RIBA

Consultation response from the Royal Institute of British Architects

Definition of Zero Carbon Homes and Non-Domestic Buildings – Department for Communities and Local Government

18 March 2009

Introduction

The RIBA is one of the most influential architectural institutions in the world, and has been promoting architecture and architects since being awarded its Royal Charter in 1837. The 40,000-strong professional institute is committed to serving the public interest through good design. It also represents 85% of registered architects in the UK through its regional structure as well as a significant number of international members. Our mission statement is simple – to advance architecture by demonstrating benefit to society and promoting excellence in the profession.

Key Messages

- We strongly support the target of reducing UK carbon emissions by 80% by 2050 and are encouraged that the Government remains committed to reducing carbon emissions from all new buildings.

- We believe that a national trajectory to zero carbon is required to underpin efforts by the construction industry and other sectors.

- Clarity of both targets and timescales to zero carbon will be essential to provide certainty for the construction sector.

- We argue for a more flexible approach to defining zero carbon, underpinned by a hierarchical approach to emissions reduction:

  energy use reduction → energy efficiency *through the fabric of the building (incl. heat networks, CHP, heat exchange technology)* → ***on-site clean energy generation*** *(solar heat, PV, wind)* → *remaining energy requirement sourced from* ***off-site clean energy generation***

- District-scale energy and heat networks should be delivered under the guidance provided by a local strategy.

- We believe that responsibility to deliver and manage community-scale decentralised power generation (e.g. district heating, CHP) should sit with national energy providers and be regulated by government.

- We believe that the role of biomass in decarbonising energy supply needs to be reappraised.

- Certain technologies (ground source and air to air heat pumps, district heating, CHP) should be declassified as renewable. We propose that these non-renewable technologies are implemented to improve energy efficiency and reduce carbon emissions, and that that they should be regulated, assessed and controlled by Building Regulations and not through the planning system.

- Only 'on-site' solutions (energy produced via solar and wind energy through photovoltaics, solar thermal systems or wind turbines) should be classified as renewable. This would simplify the planning process.

- Renewables targets for individual schemes should be overseen by the planning authority, based on an objective assessment of available roof area, development density and orientation/topography.

- Pathfinding schemes applying innovative and holistic zero carbon solutions should be encouraged.

Overview of the RIBA's Response

The definition of zero carbon has been the subject of much debate since the Government published its intentions for a regulatory escalator en route to achieving zero carbon new-build homes by 2016, with an accelerated timetable of 2013 for publicly funded 'affordable housing'. The current economic climate has intensified the discussion questioning the viability of zero carbon development. The RIBA believes that while the difficult economic climate persists, there are real viability issues applying the current definition of zero-carbon, particularly in urban areas.

Despite this ongoing debate the construction industry has demonstrated an appetite to drive forward energy efficiency, and the clear roadmap to zero carbon defined by the Code for Sustainable Homes has provided a framework for the industry to work to and plan for. This momentum must not be lost as a result of this consultation.

The RIBA strongly welcomes the proactive approach to legislate for energy efficiency and carbon reductions through the introduction of the Code for Sustainable Homes and the defined timetable provided by the Code. We strongly support the 2050 target of reducing UK carbon emissions by 80% and, although new buildings will only represent a small proportion of these targeted carbon efficiencies, are encouraged that the Government has remained steadfast in its commitment to reduce carbon emissions from all new buildings.

We encourage the more flexible approach to defining zero carbon, underpinned by a hierarchical approach to emissions reduction, which this consultation proposes. The RIBA also welcomes the ambition to define a similar framework for non-domestic buildings. Clarity of both targets and timescales will provide much needed certainty for the construction sector.

Whilst we welcome the overall approach, we believe that the proposed legislative framework should not be allowed to confuse or dilute true zero carbon development which takes a holistic approach to sustainability including embodied energy, social and economic longevity, as well as environment and carbon reduction.

We believe it is imperative that there needs to be transparency of the definition, and its implications, for both prospective purchasers and investors. The industry will always need a trailblazer and the ultimate aspiration to achieve true zero carbon should be encouraged.

