

Figure 3.7 Mechanisms of the local plan

### 3.7.6 One Planet Living



Benefits:

- Dwellings are optimised for health and wellbeing.
- Demand for active cooling is minimised.
- Dwellings are future proofed from needing to install cooling systems which use more energy and cost more to run.

Considerations

- None.

## 3.8 Policy A.3.0 : New buildings – Promoting sustainable materials

### 3.8.1 Policy Requirements

- Requirement A.3.1 – Reducing embodied carbon: The embodied carbon of all new developments above [threshold to be agreed] to be calculated and minimised in line with latest Net Zero Carbon whole life guidance.
- Requirement A.3.2 – Disassembly and re-use: All new buildings to be designed with principles of easy dis-assembly at end-of-life, in order that materials are more easily re-used or recycled, in line with the latest best-practice guidance.

### 3.8.2 Evidence of need

At a global level our remaining carbon budget for staying within 1.5-2C temperature rise is limited (Task C). Different building materials have varying amounts of energy required to make them, from cradle to gate (Task K), and depending on the source of that energy different levels of embodied carbon. By encouraging the design and delivery of buildings with lower embodied carbon, we contribute to reducing carbon emissions at a global scale.

Section 5.6-5.10 of Task K – Embodied Energy discusses various embodied carbon initiatives. The report concludes that targets should be set for developments over a certain threshold, but may need to be introduced gradually and ramped up with time. Eventually being extended to all buildings.

If, at the end of a building's life, the building can be disassembled in a way that its constituent parts are easily reusable and retain maximum value, the life of the material can be significantly extended. In some cases indefinitely. This reduces energy demand for the extraction of raw materials and the manufacture of new building components, facilitating the global aspiration of limited carbon emissions to advised carbon budgets (Task C).

### 3.8.3 Feasibility

Technical and cost feasibility of the policy has not been specifically addressed as part of this evidence base.

### 3.8.4 Links to other policies

None.

### 3.8.5 Implementation and monitoring

To be decided.

Local Plan Mechanism	Description
Policy	Yes. See wording to the left.
Material considerations	Policies should state that applications will be assessed with consideration to embodied carbon. Policies should state that applications will be assessed with consideration to disassembly and re-use.
Supplementary planning documents	SPDs should give guidance on how to calculate embodied carbon, and strategies for minimising it. SPDs should give guidance on how to designs may respond to this policy in practice, or signpost to latest best-practice guidance. E.g the Greater London Authority's Whole Life-Cycle Carbon Assessments guidance – Draft.
Design codes	N/A
Site allocations	N/A
Planning obligations - Section 106	N/A
Community Infrastructure Levy (CIL)	N/A
Local Development Orders	N/A

Figure 3.8 Mechanisms of the local plan

### 3.8.6 One Planet Living



Benefits:

- The local economy and local jobs can benefit from the growth of a circular economy based on re-use and retention of building components.
- Consideration of these policies can reduce transport miles.
- Re-used materials have inherently lower embodied carbon, as some recycled materials also do.
- A market preference for materials with low embodied energy encourages the move to zero carbon manufacturing in the industrial sector.
- Materials re-use and recycling reduces consumption and reliance on virgin materials, and reduces energy demand thereby being consistent with a zero carbon future.

## 3.9 Policy A.4.0 : New buildings – Efficient use of water

### 3.9.1 Policy Requirements

- Requirement A.4.1 – Water consuming fittings shall be specified with consideration to water efficiency.
- Residential – Residential developments should minimise the use of mains water in line with the Optional Requirement of the Building Regulations, achieving mains water consumption of 105 litres or less per head per day (excluding allowance of up to five litres for external water consumption)

### 3.9.2 Evidence of need

Of carbon emissions associated with water, 89% are from heating water in the home. Through efficient use of hot water in the home, energy used for heating water can be reduced.

11% of carbon emissions associated with water are related to water treatment and supply. Emissions can be reasonably reduced through a reduction in total water used in buildings. See Task C – Emissions Reductions Targets for more details and evidence sources.

### 3.9.3 Feasibility

Technical and cost feasibility of the policy has not been specifically addressed as part of this evidence base.

### 3.9.4 Links to other policies

None.

### 3.9.5 Implementation and monitoring

To be decided.

Local Plan Mechanism	Description
Policy	Yes. See wording to the left.
Material considerations	Policies should state that applications will be assessed with consideration to embodied carbon. Policies should state that applications will be assessed with consideration to disassembly and re-use.
Supplementary planning documents	SPDs should give guidance on how to calculate embodied carbon, and strategies for minimising it. SPDs should give guidance on how designs may respond to this policy in practice, or signpost to latest best-practice guidance.
Design codes	N/A
Site allocations	N/A
Planning obligations - Section 106	N/A
Community Infrastructure Levy (CIL)	N/A
Local Development Orders	N/A

Figure 3.9 Mechanisms of the local plan

### 3.9.6 One Planet Living



Benefits:

- Retrofit of energy efficiency measures can improve comfort in existing buildings.
- Health of building occupants is promoted, particularly in remedying cold and damp homes.
- Local economy can be stimulated by creating a greater market for retrofit.
- Occupants can benefit from renewable energy provision and reduced energy bills.

Considerations:

- Suitable and good quality guidance should be provided to ensure that retrofit measures are carried out in a way that delivers true energy and carbon savings, and in a high quality manner.

## 3.10 Site Allocation B.1.0 : Maximising renewable energy

### 3.10.1 Site Allocation Requirements

- Requirement B.1.1 – Sites for the allocation of large scale solar photovoltaic installations should be identified.
- Requirement B.1.2 – Sites for the allocation of onshore wind turbine installations should be identified.
- Requirement B.1.3 – Sites for other forms of renewable energy generation (e.g. anaerobic digestion from agricultural waste) should also be considered.
- Requirement B.1.4 – Supporting infrastructure for electricity grid
- Requirement B.1.5 – No support for exploration or extraction of fossil fuels.

