APPENDIX 1

PROPOSED RESPONSE TO GOVERNMENT CONSULTATION ON ACHIEVING ZERO CARBON IN NEW NON DOMESTIC BUILDINGS

Summary

1 The consultation, published 24th November 2009 and closes 26th February 2010, relates to proposals for working towards the Government's ambition that all new non-domestic buildings should be zero carbon from 2019, with the public sector leading the way from 2018.

2 This brief summary highlights the main subject headings where the department are inviting comments. In line with other recent consultation papers, it is expected that the CLG will issue a paper in the spring identifying the responses before making new regulations.

The Framework

3 The broad framework is based on;

1 The building fabric and building services '**Energy efficiency'**

2 On-site or linked low and zero carbon technologies, referred to as **'Carbon compliance'**

3 **Off-site zero carbon technologies, referred to as** 'Allowable solutions'

N.B. Heat and energy generation will also be eligible for Feed in Tariffs or Renewable Heat Incentives, providing future income streams.

4 The consultation paper recognises that non-domestic buildings are often more complex and larger scale than homes, so each such development more regularly involves greater technical input in design and construction and a closer level of Building Control involvement and oversight.

On-site Element

5 Non-domestic buildings often have greater potential for on-site renewables and to play a critical role in the viability of community heat or energy. A menu of options for abating the remaining carbon emissions off-site will be developed that will include:

- Further carbon reductions on-site beyond the regulatory standard
- Energy efficient appliances meeting a high standard which are installed as fittings
- Advanced forms of Building Control system which reduce the level of energy use
- Export of low carbon or renewable heat from the development to other developments
- Investments in low and zero-carbon community heat infrastructure

Public sector leadership

6 It is recognised that the public sector can play a significant role in supporting market development of low and zero carbon buildings – for example the Eon partnership at Cranbrook where a CHP scheme is proposed.

7 It is the CLG's ambition to move to zero carbon for the public sector by 2018, one year ahead of the regulations, for key estates such as Schools, NHS, MOD and the Prison Service. Building Control are currently working with NPS on Devon's first zero carbon school to be built in Exeter [Montgomery].

Off-site measures

8 Achieving net zero carbon emissions on-site through energy efficiency and on-site measures can be prohibitively expensive and for most building types and locations is not technically possible. This means that there will be remaining/residual emissions that need to be tackled in order to meet the zero carbon standard through off-site measures – these are termed 'allowable solutions'.

9 The systems for the delivery of allowable solutions will need to be up and running by 2016 on a major scale.

Regulated and unregulated emissions

10 Regulated energy covers the energy used by the building fabric and fixed building services such as lighting, heating, hot water and mechanical ventilation. Unregulated energy is all the other energy use, for example, the energy used for computers, machinery, lifts and other processes carried out day to day in buildings.

11 CLG are considering whether to extend the coverage of Building Regulations to cover certain excluded energy uses, and that an element of unregulated energy should be included in the zero carbon standard. This approach reflects the 'polluter pays' principle, given that the development of new buildings will add to overall UK carbon emissions.

Response to Consultation

12 The attached Annex sets out a proposed response to the consultation.

Alan Stokes
Building Control Manager
3 December 2009

Proposed response to CLG consultation questions

Q1. *Do consultees agree that we should establish challenging energy efficiency standards for non-domestic buildings covering space heating and cooling, and measures on a kWh/m^2/year basis?*

If not, why not, and what approach to setting energy efficiency standards would you prefer?

Response
Yes – a similar approach to that being developed for zero carbon homes should be adopted for non-domestic buildings as a matter of priority.

The guidance for the building fabric and components would need to take into account the use of the building where strict energy efficiency standards would not be appropriate for certain non-domestic buildings such as warehousing.

The 'delivered energy metric' approach would need to be assessed against the Energy Performance of Buildings Directive requirements – a summary of EPBD consultation paper is included in Annexe A of this report.

Q2. *Which of the three scenarios would you favour as a basis for setting on-site aggregate targets for zero carbon trajectories and why?*

Response
Whilst Scenario 1 [off-site rich] results in the lowest cost per tonne for $C0_2$ saved, it would actively prioritise the development of off-site community scale schemes like district heating networks.

It would be reasonable to develop such schemes for larger scale developments, but it could be unrealistic for one-off schemes, given the potential impact on development viability.

Q3. *What views do you have on the impact of the costs of building to zero carbon standards in different sectors? How and why does sensitivity to new build costs differ between sectors?*

Response
The commentary highlights the fact that community based schemes will provide lower costs overall that those designed to maximise the performance of individual buildings.

As our expertise does not extend to building costings, our response needs to be cautious. However, with regard to the sensitivity of new build costs, the end user will have an impact on the scheme, ie the difference between a speculative development and a public sector facility.