Decentralised Power Generation

The proposed definition of Zero Carbon Homes and Non-Domestic Buildings is predicated on an assumed energy strategy, particularly in respect to the use of decentralised energy generation and district heating networks. However the true context of this approach is that local strategy and practice are evolving rapidly, and in the face of no strong national framework, vary widely at the local level, partly based on both locally perceived opportunity and need.

The RIBA believe this approach needs to be investigated thoroughly prior to aligning a national zero carbon trajectory for the construction industry. Whilst we understand the efficiency benefits of decentralised power generation, we would question whether development teams are part of the right industry to deliver this ambition.

Monopoly Supplier

Currently there is a perverse incentive which allows low performing building envelopes (with regards to energy efficiency) to be constructed, due to the proportion of heat generated relative to electricity by Combined Heat & Power (CHP) systems. This is indicative of the emphasis in the current building regulations on a 'performance' based carbon target, which does not prioritise energy efficiency before supply efficiency or clean energy generation. Coupled with the energy providers requiring a return on the investment in the CHP or district heating network, there is no incentive to reduce energy consumption.

In such circumstances, the monopoly supplier limits the choice to the consumer. If decentralised power generation (through community-scale solutions such as district heating and CHP) is to remain, we believe the responsibility to deliver and manage the facility should sit with national energy providers and be regulated by government.

Fuel Source

Decentralised energy and district heating networks assumes that gas can be used to generate heat and power. This presumption needs to be considered in the context of a long term vision to decarbonise the national grid, and the long term security of our national gas supply. Consideration of long term gas supply is particularly important as North Sea gas production has peaked, and the UK will increasingly move from being a net exporter of gas to a net importer.

We believe that the role of biomass in decarbonising energy supply needs to be reappraised. In some circumstances biomass can play an important role. For example, biomass can provide a sustainable, cost-effective energy supply for large scale specialist installations in suburban areas, ideally where there is security of supply and material can be locally sourced. It may also play a role in decarbonising existing, hard to treat buildings at appropriate densities and scales.

The considerable disadvantage is that biomass boilers require a high-volume of fuel, and land-take to produce it, which can be in direct competition with farming. We would question the inherent sustainability of competing with food production for the UK's farming land to deliver biomass in our cities.

The heat-energy production ratio from such installations also provides a perverse disincentive to improve the energy efficiency of buildings, as discussed above. While there remains a disincentive to improving thermal performance & air tightness of our

buildings, the RIBA believes that we should not be encouraging the transportation of biomass into our cities for individual developments.

Assuming improving the thermal performance of our buildings is achieved, then biomass could prove a viable alternative fuel source, led by consumer demand as fossil fuel prices increase. However it should not become the default fuel source driven by arbitrary clean energy targets. For city developments other clean technologies should be utilised wherever possible.

Coordinated Approach Required by Local Authorities

Within a development boundary it is often difficult to balance the heat to electricity load and delivering a community-wide district heating network, serving properties beyond the site boundary, should not be the job solely of the developer. There needs to be a more coordinated approach by local government to enable district heating networks where the heat supply would be most beneficial. We suggest that Conservation areas and listed buildings could be mapped by local authorities, coupled with strategic investigation of the potential for local heat, cooling and power networks. By using this analysis, decentralised power plants can be strategically planned so that buildings with heritage that are unlikely to be upgraded to the same building fabric performance as new build can benefit from a district heating network.

A strategy by local authorities is needed to explore any local opportunities for district heating. It should not be left to public or private sector individual developments each with their own CHP burning biomass and high levels of heat wastage spread across our towns and cities, regardless of the site's constraints or opportunities. This local strategy could be delivered by strengthening the existing requirement for local planning authorities to carry out analysis set out in the supplement to PPS1.