### 3.10.1 Evidence of need

The National Grid publishes annual projections for anticipated future electricity generation sources and the relative proportion of each in 2050. The scenarios reflect the UK's legal targets to be zero carbon by 2050. Each year, they project a growing demand for electricity and a significant change in how electricity is generated. Electricity generation will necessarily rely on only low and zero carbon sources of electricity. The national grid has made good progress to date with decarbonising electricity. This progress must continue, and each local authority has its part to play by making sites available for the installation of large scale renewables.

The recommendation is also in line with the following independent analysis:

- National Grid's Future Energy Scenarios 2020.
- The Committee on Climate Change, "Net Zero" report.

### 3.10.1 Feasibility

A feasibility study for large scale renewables in the region does not form part of the scope of this evidence base. However, many precedents exist in the region or nearby (Task C).

### 3.10.1 Links to other policies

A call for sites would assist the council in allocating land for large scale renewables that will be funded by new developments that cannot meet policy requirement A.1.3.

### 3.10.1 Implementation and monitoring

See relevant requirements pages.

Local Plan Mechanism	Description
Policy	To be developed
Material considerations	Material considerations to be developed.
Supplementary planning documents	SPDs could be developed to support appropriate applications.
Design codes	N/A
Site allocations	Yes. Sites are required for large scale solar photovoltaics and onshore wind turbines.
Planning obligations - Section 106	Some installations may be funded by S106 collections from new developments that have not been able to meet on-site renewable energy targets.
Community Infrastructure Levy (CIL)	N/A
Local Development Orders	N/A

Figure 3.10 Mechanisms of the local plan

### 3.10.1 One Planet Living



Benefits:

- Large scale renewable energy installations can benefit the local region. They can generate income and funding for certain causes, and provide energy at preferential rates to the community.
- By being proactive about finding sites for large scale renewables local authorities play a vital contribution to grid decarbonisation and retain some control over where they are located.

Considerations

- Level of local support



## 3.11 Requirement B.1.1-3 : Allocation of sites for large scale renewables

### 3.11.1 Requirements

- B.1.1 – Sites for the allocation of large scale solar photovoltaic installations should be identified.
- B.1.2 – Sites for the allocation of large scale onshore wind installations should be identified.
- B.1.3 - Sites for other forms of renewable energy generation (e.g. anaerobic digestion from agricultural waste) should also be considered.

### 3.11.2 Evidence of need

As per B.1.0.

The recommendation is also in line with the following independent analysis:

- National Grid Future Energy Scenarios
- Committee on Climate Change

### 3.11.3 Feasibility

Technical or cost feasibility of this particular requirement has not been assessed.

### 3.11.4 Links to other policies

This policy is linked to the wider zero carbon buildings policy where there is a need for providing additional renewable energy capacity off-site, to compensate for developments that are not able to generate enough renewable energy off-site. By having sites identified and ready, an energy offsetting is not delayed.

### 3.11.5 Implementation and monitoring

To be agreed.

Local Plan Mechanism	Description
Policy	To be developed
Material considerations	Material considerations to be developed.
Supplementary planning documents	SPDs could be developed to support appropriate applications.
Design codes	N/A
Site allocations	Yes. Sites are required for large scale solar photovoltaics and onshore wind turbines.
Planning obligations - Section 106	Some installations may be funded by S106 collections from new developments that have not been able to meet on-site renewable energy targets.
Community Infrastructure Levy (CIL)	N/A
Local Development Orders	N/A

Figure 3.11 Mechanisms of the local plan

### 3.11.6 One Planet Living



Benefits:

- Through being proactive about allocating sites, local authorities can have more control over the siting of large scale renewables, and ensure delivery in a timely manner.
- Allocation of sites can be done in conjunction with community energy organisations.

Considerations

- Reference should be made to the East Midlands Low Carbon Study referenced in AECOM's report, or a new large scale renewable energy feasibility study should be done to help identify suitable locations.

## 3.12 Requirement B.1.4 : Supporting infrastructure for electricity grid

### 3.12.1 Requirement

- B.1.4 – Sites should be allocated alongside large scale renewable energy generation installations for energy storage.

### 3.12.2 Evidence of need

Our analysis in Task E – Infrastructure, shows us that the RTPI's report "Planning for a smart energy future" recommends that local authorities engage with stakeholders to ensure supporting infrastructure can be planned for, including sites for energy storage.

District network operators require advanced notice of renewable energy installations and electrical energy demands in order to be able to ensure the network can comfortably handle additional supply and demand loads.

### 3.12.3 Feasibility

Technical and cost feasibility of this particular requirement has not been assessed.

### 3.12.4 Links to other policies

This policy is linked to the wider zero carbon buildings policy. It is essential in achieving "zero carbon" developments.

### 3.12.5 Implementation and monitoring

To be agreed.

Local Plan Mechanism	Description
Policy	To be developed
Material considerations	Material considerations to be developed.
Supplementary planning documents	SPDs could be developed to support appropriate applications.
Design codes	N/A
Site allocations	Yes. Sites are required for large scale solar photovoltaics and onshore wind turbines.
Planning obligations - Section 106	Some installations may be funded by S106 collections from new developments that have not been able to meet on-site renewable energy targets.
Community Infrastructure Levy (CIL)	N/A
Local Development Orders	N/A

Figure 3.12 Mechanisms of the local plan

### 3.12.6 One Planet Living



Benefits:

- This forward thinking policy paves the way for timely expansion of electrical infrastructure when it is needed and minimises delays that can be created in the planning process.

Considerations

- A degree of flexibility will be required since precise means of storing electricity are as yet still undecided (e.g. whether electric batteries or electrolysis plants with hydrogen and fuel cells are both possibilities).

## 3.13 Policy B.1.5 : No support for fossil fuel based exploration

### 3.13.1 Policy

- B.1.5 – Applications for fossil fuel based exploration will not be supported.

### 3.13.2 Evidence of need

At a global level our remaining carbon budget for staying within 1.5-2C temperature rise is limited (Task C). The remaining carbon budget at both a local and a global level, cannot be met if fossil fuels continue to be extracted and burnt. The economy needs to move to low carbon energy and this policy supports that.

