



DEFINITION OF 'ZERO CARBON HOMES AND NON-DOMESTIC BUILDINGS' CONSULTATION

OVERVIEW

Issued 30th January 2009

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FULCRUMCONSULTING

Fulcrum is an international team of leading consulting engineers. Our objective is to facilitate the ongoing development of a low-impact built environment in a way that harnesses innovation and is compatible with economic reality and occupant expectations in terms of comfort, functionality and beauty.

As part of our 2009 debate series, March sees us discussing the recent Government consultation on 'the definition of zero carbon homes and non-domestic buildings'. We expect a lively debate around the hierarchical approach proposed by Government and the list of 'allowable solutions' on offer to achieve 'zero carbon' status. The event will be held in our London office on March 11th from 6pm.

For further information on any of our debates, please contact natasha.eyre@fulcrumfirst.com

1 INTRODUCTION

On December 17th 2008 the Department for Communities and Local Government (CLG) published a consultation on the definition of zero carbon homes and non-domestic buildings¹. The document follows on from a report published by a task group convened by the UK Green Building Council (UK-GBC) in order to review the definition of 'zero carbon' as stated in the Code for Sustainable Homes (CSH).

1.1 UK-GBC REPORT

The UK-GBC report on the definition of 'zero carbon'² found that the current requirements for 'zero carbon' may result in up to 80% of new homes being unable to meet the definition (regardless of capital cost). The report therefore considered that Government had three main options:

1. deliver fewer homes that meet the current definition of 'zero carbon'
2. reduce the requirement for carbon savings from new buildings
3. find a suitable mechanism for allowing off-site solutions where on- and near-site installations are not practicable or are prohibitively expensive

Recommendations

The task group concluded that, in order to maintain the ambition of the original policy, a revised definition of 'zero carbon' would be required that allows the use of off-site solutions in certain circumstances.

As a basis for this definition the group made the following recommendations:

1. All new buildings should meet strict minimum energy efficiency parameters as part of the definition of 'zero carbon', including installation of energy efficient appliances where supplied by the developer.
2. Mitigation of predicted CO₂ emissions from all energy uses should be sought via on- or near-site solutions. Where this is not possible, a minimum level of CO₂ mitigation must be required on- or near-site
3. Above the on-/near-site threshold either:
 - a. Off-site solutions could be allowed, without requiring private wire networks, provided that they have been built specifically to deliver the energy needs of the proposed development.
 - b. The developer could be allowed to pay into a 'Community Energy Fund' that will ensure equal or greater net carbon savings are delivered through new installations of low or zero carbon technologies and infrastructure.

The group acknowledged that allowing unrestricted access to cheap off-site solutions was not conducive to long-term sustainable development and discussed setting the cost of paying into the fund relative to on- and near-site technologies in order to incentivise developers to go further wherever possible.

The report also stated that "*alignment of domestic and non domestic definitions [is] important to ensure the benefits of mixed used schemes could be delivered in reality*".

¹ <http://www.communities.gov.uk/publications/planningandbuilding/zerocarbondefinition>

² <http://www.ukgbc.org/site/resources/showResourceDetails?id=180>

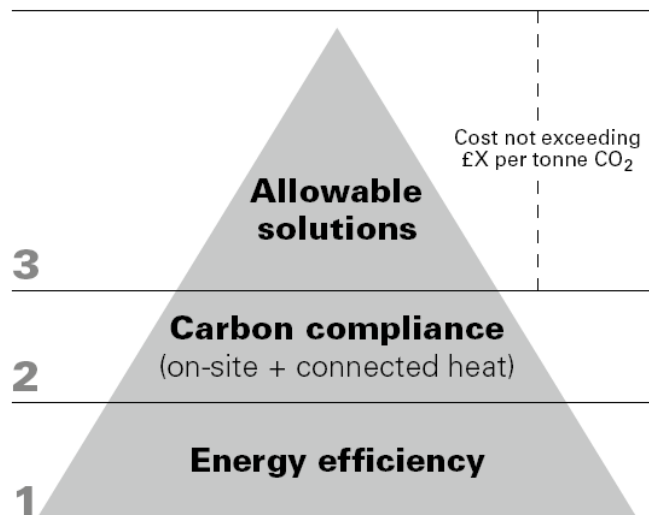
2 DEFINITION OF ZERO CARBON CONSULTATION: OVERVIEW

On December 17th 2008 the Department for Communities and Local Government (CLG) opened a consultation on the definition of ‘zero carbon’³ based on the work of the UK-GBC. The consultation closes on 18th March 2009.