Legislate for Improved Building Fabric and Energy Performance

The RIBA supports a hierarchical approach to achieving zero carbon as proposed in this consultation which focuses on:

- Energy efficiency
- Carbon compliance
- Allowable solutions

However we believe that the following mechanisms to deliver this ambition should be considered:

- Creation of a National Energy Strategy, providing a long term future energy mix strategy with a trajectory to 80% reductions?
- A review of an assumption that decentralised power generation can be predicated on widespread use of district heating networks and CHP-based solutions
- What should be legislated and controlled through Building Regulations?
- What should be legislated and delivered through planning and PPG22?
- How much on-site renewable ('clean') energy should the development deliver?
- What would be an incentivising payment structure for offsite clean energy generation?

What Should Be Legislated Through Building Regulations

As proposed in the consultation document, we agree that significantly improving the energy efficiency of our building fabric is essential. We agree with the priority given to achieving a 44% reduction in carbon by 2013.

Beyond this point however, we question what the mix should be in terms of energy efficiency, and clean energy generation – what level of efficiency should be required of a development and what could reasonably be delivered through the proposed allowable solutions?

It is unrealistic to expect private developers to deliver and facilitate measures beyond the development boundary, and so we believe that biomass should not be accepted as a clean energy source unless it is provided for 'on site' – the problems associated with transporting biomass fuel into our cities mean that, until we are able to decarbonise and efficiently manage this transportation, biomass should not be accepted as a renewable energy contribution. Biomass could become an alternative fuel in time, and in certain circumstances discussed elsewhere in this response, but this should be led by consumer demand as fossil fuel prices increase.

We also question other technologies and energy sources which are currently classified as renewable. For example, ground source and air to air heat pumps require electricity themselves to operate. Their use therefore needs always to be considered alongside the clean sourcing of the energy source they run on.

We believe these forms of technology should be declassified as renewable, but should be allowed to be implemented on developments as an efficient way of reducing carbon. This would mean these technologies being viewed in the same way as CHP that uses fossil fuels, however utilised as an efficient way to generating energy on-site.

We therefore propose that these non-renewable technologies are implemented to improve energy efficiency and reduce carbon emissions, and that that they should be regulated, assessed and controlled by Building Regulations and not through the planning system.

What Should Be Legislated By Planning Authorities

This leaves energy produced via solar and wind energy through photo-voltaics, solar thermal systems or wind turbines. We believe that by reclassifying allowable renewables as only 'on site' this would simplify the planning process. We believe that 'Planning Policy Statement 22: Renewable Energy' should be revised to set new renewable energy targets, covering only on-site wind and solar technologies. This could be easily overseen by the planning authority, based on an objective assessment of available roof area, development density and orientation/topography.

By separating solar and wind from other fuel sources currently described as renewable, this would simplify the planning process and allow Building Control to regulate energy efficiency.

The planning process of a revised PPS22 still has a valuable role to play. It is essential that all developments are future-proofed and do what is possible to mitigate climate change - we must design buildings to facilitate building integrated clean sources of energy. We must ensure that buildings we design today do not become obsolete and technologies such as PV, that may not prove financially viable from day one, can be easily retrofitted onto a scheme in the future. The planning process will also ensure that easy wins such as solar thermal for homes are implemented as a first option in every case.

Allowable Offsite Solutions

Once the site's renewable sources have been tested through the planning system, the remaining clean energy should come from the most cost-effective source, which we believe to be large scale offsite provision.

RIBA

Annex B: Response Proforma

Respondent Details:	
Name: **Ewan Willars** **Organisation:** Royal Institute of British Architects **Address:** 66 Portland Place London W1B 1AD **Telephone:** 020 7307 3741 **Fax:**	Please return by: **18 March 2009** to: **Mary Edmead** **Climate Change & Sustainable Development Team,** **Department for Communities and Local Government,** **4th Floor,** **Eland House,** **Bressenden Place,** **London,** **SW1E 5DU** **Email: buildgreen@communities.gsi.gov.uk**
e-mail: ewan.willars@inst.riba.org	

Is your response confidential? If so please explain why. (See disclaimer on page 13)

Yes ☐ **No** ☒

Comments:

Are you responding as an individual? ☐ **Or are you representing the views of an organisation** ☒ **?**

If you are responding on behalf of an organisation, please say who the organisation represents and, if applicable, how the views of members have been assembled.