### 3.13.3 Feasibility

Not applicable.

### 3.13.4 Links to other policies

This recommendation runs contrary to the existing Lincolnshire County Council Minerals and Waste Local Plan policy M9.

### 3.13.5 Implementation and monitoring

Not applicable.

Local Plan Mechanism	Description
Policy	Yes. See wording on the left.
Material considerations	N/A
Supplementary planning documents	List relevant SPDs if appropriate.
Design codes	N/A
Site allocations	N/A
Planning obligations - Section 106	N/A
Community Infrastructure Levy (CIL)	N/A
Local Development Orders	N/A

**Figure 3.13** Mechanisms of the local plan

### 3.13.1 One Planet Living



Benefits:

- Central Lincolnshire would not be supporting the continued expansion of the fossil fuel industry, which would be in direct contradiction with any declarations of a climate emergency.

Considerations

- None to date.

## 3.14 Policy C.1.0 : Supporting zero emissions transport

### 3.14.1 Policy

- Requirement C.1.1 – Electric car charging points to be included at all developments.
  - Houses with private parking: 1 charge point per house (100% active)
  - Communal parking areas: 1 charge per parking space (50% active, 50% passive)
  - Employment: 30% with active charge points, and 30% with passive.
  - Retail: 20% of bays with active charge points, and 20% with passive.
- Requirement C.1.2 – Cycle storage to be included in each development in line with best practice/guidance.
- Material consideration C.1.3 - Preference will be given to developments which are located and designed so as to reduce the need for car travel, and support journeys made on foot, bicycle or public transport.
- Strategic C.1.4 – New electrical charging infrastructure to be included in strategic plans and should be consistent between urban and rural areas
- Strategic C.1.5 - Enhanced pedestrian and cycle routes in strategic plans

### 3.14.2 Evidence of need

See individual Requirements pages.

### 3.14.3 Feasibility

Discussions with District Network Operators indicate that this policy is technically feasible, although the exact policy is yet to be run by them at the point of writing. Provided they are given prior notice of plans network capacity will be assessed and upgraded as required.

### 3.14.4 Critical links to other policies

These policies may be linked with wider council policies and objectives of electrifying transport in the region. Provision of charge points should precede consumer demand.

### 3.14.5 Implementation and monitoring

See individual Requirements pages.

Local Plan Mechanism	Description
Policy	Yes. See wording to the left.
Material considerations	Preference should be given to development which seek to reduce reliance on private vehicles and support sustainable modes of transport.
Supplementary planning documents	To be developed as appropriate.
Design codes	N/A
Site allocations	Yes. Sites are required for large scale solar photovoltaics and onshore wind turbines.
Planning obligations - Section 106	Some installations may be funded by S106 collections from new developments that have not been able to meet on-site renewable energy targets.
Community Infrastructure Levy (CIL)	N/A
Local Development Orders	N/A

Figure 3.14 Mechanisms of the local plan

### 3.14.1 One Planet Living



Benefits:

- Encouraging and facilitating more active forms of transport improves the health and fitness of the population.
- Improved air quality, leading to better health and fewer air quality related deaths and illnesses. Facilitating a move away from vehicles with tail pipe emissions to zero emissions vehicles reduces local air pollution.

Considerations

- None at this point.

## 3.15 Policy C.1.1 : Supporting zero emissions transport

### 3.15.1 Policy

- Requirement C.1.1 – Electric car charging points to be included at all developments.
  - Houses with private parking: 1 charge point per house (100% active)
  - Communal parking areas: 1 charge per parking space (50% active, 50% passive)
  - Employment: 30% with active charge points, and 30% with passive.
  - Retail: 20% of bays with active charge points, and 20% with passive.

### 3.15.2 Evidence of need

“Active” sockets provide an actual socket for charging. “Passive” sockets are connected to a network of cables, ready for a socket to be added at a later date.

The UK government has pledged to end the sale of new petrol and diesel cars from 2030. The electric vehicle market is growing rapidly and there are ambitious plans to roll out car charging points across the UK (section 3.9 Task C report). One of the main barriers to the transition to electric vehicles is a lack of charging infrastructure. Electric vehicles appear to be gaining much more traction than hydrogen powered vehicles at this point in time. Therefore the recommendation is to plan for this by providing charging infrastructure where it is likely to be needed.

### 3.15.3 Feasibility

Discussions with District Network Operators indicate that this policy is technically feasible, although the exact policy is yet to be run by them at the point of writing. Provided they are given prior notice of plans network capacity will be assessed and upgraded as required.

### 3.15.4 Critical links to other policies

These policies may be linked with wider council policies and objectives of electrifying transport in the region. Provision of charge points should precede consumer demand.

### 3.15.5 Implementation and monitoring

See individual Requirements pages.

Local Plan Mechanism	Description
Policy	Yes. See wording to the left.
Material considerations	N/A
Supplementary planning documents	Develop relevant SPDs.
Design codes	N/A
Site allocations	Yes. Sites are required for large scale solar photovoltaics and onshore wind turbines.
Planning obligations - Section 106	Some installations may be funded by S106 collections from new developments that have not been able to meet on-site renewable energy targets.
Community Infrastructure Levy (CIL)	N/A
Local Development Orders	N/A

Figure 3.15 Mechanisms of the local plan

### 3.15.1 One Planet Living



Benefits:

- This policy encourages car owners to make the transition to electric vehicles through providing the infrastructure that will be needed.
- Electric vehicles have no tail-pipe emissions. This leads to improved air quality, which in turn leads to better health and fewer air quality related deaths and illnesses.

Considerations

- District Network Operators should be notified of this policy, and any locations of larger developments in order that they can plan for the network to be able to support charging.

## 3.16 Requirement C.1.2 : Supporting zero emissions transport: cycle storage

### 3.16.1 Requirement

- Requirement C.1.2 – Cycle storage to be included in each development in line with best practice/guidance.

