Bath & North East Somerset

Local Plan (Core Strategy /Placemaking Plan) 2011-2029

Partial Update

Options Consultation

January 2021

Topic Paper: Zero Carbon Construction

Bath & North East Somerset Council

Improving People's Lives

Zero Carbon Construction Policy Review

1. Introduction

1.1 Bath and North East Somerset has declared a climate emergency and has committed to providing the leadership for the district to be carbon neutral by 2030. This will contribute to the UK's legally binding target of net zero carbon by 2050. There are three key priorities to achieve this which are;

- Energy efficiency improvement of the majority of existing buildings (domestic and non-domestic) and zero carbon new build;
- A major shift to mass transport, walking and cycling to reduce transport emissions;
- A rapid and large-scale increase in local renewable energy generation.

1.2 As part of this work the council is seeking to update their adopted policies on climate change including net zero carbon construction.

2. Policy Context
National Policy

2.1 Paragraph 148 of the National Planning Policy Framework states that;

The planning system should support the transition to a low carbon future in a changing climate, taking full account of flood risk and coastal change. It should help to: shape places in ways that contribute to radical reductions in greenhouse gas emissions, minimise vulnerability and improve resilience; encourage the reuse of existing resources, including the conversion of existing buildings; and support renewable and low carbon energy and associated infrastructure.

2.2 Paragraph 150 states that

New development should be planned for in ways that:

a) avoid increased vulnerability to the range of impacts arising from climate change. When new development is brought forward in areas which are vulnerable, care should be taken to ensure that risks can be managed through suitable adaptation measures, including through the planning of green infrastructure; and

b) can help to reduce greenhouse gas emissions, such as through its location, orientation and design. Any local requirements for the sustainability of buildings should reflect the Government's policy for national technical standards.

2.3 Current Building Regulations Restrictions

The Planning Practice Guidance states that

The Written Ministerial Statement on Plan Making dated 25 March 2015 clarified the use of plan policies and conditions on energy performance standards for new housing developments. The statement sets out the government's expectation that such policies should not be used to set conditions on planning permissions with requirements above

the equivalent of the energy requirement of Level 4 of the Code for Sustainable Homes (this is approximately 20% above current Building Regulations across the build mix).

Provisions in the Planning and Energy Act 2008 also allow development plan policies to impose reasonable requirements for a proportion of energy used in development in their area to be energy from renewable sources and/or to be low carbon energy from sources in the locality of the development.

2.4 Any policy on zero carbon construction must adhere to these parameters. Therefore, any policy must not require fabric improvements that are 20% above the current minimum building regulations standards. But further carbon savings can be made through the provision of renewable energy and allowable solutions. As such any carbon savings that can be made through fabric improvements is limited, however further carbon savings can then be required through renewable energy and allowable solutions to achieve zero carbon. Allowable solutions area financial contributions which are secured through a legal agreement. The contributions are then used as a carbon offset fund to fund projects such as renewable energy schemes and retrofitting of existing buildings.

2.6 Future Homes Standard Consultation

2.7 The Future Homes Standard consultation was run by the government in early 2020. The aim is to reduce operational emissions from new dwellings. It proposes to achieve this by amending Building Regulations Part L1A and Part F in two stages over the next few years. Alongside this it is proposed to enact the requirements of Section 43 of the Deregulation Act 2015 which would restrict councils from setting their own standards on fabric efficiency for new or existing dwellings above what is required by building regulations.

2.8 The Future Homes Standard includes two options;

Option 1 – a 20% carbon reduction through fabric performance

Option 2 – a 31% reduction through fabric and renewables

Consultation on the future homes standard closed in early 2020. The responses are currently being analysed by the government. It is envisaged that the proposals will not restrict further carbon saving being made through the provision of renewable energy.

3 Changes since the adoption of the Placemaking Plan

3.1 Since the adoption of the Placemaking Plan in 2017 the council has declared a climate emergency. The council has updated their evidence base (see below) with regards to the practicality and costs of working towards a zero carbon construction policy. It is proposed in the Local Plan Partial Update to include a zero carbon construction policy which will be viability tested, alongside other policy requirements, utilising the costs evidence referenced below.