The RIBA is one of the most influential architectural institutions in the world, and has been promoting architecture and architects since being awarded its Royal Charter in 1837. The 30,000-strong professional institute is committed to serving the public interest through good design. It also represents 85% of registered architects in the UK through its regional structure as well as a significant number of international members.

The comments in this consultation response have been drawn together following extensive consultation with our leading members in the field, and other leading professionals, principally through the work of the RIBA Sustainable Futures Group.

Provision is made throughout this questionnaire for you to provide additional comments. If, however, you wish to provide more detailed comments on any aspect of the consultation then please feel free to append additional materials and supplementary documents, clearly marked and cross referenced to the relevant questions, as necessary.

Organisation type (tick one box only)			
House or property developer	☐	Local authority – Planning	☐
Commercial Developer	☐	Local authority – other (please specify)	☐
Housing Association (Registered Social Landlords)	☐	Approved Inspector	☐
Property Management: Residential Commercial Public sector	☐ ☐ ☐	Professional body or institution	☒
Builder – Main Contractor (commercial/volume house builder)	☐	Trade body or association	☐
Builder – Small Builders (repairs/maintenance, etc)	☐	Householder: Homeowner Tenant	☐ ☐
Builder – Specialist Sub Contractor	☐	Energy sector: Generation Transmission Distribution Supplier Energy Service Company	☐ ☐ ☐ ☐ ☐
Manufacturer	☐	Other non-governmental organisation	☐
Architect	☐	Specific interest or lobby group	☐
Civil/Structural Engineer	☐	Research/academic organisation	☐
Consultancy	☐	Journalist/media	☐
Individual in practice, trade or profession	☐	Development funder	☐
Local authority – Building Control	☐	Other (please specify):	☐
Geographical Location			
England	☒	Wales	☐
England and Wales	☐	Other (please specify)	☐

Section 4: Overview of Proposed Approach

Q1. Do you agree that the Code for Sustainable Homes should be revised to reflect the approach to zero carbon homes described in the hierarchy set out in Section 4?

Yes ☒ **No** ☐ **Do not know** ☐

If you agree, how do you think the Code should be revised?

See RIBA summary statement above

If you have any further comments on Section 4 please add them here

We should use the same definitions as applied in Part L. It is important that the Code should not address solely heat loss, but also that regulated electricity and domestic hot water should also have efficiency levels stipulated.

Section 5: Energy Efficiency and Carbon Compliance

Q2. Government is minded to require very high levels of energy efficiency in 2016, broadly equivalent to some of the most demanding standards currently published by third parties (such as PassivHaus and Energy Saving Trust). Do you agree with that ambition?

Yes ☒ **No** ☐ **Do not know** ☐

If you do not agree to setting very high energy efficiency standards for homes, please say why you disagree.

The standards demanded of new developments should not be relaxed under any circumstances, irrespective of the use of either biomass or CHP. See summary comments for further details.

Q3. Do you agree that the approach to carbon compliance should not favour a direct physical connection of electricity or of private wire over connections via the distribution network?

Yes ☒ **No** ☐ **Do not know** ☐

We need to avoid duplication of systems- where there is already grid access available, there should not be a requirement for private wire.

Q4. Government is minded not to allow offsite renewable electricity to be claimed as part of the carbon compliance calculations. Do you agree with this approach?

Yes ☒ **No** ☐ **Do not know** ☐

See executive summary, above.

Q5. Is the Building Control system the right regulatory framework for monitoring and enforcing carbon compliance?

Yes ☒ **No** ☐ **Do not know** ☐

However, local building control authorities will need to increase their relevant skills and capacity to achieve this.

We advocate that post-occupancy energy efficiency tests be carried out one year after occupancy of the building commences, and then updated periodically, for example every 4 years. This process could be carried out through the Display Energy Certificates scheme.

Q6. Does the analysis of carbon dioxide reductions from different technologies and the associated costs set out in Annex E look about right to you?

Yes ☐ **No** ☒ **Do not know** ☐

If not why not?