### 3.16.2 Evidence of need

Our analysis of the pace and scale of emissions reduction reductions required shows that emissions from the transport sector need to reduce by 20% annually, from 2020 (Task C). We have also identified that transport is one of the sectors with the greatest potential for emissions reductions, with technology largely already available (albeit with advances to be made). The private market indicates that electric vehicles will play a dominant role in low emissions transport and growth in sales supports this. One of the biggest barriers is access to charging points. The local plan should and must address this through requiring adequate provision on new developments.

### 3.16.3 Feasibility

Specific technical or cost feasibility of including cycle storage on new developments has not been considered as part of this evidence base.

### 3.16.4 Critical links to other policies

This policy is linked with wider council policies and objectives of encouraging more active forms of transport and a shift away from cars.

### 3.16.5 Implementation and monitoring

To be decided.

Local Plan Mechanism	Description
Policy	See policy requirement wording on the left
Material considerations	N/A
Supplementary planning documents	Develop SPDs where appropriate.
Design codes	N/A
Site allocations	N/A
Planning obligations - Section 106	N/A
Community Infrastructure Levy (CIL)	N/A
Local Development Orders	N/A

Figure 3.16 Mechanisms of the local plan

### 3.16.6 One Planet Living



Benefits:

- Journeys by bicycle may replace journeys by car leading to improved air quality, better health and fewer air quality related deaths and illnesses. Facilitating a move away from vehicles with tail pipe emissions to zero emission forms of transport reduces local air pollution.

Considerations:

- None.

## 3.17 Material consideration C.1.3 : Supporting zero emissions transport - Location

### 3.17.1 Policy

- Material consideration C.1.3 - Preference will be given to developments which are located and designed so as to reduce the need for car travel, and support journeys made on foot, bicycle or public transport.

### 3.17.2 Evidence of need

Through our analysis in Task B, we have calculated that transport emissions can become the single largest source of carbon emissions as a result of new development, particularly in the less urban locations. This becomes even more acute, where zero carbon buildings policy is applied. Reaching carbon reduction targets will be all but impossible without significant mitigation of transport impacts from new development.

### 3.17.3 Feasibility

Not applicable.

### 3.17.4 Critical links to other policies

This policy will be supported by policy C.1.5: Cycle and Walking infrastructure and with wider council policies and objectives of increase active modes of transport.

### 3.17.5 Implementation and monitoring

See individual Requirements pages.

Local Plan Mechanism	Description
Policy	N/A
Material considerations	Preference should be given to developments which are located and designed so as to reduce the need for car travel, and support journeys made on foot, bicycle or public transport.
Supplementary planning documents	N/A
Design codes	N/A
Site allocations	Related to strategic sites allocation.
Planning obligations - Section 106	N/A
Community Infrastructure Levy (CIL)	N/A
Local Development Orders	N/A

Figure 3.17 Mechanisms of the local plan

### 3.17.1 One Planet Living



Benefits:

- Encouraging and facilitating more active forms of transport improves the health and fitness of the population.
- Improved air quality, leading to better health and fewer air quality related deaths and illnesses. Facilitating a move away from vehicles with tail pipe emissions to zero emissions vehicles reduces local air pollution.

Considerations

- TBC

## 3.18 Strategic C.1.4 : Supporting zero emissions transport: electric charging infrastructure

### 3.18.1 Requirement

- Strategic C.1.4 – New electrical charging infrastructure to be included in strategic plans and should be consistent between urban and rural areas

### 3.18.2 Evidence of need

Our analysis of the pace and scale of emissions reduction reductions required shows that emissions from the transport sector need to reduce by 20% annually, from 2020 (Task C). We have also identified that transport is one of the sectors with the greatest potential for emissions reductions, with technology largely already available (albeit with advances to be made). The private market indicates that electric vehicles will play a dominant role in low emissions transport and growth in sales supports this. One of the biggest barriers is access to charging points. The local plan should and must address this through requiring adequate provision on new developments.

### 3.18.3 Feasibility

Discussions with District Network Operators indicate that this policy is technically feasible, although the exact policy is yet to be run by them at the point of writing. Provided they are given prior notice of plans network capacity will be assessed and upgraded as required.

### 3.18.4 Critical links to other policies

These policies may be linked with wider council policies and objectives of electrifying transport in the region. Provision of charge points should precede consumer demand.

### 3.18.5 Implementation and monitoring

See individual Requirements pages.

Local Plan Mechanism	Description
Policy	See policy requirement wording on the left
Material considerations	N/A
Supplementary planning documents	List relevant SPDs where appropriate.
Design codes	N/A
Site allocations	N/A
Planning obligations - Section 106	N/A
Community Infrastructure Levy (CIL)	N/A
Local Development Orders	N/A

Figure 3.18 Mechanisms of the local plan

### 3.18.6 One Planet Living



Benefits:

- Improved air quality, leading to better health and fewer air quality related deaths and illnesses. Facilitating a move away from vehicles with tail pipe emissions to zero emissions vehicles reduces local air pollution.

Considerations:

- Advances in technology may require flexibility on the precise requirements of this policy.



## 3.19 Strategic C.1.5 : Supporting zero emissions transport: cycle and walking infrastructure

### 3.19.1 Requirement

- Strategic C.1.5 - Enhanced pedestrian and cycle routes in strategic plans

### 3.19.2 Evidence of need

Our analysis of the pace and scale of emissions reduction reductions required shows that emissions from the transport sector need to reduce by 20% annually, from 2020 (Task C). In addition to a transition to zero emissions vehicles, we need to see a shift away from individual car use towards more active forms of travel.

### 3.19.3 Feasibility

Technical and cost feasibility of this policy has not been assessed.

### 3.19.4 Critical links to other policies

These policies may be linked with wider council policies and objectives of electrifying transport in the region. Provision of charge points should precede consumer demand.

### 3.19.5 Implementation and monitoring

To be agreed.