The consultation proposes a new definition for ‘zero carbon homes’, based on a hierarchical approach requiring high-levels of energy efficiency, followed by a mandatory level of on-site carbon mitigation (including district heating/cooling networks, but not near-site renewable electricity), followed by a list of “allowable solutions” for dealing with the remaining emissions (considering both regulated and unregulated energy).

2.1 PROPOSED ‘ZERO CARBON’ HIERARCHY

The consultation document proposes a hierarchical approach for achieving the ‘zero carbon homes’ standard, illustrated by the diagram below:



Where:

Level 1 – Energy Efficiency

High energy efficiency standards will be set, which will describe the minimum level acceptable for a ‘zero carbon home’. Many options exist for defining the energy efficiency requirements. While the consultation document mentions the PassivHaus standard and Energy Savings Trust (EST) standards⁴, the questions only ask the respondent if they agree with the ambition to set stretching targets.

Level 2 – Carbon Compliance

‘Carbon compliance’ can be achieved using on-site renewable energy installations and/or district heating/cooling networks connected to neighbouring developments. While the consultation document acknowledges that the consultation is not an appropriate mechanism for deciding the level of ‘carbon compliance’ required, it does ask respondents for their opinion. The consultation discusses standards ranging from 44% of Part L emissions to 100% of total energy (Part L + cooking and appliances).

³ CLG, *Definition of Zero Carbon Homes and Non-domestic Buildings: Consultation* (Dec 2008); <http://www.communities.gov.uk/publications/planningandbuilding/zerocarbondenition>

⁴ The cost analysis for the consultation only models the EST standards.

Level 3 – Allowable Solutions

All remaining CO₂ emissions (including those from non-regulated energy) would then need to be mitigated, either by further investment in ‘carbon compliance’, or by the use of ‘allowable solutions’. Suggested ‘allowable solutions’ include:

- energy efficient appliances/building control systems as a way to reduce energy demand,
- exports of low carbon or renewable heat (or cooling) to surrounding developments,
- 106 planning obligations,
- retrofitting of existing buildings in the locality,
- investment in LZC energy infrastructure (benefits of ownership transferred to the buyer of the home),
- offsite renewable electricity connected via direct physical connections,
- any other measures announced by Government

2.2 COST CAP

The consultation document proposes a capped cost on the allowable solutions. The purpose of this capped cost is not clear, but it appears to be a benchmark against which Government will review the cost of the allowable solutions in 2012.

The level of the capped cost has not yet been set and discussions centre around using either the Shadow Price of Carbon, the price of Renewable Obligation Certificates, the cost of the avoided renewables, or another method. This is the vaguest part of the consultation, and we are currently awaiting clarification from Government on what exactly the capped cost will mean to industry.

2.3 NON-DOMESTIC BUILDINGS

While Government acknowledges the attraction of a universal definition of ‘zero carbon’ that can be applicable to all new buildings, the complexity and diversity of the non-domestic stock poses some difficult questions. As such, the current consultation document is primarily concerned with the definition as it pertains to new dwellings. A full consultation on the definition of ‘zero carbon non-domestic buildings’ is instead proposed for later in 2009. In the meantime the current consultation is limited to questions regarding the scope of ‘zero carbon’ for non-domestic buildings (e.g. should both regulated and non-regulated emissions be included).

3 FURTHER READING

Consultation document available here:

<http://www.communities.gov.uk/publications/planningandbuilding/zerocarbondefinition>

Fulcrum Consulting have written a series of documents regarding the definition of zero carbon buildings, including our own ‘dream definition’, all of which can be accessed here:

<http://www.fulcrumfirst.com/pages/Knowledgebase/zerocarbon.html>