Q4. *Do you agree that we should adopt the same measures and approaches for allowable solutions for non-domestic buildings as those for homes?*

Response
The indicated allowable solutions are;

* Further carbon reductions on-site beyond the regulatory standard

* Provide greater certainty and commercial opportunity to new businesses starting up to service the allowable solutions market

* Enable the use of allowable solutions for non-domestic buildings at the same time as homes would allow both sectors to work together to exploit economies of scale

* Create marker certainty for investors and developers of community scale infrastructure

* Provide a consistent framework for mixed developments to ensure all buildings adopt the same approach

It seems appropriate to adopt these measures for the non-domestic market.

Q5. *Are there any extra allowable solutions that should be used specifically for non-domestic buildings?*

Response
Controls relating to the use of artificial lighting where premises are unoccupied could provide a valuable reduction in carbon emissions.

Retail premises, particularly car showrooms, often have a high level of lighting to illuminate displays when the premises are closed.

Where it can be demonstrated that controls are in place to extinguish lighting when the premises are effectively closed could be included as an allowable solution.

Q6. *Do you agree with the proposal to introduce an element of allowable solutions for non-domestic buildings at 2016? What views do you have on the level at which this should be set, and the impact this will have?*

Response
Yes – the non-domestic target is currently programmed to run three years behind the domestic market with a level of 70% improvement from 2016 rising to 100% from 2019 discussed in the consultation paper that appears appropriate.

Although off-site technologies need considerable development, the industry requirements for the domestic market will provide the framework for this to be developed.

Q7. *Do you favour an approach of setting a flat rate requirement above 100 per cent regulated emissions to account for unregulated emissions?*

Response
The adoption of a flat rate requirement for unregulated emissions [energy used for computers, machinery etc] must take into account the building type where for instance for a retail warehouse the unregulated emissions are likely to be a small percentage of regulated emissions, whilst within a small office they are likely to be extremely high.
The flat rate approach would provide consistency but may stifle innovation on individual projects.

Q8. *Would you favour the 10 per cent allowance, the 20 per cent allowance or another rate? Why?*

Response
As stated earlier, our expertise does not extend to building costings, I therefore cannot provide a worthwhile opinion here, however, the consultation paper assesses that applying a 20% flat rate is about equivalent to the costs of using the allowances assumed in SBEM [Simplified Building Energy Model] as a proxy for unregulated energy use.

Q9. *Do you agree with the overall work programme we have outlined for the public sector?*

Response
Yes – the proposal to move to zero carbon for new public buildings a year ahead of regulation ie from 2018 will help to establish a programme of exemplars for a variety of types of public sector buildings.

This will enable testing and learning of technologies and techniques associated with zero carbon ambitions [NPS are currently designing a new zero carbon school, in Exeter on behalf of Devon County Council].

Q10. *Are there other ways in which the public sector could usefully provide leadership for the move to zero carbon?*

Response
The exemplar buildings programme will assist design teams working in the private sector with practical knowledge of technologies and techniques assisted by the TSB [Technology Strategy Board], set up to advise Government on how to remove barriers to innovation.

Q11. *Do you agree that the public sector should start trialling allowable solutions from 2015?*

Response
This is seen as a practical way of assessing the costs and benefits involved in allowable solutions, where public sector buildings are in a position to take part in district heating schemes, playing a key role as anchor leads.

Q12. *What role(s) do you think local government can play in contributing to public sector leadership on zero carbon buildings?*

Response
By the adoption of local strategies and action plans for delivering zero carbon on individual sites. Also by leading on the procurement of suppliers for major developments.

Q13. *Does this package of measures and proposals for next steps address the key delivery issues to make progress towards the zero carbon ambitions? If not, what action is needed and by whom?*

Response
The proposals set out in the consultation paper, linked to the ambitions for zero carbon agenda for dwellings by 2016, highlight key issues that will enable legislation to be made through The Building Regulations for deliverable targets in 2013, (and subsequently in 2016 and 2019).

Annexe A

- DEC to be displayed in buildings larger than 250m² that are occupied by a public authority
- EPC to be displayed in commercial buildings larger than 250m² that (a) are frequently visited by public and (b) where an EPC has previously been produced on the sale, rent or construction of that building
- the energy performance of existing buildings of any size that undergoes major renovations to be upgraded in order to meet minimum energy performance requirements. Currently, there is a threshold of 1,000m²
- minimum energy performance requirements to be set in respect of technical building systems, e.g. boilers, air-conditioning units etc
- Commission to establish common principles for definition of low and zero carbon (LZC) buildings. The definition of LZC to be determined by Member States but it must be in accordance with the principles set by the commission
- requirement to set targets for increase in LZC buildings with separate targets for:
  - new and refurbished dwellings
  - new and refurbished commercial buildings
  - buildings occupied by public authorities
- Member States to aim for cost optimal levels of energy performance of their buildings using a methodology developed by the Commission