Local Plan Mechanism	Description
Policy	See policy requirement wording on the left
Material considerations	N/A
Supplementary planning documents	SPDs should be developed where appropriate.
Design codes	N/A
Site allocations	N/A
Planning obligations - Section 106	N/A
Community Infrastructure Levy (CIL)	N/A
Local Development Orders	N/A

Figure 3.19 Mechanisms of the local plan

### 3.19.6 One Planet Living



Benefits:

- Encouraging cycling and walking through better provision of infrastructure for such activities promotes health, fitness and wellbeing.
- More journeys on foot or by bike mean less journey taken by car – most of which are combustion engine vehicles, with their associated CO2 emissions and air quality issues. Therefore this policy will also lead to improved air quality, which in turn leads to better health and fewer air quality related deaths and illnesses.

Considerations:

- None at this point.

## 3.20 Policy D.1.0 : Facilitating a zero waste, circular economy

### 3.20.1 Policy

- Requirement D.1.1 - Domestic waste storage and collection requirements to be in line with best practice/guidance.
- Requirement D.1.2 - Non-domestic waste storage and collection requirements to be in line with best practice/guidance.
- Requirement D.1.3 - Construction waste on new-build projects to achieve the following rate: recycling > 90%, diversion from landfill > 99%.
- Allocation of sites – The local plan should seek to allocate sites for waste processing as rate of recycling and re-use of materials increase.

### 3.20.2 Evidence of need

Task C Emissions Reductions Requirements concludes that reductions in all sources of waste are required along with improved resource efficiency.

The recommendation is also in line with the following independent analysis:

- The Committee on Climate Change.

### 3.20.3 Feasibility

Technical and cost feasibility of these policies has not been assessed.

### 3.20.4 Links to other policies

None.

### 3.20.5 Implementation and monitoring

To be decided.

Local Plan Mechanism	Description
Policy	Yes. See wording on the right.
Material considerations	N/A
Supplementary planning documents	SPDs and best practice guidance to be developed.
Design codes	N/A
Site allocations	Yes. Sites are required for large scale solar photovoltaics and onshore wind turbines.
Planning obligations - Section 106	Some installations may be funded by S106 collections from new developments that have not been able to meet on-site renewable energy targets.
Community Infrastructure Levy (CIL)	N/A
Local Development Orders	N/A

**Figure 3.20** Mechanisms of the local plan

### 3.20.6 One Planet Living



Benefits:

- Efficient recycling of waste places less demand on natural and virgin resources, therefore conserving environments.
- Recycling of waste can be less energy intensive than production of materials from virgin resources.
- By adding value to waste, small, local economies based around waste processing can develop.

Considerations

- How waste is treated needs consideration – for example incineration of waste can lead to air quality issues.

## 3.21 Policy E.1.0 : Supporting land based carbon sequestration and biodiversity

### 3.21.1 Policy requirements

- Requirement E.1.1 - All developments above [to be agreed] hectares will be required to provide a site soil carbon analysis and demonstrate that development will neither cause the land to release a significant amount of stored carbon, nor have significant potential as a carbon sink.
- Site allocation E.1.2 - Sites should be allocated for the creation of new woodlands, in order to support an increase woodland cover by at least a factor of two by 2041.
- Material consideration E.1.3 - Development on degraded peatlands will not be supported where those peatlands can be restored. New development on peatland sites will be required to demonstrate that there is no potential for the site to become a carbon sink.

### 3.21.2 Evidence of need

Our analysis shows that the land plays a significant role in climate objectives – acting as both a source of greenhouse gas emissions, and a carbon sink. It can therefore be both a problem and a solution to climate change. The policies above help ensure that land use becomes a solution.

Our analysis of various carbon pathways in Task C show a proportion of “residual” or unavoidable carbon emissions from the economy as a whole, even after all ambitious emissions reductions actions are taken. We will rely on land based carbon sequestration in addition to technological means for removing carbon from the atmosphere.

The recommendations are also in line with the following independent analysis:

- The Committee on Climate Change Net Zero Report
- The Royal Academy of Engineering and the Royal Society’s report “Greenhouse Gas Removals”

### 3.21.3 Feasibility

No specific feasibility issues are covered by this evidence base.

### 3.21.4 Critical links to other policies - None.

### 3.21.5 Implementation and monitoring - To be determined.

Local Plan Mechanism	Description
Policy	Yes. See wording to the left.
Material considerations	Preference should be given to development that does not build on sites that are ecologically or carbon significant, or have the potential to act as a significant carbon sink.
Supplementary planning documents	N/A
Design codes	N/A
Site allocations	Yes. Sites are required for protection, restoration and new woodland and other habitat creation.
Planning obligations - Section 106	N/A
Community Infrastructure Levy (CIL)	CIL payments could be used to support funding of green infrastructure.
Local Development Orders	N/A

Figure 3.21 Mechanisms of the local plan

### 3.21.6 One Planet Living



Benefits:

- Creation of habitat for carbon sequestration can also create accessible green space for residents to explore and enjoy, enhancing wellbeing and fitness.
- Creation of new habitat is a very visible action, demonstrating to the community that the region is committed to addressing climate change. This can inspire others.
- Benefits the land, nature and biodiversity.
- Can be combined with agriculture to create a local source of food.
- Can be combined with growing of sustainable biomass for use in construction or other processes.

Considerations:

- There is limited land available and demand from various sources.

## 3.22 Policy A.5.0 : Existing buildings

### 3.22.1 Policy Requirements

We do not have specific policies to recommend with regards to existing buildings as options are limited.

We recommend that Central Lincolnshire looks at the potential of introducing Local Development Orders to areas in order to facilitate the uptake and implementation of energy efficiency measures and renewable energy technologies in and on existing buildings.

### 3.22.2 Evidence of need

Our analysis shows that existing buildings currently account for 43% of GHG emissions in Central Lincolnshire. If we allocate existing buildings a share of Central Lincolnshire's carbon budget, they would consume their budget within 7 years. It is clear therefore that tackling carbon emissions from existing buildings is of paramount and urgent importance. There are 130,000 homes in Central Lincolnshire to stay within their carbon budget gas boilers would need to be removed in the 2020s peaking at around 20,000 replacements per year – any slower pace could not stay within carbon budgets.

