

CONSULTATION RESPONSE



Definition of Zero Carbon Homes and Non-Domestic Buildings: Consultation

18 March 2009

CONSULTATION ON THE DEFINITION OF ZERO CARBON HOMES AND NON-DOMESTIC BUILDINGS

Introduction

I am writing to you with the HBF's response to the Government's consultation on the definition of zero carbon homes.

Our response comprises two inter-related parts – the overview and high level issues in this letter and the individual answers to the detailed consultation questions. We would stress that the detailed answers to the individual consultation questions must be read together with this letter since it has only been possible to answer many of the questions on the basis of thinking through the bigger picture issues covered in this letter.

Summary of our position

After very careful consideration and extensive discussion with our membership we have concluded that the most deliverable approach to the definition of zero carbon would be to:

- Set both “energy efficiency” and “carbon compliance” requirements at the level of a 44% improvement on 2006 Part L
- Beyond this, use a range of other measures to achieve zero carbon – we suggest the concept of “possible viable approaches” below - but ideally reduce regulatory risk by providing for much simpler mechanisms such as energy investment funds or accredited green energy supply
- Such a policy would provide the longest lasting benefits at a cost per tonne of carbon more in line with that envisaged for the economy as a whole – and therefore be proportionate to carbon reduction policies for other sectors
- Nevertheless, because significant up-front costs threatening the viability of new development would remain, the zero carbon policy needs to include specific safeguards to

protect viability – including an overall cost cap and the availability of finance mechanisms and incentives

- The Government must also make clear whether zero carbon is its first priority in terms of claims on the contribution that can reasonably be made from land values towards its wider range of policy and regulatory requirements for housing.

We set out below the reasons for reaching these conclusions.

The revised approach to the definition

We welcome the Government's recognition that for technical and financial reasons it is necessary to look at a more flexible definition of zero carbon than that initially proposed and incorporated in the Code for Sustainable Homes and the qualifying criteria for the zero carbon homes Stamp Duty exemption.

It is vital for the house building industry that the definition of zero carbon finally adopted is robust and fit for purpose in the sense of being deliverable in all key respects. This requires at least clarity of approach, affordability for house builders and their customers, ease of implementation and acceptability to consumers. Flexibility is nevertheless also a critical requirement since the work that has been undertaken clearly points to the fact that possible solutions will vary significantly from case to case.

In this respect a key conclusion of work undertaken to date is the recognition in the consultation document that there are technical and financial limits to what house builders themselves can deliver directly – that is, either on-plot or on-site. The Government's resultant conclusion that a more flexible definition based on a hierarchy of measures including off-site "allowable solutions" is necessary is a welcome step forward.

Through discussion with our members we have considered this revised, more flexible approach carefully. We have come to the conclusion, however, that the proposed approach needs to evolve further to address successfully the main issues set out in this letter and to ensure that it is balanced and consistent with wider thinking about how to decarbonise the UK economy.

The macro-policy and economic context

A healthy house building industry is a prerequisite for supplying the homes needed to meet current and future national requirements.



In view of the need for a sufficient supply of new homes, it has from the outset of the zero carbon homes policy been an explicit corollary of this objective that it should not be realised at the expense of an improved housing supply. The twin objectives of more sustainable standards and an improved supply of homes accordingly sit at the heart of the 2016 Commitment adopted by Government, HBF, individual companies and many other bodies.

In order to achieve these twin objectives the definition of zero carbon must be soundly based in the wider national strategy for decarbonising the UK economy. This in turn requires that there is a clear understanding of the part the zero carbon homes policy should appropriately play in achieving a low carbon economy.

In this regard, after very careful consideration we have come to the view that the consultation document has not set out a sufficient or convincing rationale for the policy approach proposed for zero carbon homes. In particular, there is no assessment or recognition of the need for the policy towards new homes to be proportionate in its impact and demands to that adopted for decarbonising other parts of the economy, including the existing built environment. Without such an assessment, it is impossible to ensure that the proposed policy will not have an adverse impact on future housing supply.

Proportionality is a fundamental principle that must in our view be central to any agreed way forward. We fully accept that early action on climate change is necessary and important and that the house building industry should play its proper part in reducing UK carbon emissions.

We cannot accept, however, that the house building industry should be subject to policy requirements that are either disproportionately difficult or disproportionately costly (or both) compared to those for the existing built environment or other sectors of the economy. In macro-economic terms this issue is ultimately one of how the definition of zero carbon affects the setting of investment signals for the house building industry. If the zero carbon policy results in disproportionately difficult, risky and costly business conditions for house builders, investment capital will be deterred from investing in the industry compared to other sectors of the economy or demand higher rates of return. Either way, the result will be that fewer homes are built and the anticipated environmental benefits from the building of new homes are reduced.

In this context we note that the carbon benefits of the zero carbon homes policy will in fact be very small initially. It has been calculated that a 44% reduction in carbon dioxide emissions for new homes from 2013 compared to current 2006 Part L standards would represent a reduction of about 0.03% of UK annual emissions for each year of new build to this standard. While such benefits would build up over time, it would clearly be a long while before the overall result was significant in its scale.