3.2 The contribution of renewable energy to the grid has risen from under 5% in 2004 to over 30% in 2018. This trend of “grid decarbonisation” is set to continue in the coming decades.

4 Local Policy

4.1 Core Strategy adopted 2014

CP1- Retrofitting Existing Buildings

CP2 – Sustainable Construction

CP3 – Renewable Energy

4.2 Placemaking Plan adopted 2017

SCR1 – On-site Renewable Energy Requirement

SCR2 – Roof-mounted/Building-integrated Scale Solar PV

SCR3 – Ground-mounted Solar Arrays

SCR4 – Community Renewable Energy Schemes

4.3 To ensure compliance with the above polices planning applications are required to be accompanied by a sustainable construction checklist. The checklist requires information on, energy, district heating, water, overheating, and sustainable construction. The checklist compares the figures between the target emission rate and the building emission rate to establish the carbon reduction. The checklist includes an exemption for buildings built to passivhaus design.

5 Evidence Base

Cost of Carbon Reduction in New Buildings, Currie and Brown, December 2018
Details the cost of implementing sustainable construction measures. Analysis suggests that it is possible to achieve net zero regulated carbon emissions from a combination of energy efficiency on site carbon reductions and allowable solutions for an additional capital cost of between 5-7% for homes and non-domestic buildings. Achieving net zero regulated and unregulated emissions is likely to result in a cost increase of 7-11% for homes. The costs of achieving these standards are likely to fall overtime both because of reducing technology costs but particularly because reducing carbon intensity of grid electricity means that the carbon emissions of new homes will be lower than the level estimated by current regulatory compliance methods.
West of England Cardon Reduction Requirement Study – Carbon Offsetting in the West of England, Centre for Sustainable Energy, January 2019
This report sets out how the cost of carbon offsetting would operate. The report recommends that the carbon price should be set at £95/ tonne CO2, either within the Local Plan policy itself (subject to review every 5 years), or adopting the approach of the London Plan, within Supplementary Planning Documentation. Such payments would need to be secured by way of a section 106 agreement or unilateral undertaking.

6 Examples from Other Authorities

6.1 Below are examples of carbon reduction requirements recently adopted by other authorities.

London	• 35% reduction beyond building regs requirements for major developments. Residential should achieve 10% and non-resi 15% through energy efficiently measures. Any shortfall is met through financial contribution or off site provision. Boroughs have to administer offset funds. • Major developments should calculate and minimise unregulated emissions • Developments referred to the mayor should include whole life cycle assessments • Encourages use of BREEAM
Reading	• Major non-residential required to achieve BREEAM Excellent, Minor non residential require to achieve very good. Regard must be had in conversions to residential. • All developments must show adaption to climate change
Milton Keynes	• Includes option to achieve a BREEAM rating rather than meeting requirements • Fabric first and passive design to minimise energy demand • Large sites to achieve a 19% fabric reduction over building regulations. A further 20% is required using on site renewables. Residual emissions are offset using allowable solutions.
Oxford	• Seeks to maximize energy efficiency, conserve water, use recycled materials that are sourced responsibly, minimise waste, minimize flood risk, be flexible, enhance biodiversity • Requires submission of an energy statement. • 40% reduction in carbon emissions, increase to 50% in 2026 and zero carbon by 2030. • Non-residential to meet BREEAM excellent in addition to carbon reduction requirements. • Encourage heat networks • Inspectors report has removed monitoring requirements.

7 <u>Proposed Policy Changes</u>

7.1 The following policy proposals are based on the current evidence base which has provided details of the cost uplift of zero carbon construction measures.

7.2 Policy SCR1 currently seeks to reduce carbon emissions in major development by at least 10% through the provision of on site renewable energy. The proposed zero carbon policy is also closely linked with policy CP2 of the Core Strategy which sets out the councils policy on sustainable construction. Therefore, it is proposed in the Local Plan

partial update to replace policies SCR1 and CP2 with the new zero carbon sustainable construction policy.