### 3.22.3 Feasibility

Technical and cost feasibility of the policy has not been specifically addressed as part of this evidence base.

### 3.22.4 Links to other policies

None.

### 3.22.5 Implementation and monitoring

To be decided.

Local Plan Mechanism	Description
Policy	N/A
Material considerations	N/A
Supplementary planning documents	SPDs may provide useful guidance on applying energy efficiency measures and renewables sympathetically to listed buildings and buildings in conservation areas. Indeed, guidance can be provided to assist with the effective retrofit of any building type.
Design codes	N/A
Site allocations	N/A
Planning obligations - Section 106	N/A
Community Infrastructure Levy (CIL)	N/A
Local Development Orders	LDOs may be used to allow certain types of energy efficiency/renewables measures to become permitted development.

Figure 3.22 Mechanisms of the local plan

### 3.22.6 One Planet Living



Benefits:

- Energy bills can be minimised through efficient use of water.
- Water stress can be mitigated.

Considerations:

- None

# Task C

## Policy Recommendations

### 4.0 Implementation and monitoring

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## 4.1 Monitoring implementation and progress

### Checking compliance with policies

4.1.1 Checking compliance with policies will happen at different key points in the development cycle which can be split up in two different 'moments'

- **4.1.2 Planning submission:** during pre-application discussions and during the review of the planning application, compliance with all planning policies will be verified. It is very important to establish which policies should not be subject of negotiation (e.g. Net Zero Carbon building) as it would threaten the overall legal obligation to achieve Net Zero by 2050.
- **4.1.3 Discharge of planning conditions:** it is crucial that the low carbon emissions promised at planning stage are delivered. This is an area deserves more attention. The information required from applicants to discharge these conditions (e.g. photographic evidence of construction quality, as built predicted energy use model) should therefore be established clearly for all pre-commencement and pre-occupation conditions. Planning conditions requiring the reporting of energy and carbon during the first five years of occupation should also be introduced. This is particularly crucial as the actual energy performance is what really matters.

4.1.4 The overall progress of the adoption of policies and compliant schemes can be monitored through the local authority annual monitoring mechanism.

4.1.5 Enforcement of non-compliance is essential and the associated mechanisms should be consistent with the level of checking required and resources available.

### The potential role of third party certification schemes

4.1.6 Independent environmental certification schemes are commonly used in local planning policy as they define a standard (e.g. BREEAM Excellent) and ensure that this level of performance is achieved, without placing too much demand on resource from the planning authority. We recommend development of policies that require compliance with environmental standards which are independently certified and in line with the Zero Carbon ambition, for example, Passivhaus Premium and any potential suitable Zero Carbon certification scheme in the future.

### Monitoring progress against the Net Zero Carbon target

4.1.7 The Net Zero Carbon target is calling for a higher level of monitoring. We strongly recommend tracking progress against the Net Zero Carbon pathway and creating a simple but effective data gathering and analysis protocol. This system should make use of available 'top-down' data (e.g. existing BEIS datasets, CUSPE) but also reconcile it with 'bottom-up' data (e.g. utilities, smart data).



Figure 4.1.1 Discharging the construction quality planning condition: Example of site photographs



Figure 4.1.2 Discharging the 5-year monitoring condition: Example of guidance published by the GLA

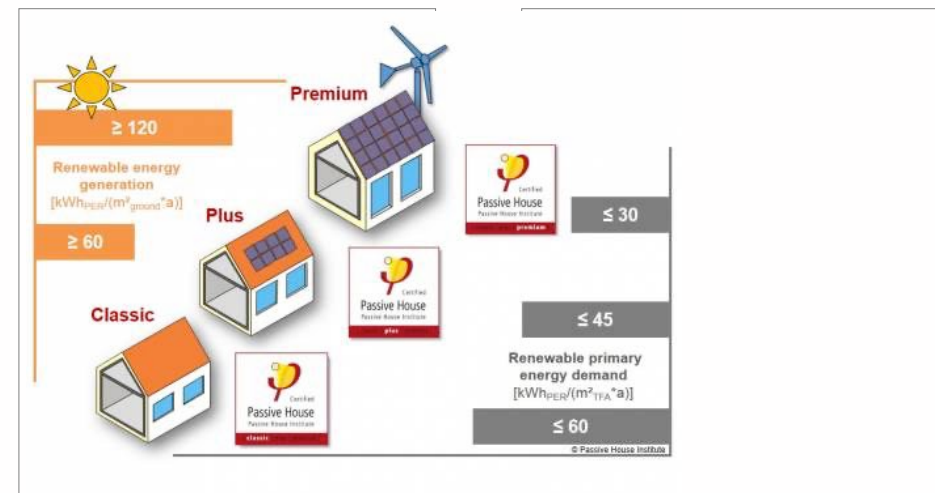


Figure 4.1.3 Third party certification scheme: Passivhaus Premium should be actively encouraged by the Local Plan

Figure 4.1.4 Tracking progress: monitoring carbon emissions against the carbon pathway is recommended if Net Zero Carbon is to be achieved

## 4.2 Compliance methods for zero carbon buildings policies

### Selecting the right compliance method

4.2.1 Ideally energy compliance methodologies already mandatory for new developments, such as Part L calculations via SAP/SBEM, would be used to ensure compliance with policy targets. However, at time of writing these methodologies are unlikely to deliver net zero carbon buildings consistently and at scale. There are existing low energy building standards, such as the Passivhaus Standard, that better predict the energy use of new developments.

4.2.2 Regardless of the calculation tool used to predict net zero carbon compliance, a rigorous quality assurance process is required throughout design and construction to ensure the “as built” performance meets the “design”. For Passivhaus this is done by the inclusion of certified Passivhaus Consultant throughout the project and the submission of evidence from contractors at key stages of the build (e.g. delivery notes, photos).