Against this background the guiding principle of proportionality suggests that it is even more important to ensure the definition of zero carbon does not create undue delivery risks for house builders that would discourage investment in the sector and so frustrate necessary housing supply. It would surely be unjustifiable to unduly jeopardise the business climate for house builders for the comparatively small scale of benefits entailed relative to the overall challenge of decarbonising the UK economy.

Tying this back to the national strategy for reducing the UK's carbon emissions and the proposals for an initial series of 5 year carbon budgets, the principle underpinning these budgets is that they should seek the most cost effective means of saving significant amounts of carbon. A marginal cost abatement curve model has been developed for this purpose. The proposed budgets have not sought to pre-empt the outcome of the consultation on the definition of zero carbon new homes, but it would be contrary to their ethos not to pay very close attention to the costs and marginal cost benefits of the zero carbon homes policy in terms of its anticipated contribution to national carbon reduction plans.

Cost issues

Taking the broad national context into account, we believe that the final definition of zero carbon homes must comprise requirements that:

- Entail costs per tonne of carbon saved that are no higher than those for the economy generally, and;
- Do not threaten the viability of necessary future land supply for residential development.

The need for macro-economic and policy consistency has been set out above, but cannot be a sufficient policy criterion on its own to prevent an adverse impact on future housing supply. It is also necessary to ensure that the front end capital costs of the zero carbon homes policy do not result in necessary land supply for future housing needs becoming unviable.

On this second aspect of cost, the analysis undertaken on behalf of CLG and published in the consultation shows that the upfront capital costs of the steps proposed for moving towards a zero carbon standard are significant even at the energy performance levels required under Code for Sustainable Homes Levels 3 and 4. Our members further consider from the work they have undertaken that the additional costs set out in the consultation document are underestimates. We understand the view that CLG's cost estimates are too low has also been raised in the regional events on the definition recently held by the zero carbon delivery

hub. As a result, the hub is undertaking further work with the industry on costs to better inform consideration of this central issue.

Additional costs of this level would be material in their own right to the viability of future housing land supply. However, they must also be considered alongside the other claims that public policy and regulation are making on residual land values – that is, the cumulative cost burden of regulation that we have separately raised as an issue with the Department.

The existing cumulative cost impact of policy and regulation was increasingly threatening the viability of future housing land supply even before the current downturn. The downturn, with its adverse impact on residual land values clearly exacerbates this problem. Given that most commentators would not predict a rapid recovery to previous levels in residual land values, a real squeeze on the potential for land values to support public policy and regulatory objectives must therefore be assumed for the foreseeable future.

In this context the addition of further regulatory costs as a result of the zero carbon homes policy which would be significant in its own right is necessarily far more difficult to sustain in the light of the wider picture.

We should also in this connection emphasise that for the mass housing market these costs are real ones. Customers are not generally willing to pay a price premium for enhanced energy and carbon efficiency (reference also the findings of the NHBC Foundation's research on consumer attitudes to zero carbon published in April 2008). The up-front capital costs cannot therefore be passed on to purchasers and instead reduce the land value that can be paid to landowners, so directly impacting on project viability and potential land supply.

The Government has not truly recognised the nature of this impact in the consultation document. The costs and benefits analysis in Section 7 of the document focuses rather on a NPV analysis including the carbon benefits of the potential policy options. Since such an approach necessarily omits consideration of the impact on project viability it is not thus in our view the appropriate basis for assessing the merits of the policy options in the actual context within which the industry is operating.

Nevertheless, we note that the NPV analysis including the assessed carbon benefits itself results in generally significantly negative NPVs. This appears to be an important reason why the options assessed do not in practice satisfy the test of sound or proportionate policy.

A further indication of the lack of proportionality in the options considered is provided by the updated results of the research undertaken for the Government by Cyril Sweett and Faber Mansell published in February 2009. This research states in its executive summary that:



“The cost effectiveness for on-site solutions [for “carbon compliance”] ranged from £194 to £231 per tonne of carbon dioxide saved for each scenario modelled [unless a doubling of energy prices is assumed].”

Such costs per tonne of carbon saved are much greater than the shadow price of carbon currently used by the Government as a yardstick for its wider policy making purposes which was £25.50 per tonne in 2007. While the consultation document points out that this yardstick may change there is clearly a very substantial difference at present between the general pricing level assumed as a basis for policy-making and the level of cost that is being proposed for the construction of future new homes. A rationale for why it would be appropriate to ask the house building industry to bear such high costs of carbon – that we assume are close to the marginal abatement cost level for very high levels of national carbon saving – in distinction to other sectors of the economy has not been advanced.

Taking all this together, our conclusion is that the policy options put forward in the consultation document in relation in particular to the level at which “carbon compliance” requirements should be set are both unaffordable – threatening development viability – and disproportionately expensive in terms of the cost per tonne of carbon saved.