Many of the costs seem to be too high - if the industry supply chain is given adequate time and a clearly defined programme to work towards, under a well defined trajectory, we believe that the industry will adapt supply chains in order to reduce the cost, making use of economies of scale, rationalisation of choice and maturation of technologies.

Q7. Is it right to rule out a carbon compliance level based on eliminating 100 per cent of regulated emissions plus emissions from cooking and appliances onsite as from 2016?

Yes ☒ **No** ☐ **Do not know** ☐

If not, why not?

Q8. Assuming feed-in tariffs and renewable heat incentives cannot be claimed towards the cost of installing low and zero carbon energy in support of a new home, which of the following carbon compliance levels would you favour for 2016 (please tick):

(i) a continuation of the 44% to be introduced from 2013	☐
or (ii) 70%	☒
or (iii) 100%	☐

Please give reasons for your preference:

High density sites may not have the ability to achieve this level of carbon compliance, due to the limitations of land and roof area and site topology and orientation.
A clearly defined sliding scale, directly related to development density (see summary note for further explanation.) The sliding scale would allow clarity to developers, while allowing some limited relaxation of the standard of compliance applied to some high density sites. The lower end of the scale should not be less than 44% in any circumstance.

Q9. If feed-in tariffs and/or renewable heat incentives could be claimed by a house builder or

energy service company, what would be your answer to the previous question (please tick)?	
(i) a continuation of the 44% to be introduced from 2013	☐
or (ii) 70%	☐
or (iii) 100%	☒
Please give reasons for your preference: The threshold needs to be subject to limited relaxation, in the manner of a sliding scale linked to density as described above, due to limitations imposed by physical site constraints and development density.	

Q10. Following the outcome of this consultation, should Government indicate the level of carbon compliance proposed for 2016 as:

(i) a single number ☒

or (ii) a range, with the final number to be decided through subsequent Part L reviews?

If you prefer a range, how wide should the range be (please express as a number)?

See above answer relating to a sliding scale. A sliding scale would still provide an unequivocal target, but related to site constraints, providing certainty and discouraging developers from seeking a lowest denominator solution, as is likely to be the case if a range is applied.

If you have any further comments on Section 5 please add them here

As previously mentioned in our response to Section 4, we believe that in establishing a high energy efficiency standard, it is important that the Code should not only address heat loss, but also that regulated electricity and domestic hot water should also have efficiency levels stipulated.

In response to point 5.8, regulations should not be relaxed when CHP is deployed as part of a scheme. We support using the local development framework or other local mechanism to assess the potential for local heat networks within an authority's boundaries, based on the potential benefits to mixed-use schemes and when applied to adjacent building stock (particularly areas of hard-to-treat, historic and listed buildings). In these limited circumstances a district heating network could be implemented releasing surplus heat. This would need to be co-ordinated by local authorities on a case by case basis based on the mix and location of relevant building stock in their area.

Section 6: Allowable Solutions

Q11. Do you disagree with the inclusion of any of the allowable solutions listed in Section 6.3?

Yes ☒ **No** ☐ **Do not know** ☐

If you do disagree, please list which allowable solutions you disagree with and state your reasons.

There is a very wide range of non-regulated electrical systems/appliances available to developers. Carbon credit should be available if the builder installs low energy versions or designs the homes not to need them.

Examples include:
1. HWS secondary pumps (these tend to run 24hrs/day) and power showers. There is a strong argument that these should become part of the regulated energy systems.
2. A++ appliances. By 2016 the range will have been greatly increased.
3. Avoidance of bathroom electrically heated mirrors and electrically heated towel rails.
4. For selection of systems and appliances with less than 1W standby power. This TVs (& other entertainment systems, particularly wireless systems), broadband hubs, security and door entry systems, heating controls, lighting controls, etc.
5. For low energy external lighting (with PIR control)

Q12. Assuming directly connected offsite renewable electricity does not count towards carbon compliance, should it count towards the allowable solutions?

Yes ☐ **No** ☒ Do not know ☐

We want to avoid the Grid being duplicated unnecessarily by the introduction of private wire.