4.2.3 A quality assurance process could equally be run in-house. Central Lincolnshire would need to establish a specialised inspection programme for buildings and provide training to building inspectors.

### Utilising existing standards

7.1.4 The table below summarises possible options for verifying compliance with net zero carbon building policy elements.

Policy element	Residential	Commercial
Space heating	PHPP / SAP* calculations	PHPP / SBEM calculations
Energy use intensity	PHPP / SAP** calculations	PHPP / TM54 calculations
Renewable energy generation	Calculation from an MCS accredited installer	
Performance gap	Inherent in the Passivhaus or AECB standard process. If SAP/SBEM is used a rigorous inspection and commissioning programme may need to be established.	

\*A significant performance gap is associated with the current version of SAP. A penalty may need to be applied.

\*\*SAP does not calculate energy use from appliances and small-power, a level of post-analysis would be required to estimate the EUI.

### Passivhaus Certification

4.2.5 Passivhaus is a leading comfort and energy efficiency standard for buildings. Key requirements include meeting targets for space heating demand and total energy consumption. These metrics must be calculated using the “Passivhaus Planning Package” (PHPP) software. An independent Passivhaus Certifier will then carry out quality checks on the design calculations and inspect evidence captured during construction.



### AECB Standard

4.2.6 The AECB Building Standard aims to help deliver “high-performance buildings at little or no extra cost”. It aligns quite closely with the Passivhaus methodology. Energy calculations are carried out in PHPP, ideally by an experienced energy consultant who can also review the design and construction details. The key difference is that the energy consultant can also self-certify the project.



### SAP & SBEM calculation

4.2.7 Used to assess the energy and environmental performance of new residential and commercial buildings respectively. They are the basis for illustrating compliance with Part L of the UK building regulations. SAP and SBEM calculate energy use for heating, cooling, lighting and ventilation systems, but ignore other building energy uses such as those associated with lifts, specialist equipment and small power loads.



### TM54 calculation

4.2.8 CIBSE published TM54 “Evaluating Operational Energy Performance of Buildings at the Design Stage” in 2013 to help tackle the performance gap. It provides guidance on how to calculate the total energy use of a new building more accurately at design stage. The guide suggests dynamic simulation modelling is used to assess heating and cooling. It also provides steady state methodologies for calculating other areas of energy consumption.





## 4.3 Assured Performance methods for zero carbon buildings policies

### The Performance Gap

4.3.1 The actual energy performance of buildings often fails to meet the design standard. This difference is commonly referred to as 'the Performance Gap'. The Zero Carbon Hub concluded in their Evidence Review Report in 2014 that a compliance process focused on design rather than as built performance is a key contributor to the Performance gap<sup>[9]</sup>. Closing the Performance Gap requires action at various stages through the design, construction and post occupancy phases of development

### Accurate Modelling

4.3.2 Modelling to predict the energy performance of buildings is most often carried out in order to demonstrate regulatory compliance. Calculations for regulatory compliance do not account for all energy uses in buildings. There are calculation and modelling platforms that are more comprehensive, most notably the Passive House Planning Package (PHPP) but not all developers have ready access to these.

4.3.3 Policy should be that if developers use a comprehensive modelling package, such as PHPP, then the results can be used directly in submitted energy statements. But if developers prefer to use a compliance software package such as the Standard Assessment Procedure (SAP) for residential buildings or the Simplified Building Energy Model (SBEM) for other building types, then an uplift of a standard amount should be applied particularly when calculating renewable energy requirements to meet the zero carbon targets, to account for the uses not modelled.

4.3.4 Future development of SAP may begin to address this concern, and if so, the degree of uplift, or the need for any uplift at all, can be reviewed.

### Construction Quality Management

4.3.5 Ensuring that buildings are constructed in accordance with the design has become increasingly important as energy targets have improved. In standard, 'business as usual' construction, a check on the thickness of insulation installed was good enough, but in a low energy building, there has to be far more emphasis on the detail. Building Control have limited attendance on site, so monitoring these details in every case is not practicable through that agency. Therefore another process of construction quality management is needed.

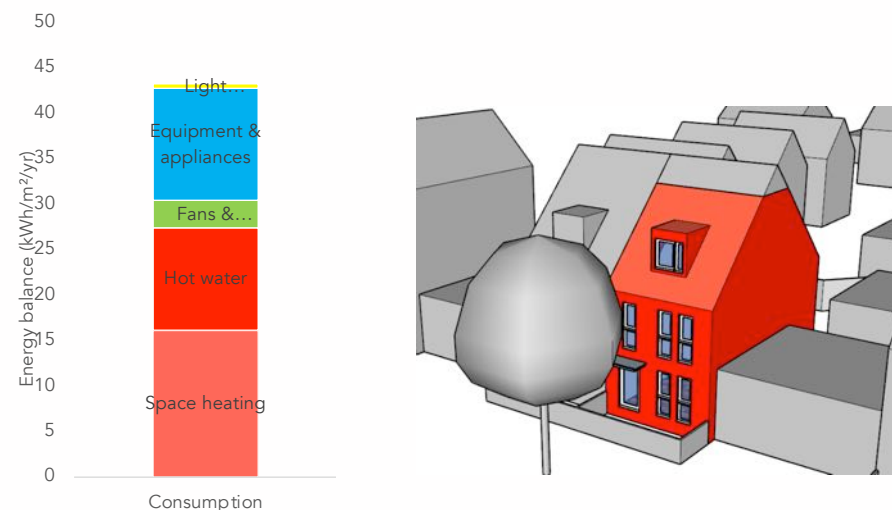


Figure 4.3.1 - PHPP modelling considers all energy uses in a building to predict the energy performance, including energy for uses and appliances that are excluded from Building Regulations compliance calculations. © Etude