Given the failure of the proposed policy options to satisfy the tests of project viability and proportionality it is therefore necessary to consider alternative approaches for meeting the zero carbon homes objective.

Durability of proposed solutions

Another set of important issues that must be addressed if the zero carbon homes policy is to be deliverable and successful over time relates to the durability of the benefits that are sought.

In this regard, at least the following need to be considered:

- The behaviour and buy-in of those living in the homes. People do not necessarily behave as we think they should and the carbon performances that we might expect may not be achieved. There are therefore significant behavioural issues that need to be properly tested in working out the best design solutions and stress testing the practicality of sustaining particular levels of carbon savings from future new homes.

- The lifetime of many small scale renewable energy generating technologies is limited. Depending on customer attitudes and other arrangements put in place, these may or may not be replaced when any original installations wear out. (Cyril Sweett and Faber Maunsell recognise this issue in their work for CLG.)
- The decarbonising of the whole UK energy infrastructure. The consultation document assumes that the national energy infrastructure will be largely decarbonised within about 30 years in order to meet our binding 2050 target for carbon reduction. That being so, any current drivers for high levels of on-site carbon compliance are likely to have been overtaken and future decisions on housing design and energy supply will be based on the availability of low/ zero carbon electricity from the grid and new mass renewable heating options including heat from waste and district heating.

To be soundly based and robust therefore the zero carbon homes policy and definition needs to take full account of these issues and ensure as far as possible that the policy formulated for 2016 is well aligned with our expectations of what will make sense in the context of 2025, 2030 and beyond.

If current policy is not robust in this regard the result might well be that we invest (on a sub-optimal basis in terms of both the comparative and absolute costs and benefits as discussed above) in solutions that quickly become dated and will not be maintained.

The proposed hierarchy of measures

We recognise that the proposed hierarchy of measures for achieving a zero carbon standard is a constructive attempt to create a practical route for attaining a level of carbon reductions that can be demonstrated to be “zero carbon”. It takes account of the technical limits to what house builders could in principle achieve by way of solutions on-site and also that there are cost issues to consider.

We fully support the principle that the first emphasis should be on “energy efficiency”. This will provide for long-lasting carbon reduction benefits with a high degree of certainty. As the consultation document recognises, however, there is a judgement to be made about where to draw the line in capping minimum fabric efficiency requirements given the escalation in costs involved in achieving the highest current public standards.

Beyond the “energy efficiency” level of the proposed hierarchy, a number of more difficult delivery issues arise. We would summarise these as follows:



- The costs rise more steeply for “carbon compliance” measures than for “energy efficiency” and thus heighten concerns about proportionality and viability.
- Partly for the reasons touched on in the previous section of this letter, there is uncertainty about the longevity of “carbon compliance” measures compared to other elements in the proposed hierarchy. In the latest published version of the Cyril Sweet/ Faber Maunsell analysis for Government it is stated that “As Allowable Solutions are assumed to have a lifespan that is longer than any on-site carbon saving option (with the exception of energy efficiency measures) the cumulative carbon saving is also higher when greater use is made of Allowable Solutions”.
- Putting the two above issues together the “carbon compliance” element of the hierarchy would provide the least certain long-term benefits for the highest cost per tonne of carbon saved.
- In addition, there is a very real practical difficulty about what level any minimum “carbon compliance” requirement might be set at. The potential for “carbon compliance” in terms of both technical feasibility and commercial viability will vary significantly from site to site depending on all the variables that may apply – size, site preparation issues and costs, nature of the homes, density, local topography and weather conditions and so on. Setting any “carbon compliance” level much different to the carbon saving reasonably achievable through “energy efficiency” will therefore be likely to jeopardise the viability of some types of development or developments in particular locations or areas. That would therefore result in a further threat to the delivery of the range and number of homes required to meet national housing requirements.

In total these issues and considerations suggest to us that the proposed hierarchy should be simplified so as to distinguish simply between a feasible minimum requirement for energy/fabric efficiency and other measures that can reasonably be taken in any given case. Having considered the issues dealt with in the consultation document and what the industry believes to be practically deliverable, we consider it would be appropriate to cap “energy efficiency” and “carbon compliance” requirements at a 44% improvement on Part L 2006 via the proposed changes to building regulations in 2010 and 2013.

Beyond this, the hierarchy should be based simply on the concept of “possible viable approaches”. This would promote the best technical and most cost-effective means of making carbon savings equivalent to the zero carbon requirement.



Cost cap, incentives and finance mechanisms

A further set of issues that requires particular focus relates to the proposal for a cost cap for “allowable solutions” and the availability of financial incentives and other means of supporting investment.

We welcome the concept of a cost cap as this in part recognises the concerns we have articulated about the impact of the zero carbon policy on project viability. In the context of our wider dialogue with the Department about the cumulative cost burden of policy and regulation, however, we are puzzled that it is proposed any cost cap should only apply to “allowable solutions”. This implicitly appears to suggest that it is of no concern what level of cost might arise from the implementation of the other elements of the proposed hierarchy of measures whatever their impact on project viability and the proportionate burden on house builders compared to other sectors of the economy.

