UK's first local Net Zero Carbon planning policy likely to drive more efficient buildings and cut energy bills: Review

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The new planning policy makes Bath and its surroundings, known for historic architecture, an important testbed for future national regulations. Credit: Nic Delves-Broughton / University of Bath

The UK's first Net Zero Carbon planning policy is likely to establish significant carbon savings in new buildings and reduce energy bills for

occupants, a study has found.

A review led by University of Bath researchers into the first six months of the UK's first Net Zero Carbon construction policy, implemented by Bath & North East Somerset Council (B&NES), has found that most planning applicants broadly support the intentions of the policy, while highlighting concerns about increased planning and construction costs, and awareness of the scheme.

Introduced in January 2023, the new policy is the first of its kind to be adopted by a local authority and goes beyond the current UK Building Regulations. It covers both the operational or day-to-day emissions (of heating, powering and cooling), as well as the 'embodied' emissions that are released in a building's construction and maintenance.

The policy requires that all new residential and major non-residential building developments achieve net zero operational energy, by meeting ambitious energy consumption targets and matching consumption with on-site renewables with offsetting allowed only in exceptional circumstances.

All major developments must also demonstrate an embodied carbon value below a threshold value—something not required in the current national regulations—with no offsetting permitted.

The report authors found that every compliant application submitted during the review period included solar photovoltaics and heat pumps—indicating a strong consensus that currently, they are key technologies in efforts to achieve net zero.

The new framework makes Bath and its surroundings, known for historic architecture, an important testbed for future national regulations and local planning policies.

Contributors to the report include planning staff from B&NES, representatives from the South West Net Zero Hub, Chapter 2 Architects and the sustainability consultancy Bioregional.

Researchers from the University of Bath's Department of Architecture & Civil Engineering studied every planning application made to B&NES between the introduction of the policy in January 2023 and July 2023, before following up with applicants with a questionnaire. They found that more than half (55%) of planning applications were non-compliant, primarily due to a lack of awareness of the policy.

Applicants were unanimous in their concern around the cost of meeting the new guidelines, with costs attributed to hiring additional consultants, constructing higher performing buildings and generating renewable energy on site.

Dr. Will Hawkins, principal investigator of the report, is a lecturer in the University of Bath's Department of Architecture & Civil Engineering. He said, "Buildings directly account for a quarter of the UK's greenhouse gas emissions, so early pioneers like Bath & North East Somerset Council can have big impacts both locally and further afield. Our collaboration aims to maximize the benefits for builders, developers and building occupiers, as well as the environment."

"We found evidence that this policy is likely to make all new buildings much more energy efficient and will also boost the introduction and take-up of renewables, compared to the previous guidelines. This isn't fully proven yet as the buildings are still to be built, but the evidence available so far is very encouraging in terms of carbon reduction."

Councilor Matt McCabe, B&NES Cabinet Member for Built Environment and Sustainable Development, said, "The changes we made, through the adoption of the Local Plan Partial Update (LPPU) put

Bath & North East Somerset at the forefront nationally with policies related to the climate and ecological emergencies."

"I am proud that the council was the first Local Planning Authority (LPA) in England to have an adopted Local Plan policy requiring a net zero energy based requirement for new housing and we are the first in the West of England to adopt a biodiversity net gain (BNG) policy. This is the bedrock for the council's climate emergency ambitions and I am encouraged by the outcome of the review and its findings."

Dr. Elli Nikolaidou, author of the report and building engineer in the South West Net Zero Hub, added, "We hope this report will inform the future development and implementation of effective net zero carbon construction policies in B&NES and elsewhere. We welcome any feedback that could help us expand this study and ultimately improve local planning policies."

Other issues uncovered in the study include questions around the achievability of air permeability targets, lack of transparency in applications, and difficulties in matching renewable generation to demand in tall buildings.

The authors are now seeking to carry out a longer-term study, which they say is needed to track the evolving industry response, quantify the real emission savings through construction and occupation, and engage with stakeholders to support the policy's implementation, further development, and wider impact.

This would include investigating the policy response from a social science perspective and investigating a varied sample of key projects over the full cycle of construction and occupation to assess compliance and measure real emissions and energy use.

More information: Joris Simaitis et al, Pioneering Net Zero Carbon Construction Policy in Bath & North East Somerset: Investigating the industry's response to the introduction of novel planning policies, *University of Bath*, (2023). DOI: 10.15125/BATHRO-297388880 researchportal.bath.ac.uk/en/p … y-in-bath-amp-north-

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