### Typical window/door lintel (E2)

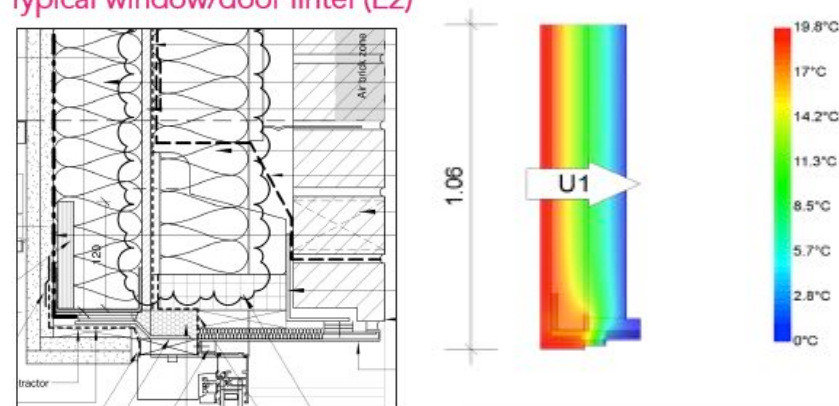


Figure 4.3.2 - The design of every key junction in a low energy building may be modelled and relied upon for the overall energy performance of the building © Etude

Calculation by: Etude  
Calculated  $\Psi$ -value: 0.054W/mK



## 4.4 Assured Performance continued

### Assured Performance Schemes

4.4.1 It is recommended that policy requires the adoption of an assured performance scheme. The choice of scheme can be left open, to suit each project and the capability of the project team.

4.4.2 There are a number of Assured Performance schemes, such as Passive House Certification or the AECB Building Standard. Passive House relies on independent certification, whereas the AECB standard can be certified by a member of the design team if they have the requisite skills. Both standards can be used for residential and non-residential development.

4.4.4 The Better Buildings Partnership have recently launched NABERS UK, which is an energy rating scheme based on actual performance data, specifically aimed at commercial buildings.

4.4.5 For residential developments, other potential Assured Performance schemes include The Assured Performance Process (APP) created by the National Energy Foundation (NEF) and The Building Energy Performance Improvement Toolkit (BEPIT) managed by BioRegional, either of which could provide the necessary oversight framework.

4.4.6 An Architect's certificate, or now the Professional Consultant's Certificate, certifies practical completion but currently there is no specific obligation to certify environmental performance. However, the Royal Institute of British Architects and the Architects Registration Board, along with other construction industry professional bodies, now have environmental initiatives relating to net zero ambitions and environmental performance<sup>[10]</sup> and the targets they advocate may in future be brought into definitions of Practical Completion. It is also possible that in future, new home warranty providers could offer this service.

### Post Occupancy Monitoring

4.4.7 The extent to which the Performance Gap is driven by the occupants of buildings not using the installed systems to their best efficiency is not well understood. Post Occupancy Evaluations (POEs) can highlight where there are differences and 'soft landings'<sup>[11]</sup> programmes in public sector and commercial buildings seek to better train the users of buildings on how to control the installed systems. The take up of both in the UK is low and reliable data on the real performance of buildings as compared to the design is not widely available. A small number of studies have been published to collate what data there is, such as the Building Performance Network 'State of the Nation' report.<sup>[11]</sup>

4.4.8 Privacy concerns inhibit private sector developers from carrying out extensive POEs especially in residential developments. Mandatory participation in POE exercises is therefore not reasonable. However, developers should be encouraged to carry out POE studies in order ultimately to prove that the Performance Gap has been closed in practice.



## 4.5 Impact of future changes to national policy and regulations

### The legal status of Net Zero Carbon

4.5.1 On 27<sup>th</sup> February 2020, the Court of Appeal ruled that plans for a third runway at Heathrow airport had been produced unlawfully. One of the key reasons for these decisions appears to be that the 'Airports National Policy Statement: new runway capacity and infrastructure at airports in the South East of England' was prepared without reference to the Government's commitment to the provisions of the Paris Agreement on climate change, which meant that it was not compliant with section 5(8) of the Planning Act 2008, which requires consideration of the Government's policy in relation to climate change.

4.5.2 This ruling illustrates the requirement for planning policy to be developed in light of the Government and the Council's commitment in terms of climate change.

### The Climate Change Act

4.5.3 The Climate Change Act (2008) has been amended in 2019 to reflect the Government's commitment to phase out carbon emissions by 2050. It is reasonable to expect that with this legal foundation in place local plans being developed now do not only have the ability, but the legal obligation to incorporate policies which are consistent with this Act.

### Consultation on Part L 2020 and the Future Homes Standard 2025

4.5.4 The Government is currently consulting on proposed changes to Part L of the Building Regulations. The consultation focuses mainly on Part L 2020 but also includes a timetable and an indicative sense of ambition for the Future Homes Standard in 2025.

**4.5.5 Part L 2020.** The consultation includes proposals which would, if adopted, conflict with a large proportion of the recommendations of this document for new housing as this would include removing the ability of local authorities to set their own energy targets.

**4.5.6 The Future Homes Standard.** This is the most relevant element of the discussion as the Future Homes Standard is scheduled to come into force in 2025, i.e. very soon after the Local Plan would come into force. Details about the Future Homes Standard are not scheduled to be available until 2024 though.

### Evolution of definitions and guidance

4.5.7 This evidence base has been developed using the latest guidance available on Net Zero Carbon, including the definition of Net Zero Operational Carbon and guidance on embodied carbon. Policies must be developed to be flexible and work with future definition, standards and guidance as they become available.



**Figure 4.5.1 The need to be consistent:** The recent ruling on the third runway at Heathrow Airport highlights the need for planning policy to be consistent with national and local commitments to mitigate climate change and significantly reduce carbon emissions.

[03] Royal Institute of British Architects (2019) *2030 Climate Challenge*

[09] Zero Carbon Hub (2014) *Performance Gap Evidence Review Report*

[10] BSRIA 2020, *About Soft Landings*, <<https://www.bsria.com/uk/consultancy/project-improvement/soft-landings/about-soft-landings/>>

[11] Building Performance Network (2020) *State of the Nation Review: Performance evaluation of new homes*