Q13. Are there any further measures which you think should be added to the list of allowable solutions at this stage?

Yes ☐ **No** ☒

If so, what are they and why should they be added now?

Q14. Please provide any views on how the Community Infrastructure Levy (CIL) might be used as an allowable solution in a way that is consistent with the Government's approach to the CIL.

CILs have the potential to be a key element for the provision of Allowable Solutions. However, it is essential that all LPAs are incentivized to start to investigate and put in place local trajectories for reducing carbon emissions by 80% by 2050

Q15a. Paragraph 6.6 notes that carbon compliance measures and nearly all the allowable solutions relate to measures undertaken in the locality of the housing development. Do you agree that this provides sufficient emphasis on local measures?

Yes ☐ **No** ☐ Do not know ☒

Comments :

Greater emphasis needs to be given by local authorities to identify opportunities for locally-based district-scale energy schemes, primarily focused on hard to treat, heritage and protected building stock.

Q15b. Alternatively, would you favour an approach which gives further prioritisation to local emissions reductions?

Yes ☐ **No** ☐ Do not know ☒

If so, how do you suggest this should be achieved?

This is impossible to answer until a long term strategy to decarbonise the UK grid is in place, in the form of a national trajectory.

Should there be a further distinction between reductions achieved in the same government office region as the zero carbon home versus reductions achieved elsewhere in the UK?

Yes ☐ **No** ☐ Do not know ☒

Comments:

Q16. Do you agree that the review mechanism proposed for 2012 will provide predictability for industry now, while enabling the policy to be adjusted in the light of developments between now and 2016?

Yes ☐ **No** ☒ Do not know ☐

Comment

A review as proposed raises the likelihood of the industry stalling its efforts in the hope of a future relaxation of what is required of them.

Q17. Should development on brownfield land be subject to derogations from allowable solutions that are not available to other forms of development?

Yes ☐ **No** ☒ Do not know ☐

If you agree the brownfield land should be subject to such derogations, please say how this could be done?

Q18. Do you agree with the proposed scope of the review mechanism?

Yes ☐ **No** ☒ Do not know ☐

If not, please set out what you think the scope should be.

This must be based on a long term national trajectory to decarbonise UK energy supply, which includes an assessment of the potential and necessity for both on- and off-site solutions, as previously proposed in our consultation response.

Q19. Is 2012 the right time to undertake a review of the allowable solutions?

Yes ☐ **No** ☒ Do not know ☐

If not, do you think the review should be (i) earlier ☒ , or (ii) later ☐ ?

Comments:

The review should be carried out as soon as possible, certainly no later than 2012, to avoid stagnation of the industry's efforts and loss of momentum.

Q20. Please indicate which one of the following is your preferred basis for setting the capped cost:

(i) Shadow Price of Carbon ☐

or (ii) price of carbon dioxide implied by Renewable Obligation Certificates; ☒

or (iii) price of carbon dioxide implied by incentives for emerging renewable technologies (ie two ROCs) ☐

Please give reasons for your preference.

The SPC is currently too low, its methodology immature, its mitigation cost assumptions not unnaturally simplistic, and hence the SPC is likely to go through significant future changes, whereas the industry would much prefer predictability of cost.

ROCs now provide a more stable future cost basis and hence are preferred, even if its basis has little direct market association with a capping limit.

Q21. Of the following, which is your preference as to the number of years of residual emissions to be covered via allowable solutions:

(i) 30 years ☒ ,

or (ii) 60 years ☐

Please give reasons for your preference.

The choice of single ROCs and 30 years is proposed to ensure the total (Carbon Compliance plus Allowable Solutions) renewables cost per dwelling is reasonable. With sufficient time the developer can potentially manage this potential cost increase without significantly increasing the dwelling selling price. He has the ability to reduce the land purchase price (given long enough lead-in until implementation), he can work with his supply chain to drive down the costs of standardised microgeneration packages, and he can use a capitalisation of future energy cost revenues.