In terms of the fundamental principle of proportionality and the need for macro-economic and policy consistency set out earlier in this letter we do not believe this is the right approach. It would in our view be far more appropriate and soundly based to provide for a cost cap that applied to the costs of implementing the whole of the hierarchy. Set at an appropriate level consistent with economy-wide carbon pricing mechanisms, such a cap would ensure that the desired carbon savings could be made in the most cost-effective way from case to case depending on the circumstances that applied.

Such a cost cap would also help provide broad assurance to the industry that it was not being asked to incur a higher cost per tonne of carbon saved than the rest of the economy. It would not, however, necessarily overcome the threat to project viability.

For that purpose the zero carbon policy should consider more coherently the role that appropriate financial incentives could play. The consultation raises one such issue in asking whether new developments should be eligible for the new Feed-in Tariffs for local scale renewable electricity and the Renewable Heat Incentive.

Again we are puzzled why there is any question about whether new residential development should qualify for such incentives. Given the higher cost per tonne of carbon saved and the shorter prospective life of such solutions, if the Government’s wish is to promote the use of on-site “carbon compliance” measures where they are broadly technically sensible such take up will necessarily be less if the incentives cannot be tapped. Preventing developers from accessing such incentives would also introduce another element of unfairness or disproportionality into the policy compared to the decarbonising of other sectors of the economy.

A further consideration on consistency and proportionality of policy in this area relates to the proposals set out in the Government's recent consultation document on the proposed Heat and Energy Saving Strategy (HESS). It is notable that these proposals recognise the obstacle to the realisation of major energy efficiency and carbon reduction gains that the front-end capital costs of the relevant measures poses. HESS then goes on to seek views on a number of possible innovative financing mechanisms such as energy suppliers offering consumers a financing package for energy efficiency and low carbon energy measures, service charging via ESCO models or investment funded via distribution network operator charges.

These ideas are interesting and in principle seem to offer a means of squaring the circle of delivering desired carbon savings without saddling householders or businesses with high up-front capital costs.

Since the unwillingness of existing householders to accept such up-front capital costs is directly comparable and analogous to the unwillingness of new homes purchasers to pay a price premium for high levels of energy and carbon efficiency, we think that there would be a strong case for aligning any innovations adopted for the existing built environment with those for the new build sector. In other words, one means of overcoming the project viability threat would be to ensure that new build homes were eligible for the same finance mechanisms as those for existing homes.

Regulatory risk

The consultation document recognises that the proposed hierarchy of measures may be difficult to implement from a regulatory perspective – particularly in respect of the “allowable solutions”.

It seems clear and realistic that fabric efficiency and any on-site measures would be manageable via building control compliance. Off-site solutions would, however, by their nature be more difficult to assess in any given case. From the developer's point of view there is also a potential regulatory risk entailed if assurance of compliance is difficult to obtain. This could delay projects or risk adding unpredictably to costs if any regulatory authority involved took the view that proposed measures were insufficient.

Under both our own proposed way forward and the Government's consultation proposal, therefore, there is a need to provide for an independent mechanism that can provide assurance of compliance with requirements in a timely and cost-effective way.



Our view is that this could best be achieved via an independent body with relevant assessment expertise to issue accredited validations of suitable measures. We would not favour reliance on the planning system as this would introduce a further complex responsibility to the system which is arguably already overloaded in its ability to deal with policy issues. Introducing new responsibilities of this kind would also be contrary to the agreed recommendations of the Killian-Prety Review.

Allowable measures

You will see from our answers to the detailed consultation questions that we believe there is at present insufficient clarity and understanding about how the proposed “allowable solutions” would work.

This uncertainty may compound the possible regulatory risks referred to above, but arguably also suggests that it might be better to look at a simpler mechanism that is easier for all parties to understand and would in consequence prevent regulatory risk and assist public confidence in the policy.

From this perspective we think that there is a good case for giving further consideration to the idea of an energy investment or buy-out fund as proposed in the UK Green Building Council’s report last spring. Clearly the basis for setting this would need to be revisited in the light of the issues raised elsewhere in this letter on carbon pricing and comparative costs, but a simple, transparent fund of this nature would arguably have many advantages in terms of its practicality.

Another possible approach for simplifying off-site provision relevant to the policy would be to set in place arrangements that have the effect of requiring that any energy required by new homes that is not provided via on-site means should be supplied from a duly accredited green source. This could be established in a way to provide assurance that additional renewable capacity was brought on stream to match the requisite demand and to enable householders to continue to choose supplier provided they were able to obtain a suitable green supply from them.

We would strongly favour any such mechanism sitting within the framework of the competitive energy supply market since this would maximise acceptability to customers and provide a driver for energy suppliers to compete to provide such additional green energy on the most cost-efficient basis possible. In this sense such a mechanism would also work with the grain of the UK’s proposed carbon budgets strategy.