7.3 As stated above the Future Homes Standard will require enhanced fabric performance through building regulations and prevent local authorities from requiring better fabric performance above building regulations. Therefore, listed below are two scenarios to achieve zero carbon development dependent on whether the future homes standard comes forward.

7.4 **Definition of zero carbon and Standard Assessment Procedure**

7.5 The proposed policy seeks to achieve zero carbon whereby energy use regulated by Part L of the building regulations, including energy used for space heating, hot water and lighting together with directly associated pumps (for circulating water) and fans (e.g. for ventilation), is subject to zero carbon requirements.

7.6 To calculate the carbon reduction the Target Emission Rate of a dwelling is compared with the Dwelling Emission Rate. The Target Emission Rate is calculated by modelling a home of the same form and size but built to the minimum standards required by Building Regulations. This is then compared against the proposed Dwelling Emission Rate to calculate the percentage carbon reduction.

7.7 SAP (Standard Assessment Procedure) is a procedure by which the energy performance of a home is assessed, it is the typical method used for the purposes of assessing compliance with Building Regulations Part L1a.

7.8 The proposed policies will seek percentage reduction from the building regulations requirements.

Consultation Reference: DM1 Net Zero Carbon Construction Policy:

New Build Residential Development

(amending and updating/replacing Policy CP2 and SCR1 Residential Development)

Option 1 – If the Future Homes Standard is not implemented

- A minimum operational CO2 emissions reduction of 10% through fabric performance from a baseline of Building Regulations Part L 2013
- A minimum operational CO2 reduction of 35% through on-site renewable energy
- Then offset remaining operational emissions that can't be mitigated on site through a financial contribution.

Option 2 – If the Future Homes Standard is implemented as proposed

If the Future Homes Standard is brought forward then it is proposed that the new Part L requirements are used as a starting point for delivering net zero carbon construction.

The policy would require the higher fabric standards set out in the Future Homes Standard 2025 with the remainder of the carbon emissions mitigated through renewable energy. Any remaining emissions that cannot be mitigated onsite could be offset through financial contributions to achieve net zero carbon in operation.

For both options, the Passivhaus Plus standard will be considered as an alternative route to policy compliance.

7.9 The proposals outlined in the Future Homes Standard only apply to residential buildings and proposals for non-residential buildings are yet to be consulted on.

7.10 Options for Non-Residential Buildings

7.11 The BREEAM Excellent standard is being considered for major developments in addition to the net zero carbon policy. BREEAM Excellent certification requires developers to address a holistic range of sustainable construction elements that would otherwise not be covered by local policy. BREEAM is an internationally recognised, widely used methodology that includes a robust certification process to validate the sustainability value of a development.

Consultation Reference: DM2: New Build Non Residential Development

(amending and updating/replacing Policy CP2 and SCR1 Non-residential development)

Proposed policy would use an energy hierarchy to achieve zero carbon as follows.

- A minimum reduction of 15% through fabric performance
- A minimum reduction of 35% through on-site renewable energy
- Then offset what can't be mitigated on site through a financial contribution

A policy to require major development with 1,000m2 or more non-residential floorspace to achieve BREEAM Excellent Standard is being considered.

7.12 Heat and Cooling hierarchy

7.13 For both residential and non-domestic buildings, a heat and cooling hierarchy policy will be considered as follows:

1.Development will be expected to minimise demand for heating, cooling, hot water, lighting and power through building and site-level measures.

2.Residual heat and cooling demand is expected to be met using renewable heat sources whilst complying with District Heating Policy CP4.