For converting a portion of future energy generation costs into additional up-front capital

we suggest the following. Firstly, the national RO targets should be increased to include the electrical renewables capacity needed to make all new-build zero carbon (this avoids the double accounting with the current RO renewables escalator). Secondly, there should be a mechanism that converts this future ROCs income into an up-front capital sum. Thirdly there needs to be a parallel heat incentive. In effect, the subsidy that all electricity consumers currently pay for ROCs is increased slightly and expanded into the heat energy market.

Q22. If you do not think that either 30 or 60 years is appropriate, then please say what your approach would be.

Q23. Do you consider that the role outlined for Local Planning Authorities in paragraphs 6.52 - 6.56 is reasonable in relation to their capacity and expertise?

Yes ☐ **No** ☒ Do not know ☐

Comments:

See our Summary comments for further details on the role of planning and building regulations, and the reclassifications of certain solutions:

What Should Be Legislated Through Building Regulations

As proposed in the consultation document, improved energy efficiency of our building fabric is essential and should be the first priority achieving a 44% reduction in carbon by 2013.

Beyond this point, how much should be required of a development and what could be delivered through the proposed allowable solutions?

It is unrealistic to expect private developers to deliver and facilitate beyond the development boundary and biomass should not be accepted as a renewable energy source unless it is 'on site' -transporting fuel into our cities should not be accepted as renewable contribution.

We also question other technologies and energy sources currently classified as renewable. Ground source and air to air heat pumps require high grade fuel (electricity) to operate.

We believe they should be declassified as a renewable and should be implemented on developments as an efficient way of reducing carbon. In the same way that CHP uses fossil fuels but as an efficient way to generating energy. We therefore propose that these technologies are implemented to improve energy efficiency and reduce carbon emissions but should be regulated, assessed and controlled by Building Regulations and not the planning authority.

What Should Be Legislated By Planning Authorities

This leaves solar energy and wind providing energy through PVs, solar thermal or wind turbines. By reclassifying allowable renewables as 'on site' this would simplify the planning process. PPG22 should be revised to set new renewable targets testing only wind and solar. This could be easily overseen by the planning authority based on available roof area and density.

By separating solar and wind from other fuel sources currently described as renewable, this

would simplify the planning process and allow building control to regulate energy efficiency.

The planning process of a revised PPG22 still has a valuable role to play. It is essential that all developments are future-proofed and do what is possible to mitigate climate change - we must design buildings to facilitate building integrated renewables. We must ensure that buildings we design today do not become obsolete and technologies such PV, that may not prove financially viable from day one can be easily retrofitted. The planning process will also ensure that easy wins such as solar thermal for homes are implemented day one. "

This would leave challenges for local authorities: 1) A requirement on local authorities to interpret opportunities for energy generation and shared networks, based on the local mix of building types, and the local interpretation of the national energy strategy. This would require assessment tools and skills that local authorities do not currently possess; and 2) the resulting changes to plan making, development control and building control may require increasing local authority capacity and relevant skills.

24. Do you consider that the role outlined for Building Control Bodies in paragraphs 6.52 - 6.56 is reasonable in relation to their capacity and expertise?

Yes ☐ **No** ☒ Do not know ☐

Comments:

See Q 23, above.

If you have any further comments on Section 6 please add them here

Section 7: Costs and Benefits

Q25. Do you agree that the Impact Assessment broadly captures the types and levels cost associated with the policy?

Yes ☐ **No** ☒ Do not know ☐

If you do not agree, please say why not.

See previous comments to Q6.

Q26. Do you agree that the Impact Assessment broadly captures the types and levels of benefits associated with the policy?

Yes ☐ **No** ☒ Do not know ☐

If you do not agree, please say why not.

We would question the perceived wisdom that a move to zero carbon will reduce fuel bills to any significant degree. While the amount of energy consumed should reduce, this is likely to be largely offset by the additional capital cost of providing the renewable energy generating capacity; the latter being more expensive than the conventional fossil fuel alternative.

Q27. Do you agree that the Impact Assessment reflects the main impacts that particular sectors and groups are likely to experience as a result of the policy?