The European dimension

In addition to domestic policy considerations, we are aware that negotiations on European legislation may also impinge on the deliverability of the zero carbon homes policy. Both Article 12 of the Renewables Directive and the proposed Recast of the Energy Performance of Buildings Directive could affect the nature and content of future building regulations for energy efficiency and complicate or cut across the current consultation.

Such additional uncertainty is unwelcome to industry and the supply chain in itself, but would certainly be likely to add to the difficulties of finalising a successful route map for achieving a UK zero carbon objective – not least because it may well be two years or more before the compatibility of UK policy with the European legislation could be properly established.

Conclusion

I hope this letter sets out clearly and objectively the major issues we feel need to be resolved in order to provide a policy framework and definition for zero carbon homes that is practically deliverable, avoids the real potential threat to the viability of necessary housing supply and achieves desired carbon savings at a proportionate cost per tonne of carbon saved compared to the economy as a whole.

We remain committed to the house building industry playing its fair part in reducing future UK carbon emissions while building the homes the country so desperately needs. The issues raised in this letter and our proposals for resolving them are offered in the spirit of finding a way forward that can work for all parties and deliver the twin objectives of the 2016

Commitment.

In sum we believe we need a policy approach and definition that:

- Is practically and financially deliverable;
- Is acceptable to consumers;
- Does not entail disproportionate costs per tonne of carbon saved or disproportionate risks for house builders compared to the economy as a whole;

- Is consistent with policy for the existing built environment and other sectors of the economy;
- Irrespective of the cost of carbon involved does not undermine project viability;
- Therefore provides necessary viability safeguards – through finance mechanisms, incentives, an overall cost cap (or a combination of these) and otherwise;
- Avoids unnecessary regulatory risks and burdens which themselves might threaten housing delivery, and;
- Resolves any unhelpful uncertainty that could arise from prospective EU legislation.

Finally, with regard to our dialogue with the Department on the cumulative cost burden of policy and regulation, it is imperative that whatever definition is adopted in the light of the requirements above that the Government provides a clear indication of the priority the zero carbon homes policy should have in relation to the wide range of other existing calls for developer contributions from available land value. It is also essential that means are found of ensuring that this priority is consistently respected by local planning authorities and all other bodies involved in policy and regulatory decision-making relating to the provision of new housing.

On any analysis the zero carbon homes policy is both technically and financially ambitious. Without full and implementable clarity on the priority to be accorded to the zero carbon policy compared to other potential calls on land value, any policy will necessarily run the risk of reducing development viability and undermining necessary housing supply.

Yours sincerely,

John Slaughter
Director of
External Affairs



Annex B: Response Proforma

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

Respondent Details:	
Name: John Slaughter	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
Organisation: Home Builders Federation	
Address: Byron House, 7-9 St James's Street London SW1A 1EE	
Telephone: 020 7960 1604	
Fax: 020 7960 1601	
e-mail: john.slaughter@hbf.co.uk	
Is your response confidential? If so please explain why. (See disclaimer on page 13)	
Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Comments:	
Are you responding as an individual? <input type="checkbox"/> Or are you representing the views of an organisation <input checked="" type="checkbox"/> ?	
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 HBF represents private sector house builders in England and Wales. We have some 300 members ranging in size from large national companies to local businesses. Between them, our members are responsible for about 80% of the new	

homes built in England and Wales.

We assembled the views in this questionnaire and our covering letter following extensive consultation and discussion with our membership. A range of meetings were used for this purpose including discussions with senior members at national level, meetings of our national technical committee and regional technical groups, a meeting of our Smaller Developers Group and dedicated meetings of experts in the field.

As a result, our consultation response should be accorded the weight of many individual companies' views representing collectively a large proportion of house building output.

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

		(please specify)	
--	--	------------------	--

Questions

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?

- Yes, but agreement on the definition of zero carbon is the priority.
- The Code needs to be revised more widely in any case, but it would be better to consider this wider revision once we have settled zero carbon definition
- We also believe the proposed zero carbon hierarchy itself needs to be revised to provide a two level rather than three level model - i.e. energy efficiency and other measures (see our further answers below)

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

- We would wish to underline that our detailed responses to all the individual questions in this consultation document need to be read in the context of the higher level policy issues we have raised in our covering letter. The two documents together form an integrated submission.
- The issues raised by this consultation are so profound for the house building industry's future business climate that the detailed consultation questions themselves do not in practice sufficiently explore the wider realities facing the industry in seeking to achieve a zero carbon standard
- The zero carbon homes policy also needs to form a balanced part of a coherent, economy-wide national strategy for carbon reduction. The consultation questions alone do not enable an assessment of whether that objective is likely to be achieved or not to be made.

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.

- We agree that we should take fabric efficiency improvements as far as we can reasonably go as a priority - through addressing design, thermal bridging, insulation etc
- To be effective efforts to improve fabric efficiency also need customer buy-in - to minimise any gap between theoretical and actual performance levels
- The need for adequate air quality must be factored in as well in determining fabric efficiency standards
- Taking all this and climatic conditions into account, there perhaps needs to be an adjustment in the results of SAP to show an easily recognisable and acceptable outcome measure such as KwHs/ M2 performance. However, this requires further consideration in the context of current discussions on SAP.