7.14 The proposed policy has been drafted to work within the parameters set at the national policy level.

Consultation Reference DM3 Retrofitting Existing Buildings

Amendments to Policy CP1

Option 1: Introduce a requirement that regulated carbon emissions are reduced by 10% from a baseline of Part L through use of renewable energy

Option 2: Introduce a requirement that regulated carbon emissions are reduced by 20% from a baseline of Part L through use of renewable energy

The above policies could continue to apply to proposals for existing buildings and the scale and type of proposal covered by the policy is being considered; currently it is for development of a medium scale or higher (5 dwellings or 500m2)

Applications for change of use to Houses of Multiple Occupation (HMOs) are required to achieve and Energy Performance Certificate "C" rating or above. An option for a financial contribution or fabric improvements is being considered if, due to the nature of the building, the renewable energy requirement cannot be met onsite. A heat hierarchy policy expects proposals to use renewable heat sources (e.g. ground and air sourced heat pumps and solar thermal panels) whilst referencing the opportunities for heat networks in the areas set out in Policy CP4

7.15 In the case of existing buildings the Sustainable Construction Checklist currently requires a 10% reduction from either renewables or energy efficiency. It is proposed to amend the policy text of policy CP1 to reflect this. There is also an option to increase this requirement to a 20% reduction.

7.16 The current policy approach encourages the retrofitting of existing buildings. It should be noted that a lot of retrofitting measures such as solar panels and insulation do not require planning permission.

7.17 A lot of smaller scale micro generation projects do not require planning permission. The general permitted development order allows for the installation of solar panels, but places restrictions within article 2(3) land (Conservation Areas, World Heritage Sites, AONB). Any works to a listed building would require a separate application for listed building consent.

7.18 The council's Energy Efficiency and Renewable Energy Guidance for Listed Buildings and Undesignated Historic Buildings provides guidance. The (Planning) Heritage and Design section of the council's website also links to guidance at local and national level with regards to retrofitting historic buildings.

7.19 Whole Life Cycle Carbon Assessments

7.20 Whole Life-Cycle Carbon (WLC) emissions are the carbon emissions resulting from the building materials, construction and the use of a building over its entire life, including its demolition and disposal. A Whole Life Cycle Carbon assessment provides a true picture of a building's carbon impact on the environment. For example it takes account of the embodied energy of the materials.

7.21 Whole Life Cycle Carbon Assessments have been introduced by the Greater London Authority in the draft London Plan and there is an opportunity to learn from the London approach. The policy in London requires a Whole Life Cycle Carbon Assessment for applications that are referred to the mayor which includes developments of over 150 dwellings. The policy currently only requires the assessment to be submitted, there is

no required threshold in terms of carbon emissions, however individual boroughs can set thresholds.

7.22 The West of England Authorities are working towards updating the evidence base to explore the possibility of introducing Whole Life Cycle Carbon Assessments as part of future policy.

Consultation Reference DM 4

New Policy Whole Life Cycle Carbon Assessment

The use of a performance threshold to demonstrate reduction in the Whole Life Cycle carbon emissions of new buildings is being considered

Option 1: For all large scale major developments. Large scale major developments are defined as more than 50 dwellings or 5,000m2 or more of floor space.

Option 2: For all major development defined as 10 dwelling units or 1000m2 or more of non-residential floor space.

Measures that can be taken by smaller scales of development are also being considered.

7.23 CP 4 - District Heating

7.24 Policy CP4 of the Core Strategy sets out the council's policies on District Heating. The policy identifies three district heating priority areas of Bath City Centre, Bath Riverside and Keynsham High Street.

7.25 The existing Policy CP4 has supported work to explore a renewable heat network in the Bath Enterprise Zone, as described in the Sustainable Construction Checklist Supplementary Planning Document Heat Networks Guidance Note.

7.26 The adopted policy also proposed a district heating network at Keynsham Town Centre. The majority of land allocated for development in Keynsham Town Centre such as the Civic Centre has been built out. Therefore, it is unlikely district heating would be brought forward in Keynsham Town Centre and this part of the policy is proposed to be removed.

7.27 Policy approach

7. 28 The policy will be retained to allow for future projects to come forward within the district, but Keynsham Town Centre will no longer be listed as a priority area and will be re-classified as an opportunity area.