Yes ☒ **No** ☐ Do not know ☐

If you do not agree, please say why not.

If you have any further comments on Section 7 please add them here

Section 8: New Non-domestic Buildings

Q28. Do you agree with the Government's policy objectives for carbon reductions from non-domestic buildings set out in paragraphs 8.1 - 8.17?

Yes ☒ **No** ☐ Do not know ☐

If not, why not?

What alternatives do you propose?

Q29. When considering how to achieve the policy objectives set out in paragraphs 8.1 - 8.17 do you agree that the Government should consider the same policy mechanisms for non-domestic buildings and for domestic buildings?

Yes ☒ **No** ☐ Do not know ☐

Comments:

Q30. Do you think that Government should work on the presumption that zero carbon for non-domestic buildings should cover both regulated and unregulated emissions, as for domestic buildings?

Yes ☒ **No** ☐ Do not know ☐

Comments:

While it is acknowledged that non-regulated energy use in the non-domestic stock various considerably, in fact this is mirrored in the domestic stock. Monitored domestic energy use indicates that appliance & cooking demands can easily vary by as much as 4 to 1 between identical dwellings. In practical terms this is addressed by assuming a standard allowance deemed to represent an average for the stock type. Exactly the same approach can be taken for the non-domestic stock with standard allowances assumed based on Planning Class or CIBSE use types.

Q31. Do you think that Government should exclude some elements of energy use for non-domestic buildings from the definition of the zero carbon standard, such as energy for industrial processes?

Yes ☐ **No** ☐ Do not know ☒

If yes, which elements of energy use should be excluded and why?

A separate time-frame, or exploration of the viability of a special tariff for high energy manufacturing processes, may need to be explored.

Q32. As the Government considers policy for zero carbon in new non-domestic buildings, do you agree that we should follow the same hierarchy as for homes, recognising that the timing and level of different thresholds may need to be adapted to reflect the different types of non-domestic buildings?

Yes ☒ **No** ☐ Do not know ☐

Subject to the answer to Q 31 above

Q33. We would welcome further evidence on the practicality and costs of meeting particular thresholds for energy efficiency or carbon compliance for different types of non-domestic buildings.

Q34. Notwithstanding a future decision on the regulatory aim for zero carbon for non-domestic buildings and the outcome of the forthcoming Part L consultation, would you see advantages in setting milestones towards that goal after 2013?

Yes ☒ **No** ☐ Do not know ☐

What approach would you favour and why?

The setting of clear milestones and a roadmap to zero carbon has been well received in the domestic sector, adding certainty and stimulating research and future thinking. A similarly clear and unambiguous approach in the non-domestic buildings sector is likely to be equally advantageous.

Q35. Do you agree that the Government should base any support for sustainability tools on the criteria set out in paragraph 8.51?

Yes ☒ **No** ☐ Do not know ☐

Are there any other criteria which should be used also?

The principles that must be applied are to provide clear and agreed benchmarks that can provide both clarity and continuity in working to achieve zero carbon.

There is a need to update BREEAM and widen its application for a wider range non-domestic buildings types. Care is needed to avoid confusing wider sustainability tools used on a largely voluntary basis, with statutory energy/carbon standards needed for zero carbon regulatory requirements for which everyone is required to comply. They should complement each other (ie the voluntary code acts as the pathfinder for the subsequent implementation of regulations) and hence should use similar energy/carbon methodology.

Q36. Are there any other areas, apart from those listed in paragraph 8.52, that Government should encourage a sustainability tool for non-domestic buildings to cover?

Yes ☒ **No** ☐ Do not know ☐

If yes, which areas?

Into broader areas of sustainability- flood alleviation and management, climate change adaptation and biodiversity protection and promotion are such examples.

Such tools should increasingly be applied post-occupancy to monitor changes in the building's operations as well as the pre-occupancy snapshot afforded by planning and building control processes.

In the specific field of minimising carbon emissions, the aim should be towards whole life-cycle carbon footprinting, from design and construction, through operation, to renovation and/or demolition of a building.

If you have any further comments on Chapter 8 please add them here