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 would if a three level zero carbon hierarchy is used - **but** following careful consideration we do not agree with the proposed distinction between "carbon compliance" and "allowable solutions". Rather we believe there should be a single second level of "**possible viable approaches**" in the hierarchy which enables developers to determine the best solution to adopt from case to case - taking into account all aspects of practical, commercial and consumer viability.
- The basis for our view that the hierarchy should be recast in this way is set out in our answer to Question 4 below and in our covering letter.

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

- Offsite renewable electricity should be allowed as part of our "possible viable approaches" concept where it provides a simple and effective solution
- A prescriptive requirement under "carbon compliance" for a particular level of

carbon saving to be met through on-site provision would inevitably result in cost and other disadvantages for certain types and scales of development that would act as a barrier to such development proceeding. That in turn would undermine the provision of the volume, range of tenures and types of housing needed to meet national requirements.

- It would, however, be near-impossible in practical and regulatory terms to adopt a "carbon compliance" requirement that varied according to the type, scale and context of development.
- House builders should therefore have the flexibility to be able to determine the ways in which the carbon savings required above those achieved via fabric efficiency can most practically and affordably be met.
- On-site solutions will be adopted where they are the most practical and cost-effective to deliver, taking into account the development context, the comparative cost-effectiveness of available solutions and the comparative ease of their practical delivery.
- For the same reasons, house builders should be eligible for any incentives or financial mechanisms available to others where they are relevant to decisions on whether to adopt on-site solutions or not.

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

Yes **No** **Do not know**

If not, what approach would you prefer and why?

- Building control is the right regulatory framework for any on-site solutions adopted under our "possible viable approaches" concept.
- On-site solutions are very technical by their nature, so compliance issues should be dealt with by the building control bodies which have the best resource in terms of the requisite expertise.

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?

- We believe the costs are higher than set out in Annex E based on design work and current examples so far undertaken. The Zero Carbon Delivery Hub is undertaking more work on costs with the industry.
- We also need to see the results of the current Element Energy/ Davis Langdon work for CLG which we believe will substantiate our view that Annex

E underestimates costs

- Equally we need more information on the way the Annex E figures have been built up to assess their accuracy better
- The Cyril Sweett data in Annex E needs to be evaluated in a commercial environment to determine its robustness.

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?

- CLG's own analysis in the consultation document shows that in most cases it is difficult or not feasible at a technical level to achieve this level of carbon efficiency solely through on-site measures
- Where it is possible technically to achieve such reductions on-site they are very expensive even on the basis of CLG's figures - which we believe to be under-estimates
- Such costs levels would be likely to render development unviable - particularly given currently reduced land values and other public policy claims on these such as subsidies towards affordable housing

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:

- We do not see any reason why house builders should not be able to claim or benefit from the availability of feed-in tariffs and renewable heat incentives where relevant to their proposed approach for achieving zero carbon
- Under our "possible viable approaches" proposal, such tariffs and incentives would be important where in making carbon efficiency improvements beyond those entailed under fabric efficiency requirements, house builders themselves would be interested in choosing on- or near-site renewable energy solutions
- If the Government wishes to promote the adoption of such on- and near-site renewable energy solutions where they are technically feasible and otherwise practical to achieve, it is important that the financial incentives provided for such purposes are available to house builders as well as to others to help reduce the otherwise significantly adverse impact on the level of front-end capital costs for housing project investment.
- Not allowing house builders to claim feed-in tariffs and renewable heat incentives would subject them to a comparative disadvantage compared to others sectors of the economy
- The significant cumulative cost burden of policy and regulation as whole on the viability of land supply for housing also needs to be taken into account in considering this issue. Given this wider cost burden, on-site solutions are likely in most cases to be unviable even if technically feasible unless other calls on land value are themselves substantially reduced or financial support - such as the proposed tariffs and incentives - for on-site solutions made available.

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

X

or (ii) 70%

or (iii) 100%



Please give reasons for your preference:

- We do not think this is the right question to ask
- Policy requirements should be based first and foremost on an assessment of what it is technically and otherwise practical to achieve
- Our assessment is that it will be genuinely challenging for the industry to achieve carbon reductions of 44% compared to 2006 Part L through improvements to fabric efficiency
- We do not think it is generally possible to go further than this through fabric efficiency, but the technical possibilities for achieving additional carbon reductions on-site will vary greatly between different types of development.
- Costs of on-site solutions will similarly vary, but are generally comparatively high - and are generally the highest cost per tonne of carbon of the possible options available. Different types and contexts of development will in turn vary greatly in their ability to absorb the additional costs of on-site solutions from available land value.
- Taking all the above into account, it is essential that house builders should be able to claim feed-in tariffs and renewable heat incentives if the Government wishes to encourage on-site solutions where they are in principle technically feasible solutions

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)?

- It follows from our earlier answers that we believe the "carbon compliance" level should in fact be the same as that for energy or fabric efficiency because it is very hard to see how a single level of carbon reductions beyond this can be established which is both technically feasible and viable to deliver on-site for the full range of developments.
- The potential alternative option of different levels of carbon reduction for different types of development would be very hard - if not impossible - to police in a fair and effective way

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

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.

- Not in principle
- However, there is insufficient detail about the proposed options to be sure if they will work effectively
- A key requirement for any "allowable solutions" is that they must not be mandated by local authorities but chosen as the most appropriate options by house builders. In particular, policy must clearly establish that house builder selection of any allowable solution cannot constitute a reason for refusal of

planning permission

- The export of electricity from a site-based renewable facility should also be included as an allowable solution. It is not clear why this is not mentioned.
- House builders should not themselves be required to carry out work to retrofit existing buildings in the locality if this option is chosen as they do not generally undertake such work
- It is not clear what is meant by transferring the benefit of ownership in investments in LZC energy infrastructure to the buyer of the home, so it is difficult to evaluate the benefits of such an option
- Overall it would be more transparent and there would be less risk to housing delivery if the industry were able to make financial contributions on an agreed basis into either a community energy fund or a similar vehicle dedicated to investing in additional capacity in suitable renewable energy supply infrastructure.
- An alternative would be for arrangements to be put in place for necessary off-site energy supply to new homes to come from accredited green sources involving an assurance that additional renewable capacity was being brought on stream to match the demand entailed.

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

- Yes, but this question would not arise under our proposal for a "possible viable approaches" model

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?

- a Community Energy Fund (see above)
- supply of energy to the new homes via an accredited green tariff based on investment in additional renewable energy capacity (see above)
- supply of grid-injected biogas
- funding education on energy efficiency
- offsetting via landscaping or provision of carbon sinks
- clearly leave the door open at any time to the addition of other suitable measures so as not to stifle innovation that could be of wider benefit

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.

- We do not think it would be appropriate to use CIL as an allowable solution
- CIL is intended to help fund infrastructure requirements arising from the impact of new development on existing infrastructure capacity and related services in the wider local community and a demonstrable need to augment this
- It would in any case be very difficult to ensure that there was a valid quantifiable relationship between CIL payments and investment in suitable energy facilities that equated to the energy requirements of particular new homes
- CIL will be set as an agreed payment per housing unit and will not take account of the actual position for any particular development. As a result it would not be sensitive to the actual level of on-site provision of renewable energy that might be feasible in a given case.

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 :

- More than sufficient local emphasis.
- It should be borne in mind that the smaller, more local in scale the solution, the more expensive it is likely to be - and the higher the cost per tonne of

carbon saved

- Full account should be taken of national, macro-policy objectives in determining allowable solutions
- Allowable solutions that support and facilitate such national goals should be equally acceptable

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 not the right course for enabling the UK as whole to reduce its carbon footprint as cost-effectively as possible

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:

- No.
- This would be too complicated to implement effectively
- It is also difficult to see what rational criterion could be applied to such a distinction. From the national perspective, the most important judgement is whether a measure is cost-effective or not in terms of the cost per tonne of carbon saved. The results of such assessments are unlikely to be correlated with whether or not a solution is in a particular government office region.
- Such an approach is in addition unlikely to be meaningful and valued by home buyers

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

- The 2012 review alone would not provide sufficient clarity
- The position needs to be kept under active review from the present onwards so that the results of current projects and other work undertaken can inform thinking on a progressive basis
- If the range of allowable solutions or any cost cap needs to be changed for any reason it is important to know about this as soon as possible in view of the potential impact on future land supply for housing

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?

- we do not think it is correct to single out brownfield land in this regard
- the fundamental issue that needs to be considered - whether the site is brownfield or greenfield - is whether land values can sustain proposed solutions or not
- there needs to be a wider viability test - that where the range of "possible viable approaches" in our terminology is not practical or viable in terms of land supply, derogations can be considered

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.

- the review also needs to consider the implications of the planned reduction in carbon intensity of the national grid and the promotion of renewable heat for solutions
- as stated for question 16, we also believe the position needs to be kept continuously under review from now onwards - both in regard to the range of allowable solutions and any cost cap

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:

- as mentioned for questions 16 and 18, we think the position should be kept continuously under review from now onward
- it would be wrong to take a hard and fast view about a single date given that we are starting from a position of mainly theoretical knowledge

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.

- A starting principle should be that the home building industry should not be subject to a higher cost per tonne of carbon saved than the rest of the economy
- Home builders are not in the business of investing directly in energy capacity beyond what makes practical and commercial sense within the development site itself

- It would therefore be inappropriate to ask home builders to make a financial contribution to allowable solutions that relates to the cost of existing mechanisms such as the Renewables Obligation governing specific investment in the energy market by energy utilities. Such an approach would discourage the provision of investment capital to the home building industry by in effect requiring it to make a case to its investors for non-core investment subject to different rates of return etc than home building for activities it does not by definition undertake or control.
- Under the structure of measures proposed in the consultation document, it would be more appropriate to consider a cost cap that was lower than the shadow price of carbon to take account of the contribution made and costs already incurred by home builders in improving fabric efficiency and undertaking any on-site measures.
- **under our "possible viable approaches" proposal, the cost cap should apply to all relevant options, including on-site measures and take account of costs entailed in improving fabric efficiency too**
- it should also be supplemented case by case by a land supply viability safeguard test enabling wider options to be considered where necessary

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 , **Neither option is appropriate or applicable**

or (ii) 60 years

Please give reasons for your preference.

- This is a questionable concept given that national climate change strategy is to decarbonise the country's whole energy infrastructure as soon as possible
- Further thought is therefore required to ensure any such policy does not over-provide savings and impose unwarranted costs on home builders

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

- Initial measures taken should be considered sufficient to meet requirements for allowable solutions for as long as is reasonably necessary
- The lifetime of allowable solutions should in practice exceed the period needed to significantly decarbonise the whole energy infrastructure under the Government's wider national climate change strategy
- In relation to any reliance on small-scale micro-generation, a view would need to be taken on the timeframe within which equipment would need to be

replaced. That in turn would be related to assumptions made about use and maintenance patterns actually adopted by homeowners.

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:

- Local authorities do not generally have the capacity to undertake wide-ranging assessments of allowable solutions and their respective technical, commercial and other viabilities
- The outline proposals still carry real regulatory risk in this regard
- The main mechanism should be for home builders to show that they have adopted appropriate solutions based on a system of independent accredited validation
- However, as mentioned above (Questions 11 and 13), there is a strong case for considering a simpler and more transparent mechanism such as an energy investment fund or accredited green energy supply based on agreed criteria that would avoid the regulatory risk inherent in the current proposals.

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:

- Yes, in respect of fabric efficiency and any on-site measures adopted by home builders under our "possible viable approaches" concept
- Otherwise we need to determine who might provide accredited independent assessment of measures
- We may need to look at a system of certification of payments for allowable solutions or possible approaches

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.

- The industry considers that the costs of building to the energy performance standards entailed in the steps towards achieving zero carbon are higher than those set out in the consultation document.
- The impact assessment critically focuses on NPVs for investments - including the projected carbon benefits
- Such an assessment does not, however, accord with the realities facing home builders
- Given that most customers do not accord a price premium to higher standards of energy and carbon efficiency in new homes, such a NPV analysis can only relate to the presumed societal costs and benefits not to the value a customer is prepared to accord to any benefits.
- The costs and benefits analysis therefore underestimates the actual cost to house builders - which is critically the non-recoverable up-front capital cost involved
- The NPV analysis nevertheless produces negative results for the policy options proposed.

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.

- As far as we can tell, it does capture the benefits
- As stated for the previous question, however, it is important to recognise that the benefits identified are essentially societal benefits rather than those perceived and valued by individual home owners.
- Nor does the Impact Assessment consider the impact of the proposals in the wider macro-economic and policy context.
- This means there is no assessment of whether the policy is balanced and proportionate in its impact for the benefits entailed compared to the wider national strategy for decarbonising energy supply and the economy.

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.

- The Impact Assessment does not adequately reflect the impact of the proposals on home builders
- In particular, in addition to the points made under question 25 the Assessment does not make any allowance for the total cumulative cost burden of policy and regulation on the viability of land supply for housing development

- The true impact of the costs of the proposed policy on home builders cannot be assessed without proper consideration of the difference they make to land supply viability when added to the other costs that already typically attach to new housing developments - affordable housing, infrastructure etc
- In addition, the Assessment needs to make allowance for the likelihood that real land values will be lower for some time ahead than they were in 2007
- The restricted nature of the issues considered under the Assessment necessarily means that it will seriously underestimate the actual adverse cost impact on development viability
- That in turn means that the Assessment will have over-estimated the benefits because fewer of them will in fact be achievable given the underestimate of costs.
- In summary, we do not therefore believe the Assessment as it stands provides a sound basis for determining policy on the definition of zero carbon
- A fresh Assessment of costs and benefits needs to be undertaken including all the factors set out in our answers to questions 25 to 27.

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:

- We believe it is appropriate for the same policy mechanisms to apply to non-domestic buildings and to domestic buildings as far as possible.
- Such consistency is desirable given that many developments involve an element of mixed use.
- Where local or on-site solutions can be considered, it is also important to encourage a broadly common approach so that the benefits of mixed loads for energy supply facilities can be taken forward as practically as possible.

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:

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?

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

If you disagree, what alternative would you suggest and why?

Yes, subject to the key point made in our answers above that the hierarchy needs to be simplified further to a two-level model.

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?

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?

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?

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

Please make any further additional comments here, ensuring that you clearly refer to any relevant questions or responses submitted above.

Any other comments: