Department for Communities and Local Government

Next steps to zero carbon homes - Allowable Solutions

Consultation

August 2013
Department for Communities and Local Government

This document/publication is also available on our website at www.gov.uk/dclg

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August 2013

ISBN: 978-1-4098-3978-1

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The Consultation Process and How to Respond

Basic Information

To:	This is a public consultation and it is open to anyone with an interest in these proposals to respond
Body responsible for the consultation:	The Department for Communities and Local Government is responsible for the policy and the consultation exercise.
Duration:	This consultation will run for 10 weeks. It will begin on 6 August 2013 and end on 15 October 2013.
Enquiries:	Email: Building.Regulations@communities.gsi.gov.uk

How to respond:	A response form is provided at Annex A of this document. A Word version of the response form is available on this consultation's webpage. Please send responses by email to: Building.Regulations@communities.gsi.gov.uk Postal responses can be sent to: Stephen Porter Department of Communities & Local Government 5 E/8, Eland House, Bressenden Place, London, SW1E 5DU
After the consultation:	A summary of responses to the consultation will be published.

Overview

Topic of this Consultation:	‘Allowable Solutions’ - the carbon offsetting process and measures that house builders may support to achieve the zero carbon homes standard from 2016
Scope of this Consultation:	The scope of this consultation is to set out, seek views and gather further evidence on the key principles, price cap and processes for the delivery of Allowable Solutions.
Geographical Scope:	England
Impact Assessment:	A development stage impact assessment has been published alongside this consultation document on the consultation’s webpage.

Confidentiality and data protection

Information provided in response to this consultation, including personal information, may be published or disclosed in accordance with the access to information regimes (these are primarily the Freedom of Information Act 2000, the Data Protection Act 1998 and the Environmental Information Regulations 2004).

If you want the information that you provide to be treated as confidential, please be aware that, under the Freedom of Information Act 2000, there is a statutory code of practice with which public authorities must comply and which deals, amongst other things, with obligations of confidence. In view of this it would be helpful if you could explain to us why you regard the information you have provided as confidential. If we receive a request for disclosure of the information we will take full account of your explanation, but we cannot give an assurance that confidentiality can be maintained in all circumstances. An automatic confidentiality disclaimer generated by your IT system will not, in itself, be regarded as binding on the department.

The Department for Communities and Local Government will process your personal data in accordance with the Data Protection Act 1998 and in the majority of circumstances this will mean that your personal data will not be disclosed to third parties. Individual responses will not be acknowledged unless specifically requested.

Help with queries

Questions about the policy issues raised in the document can be sent to the contact given in the ‘How to respond’ section above.

A copy of the Consultation Principles Guidance is at:

https://www.gov.uk/government/publications/consultation-principles-guidance

Are you satisfied that this consultation has followed these principles? If not or you have any other observations about how we can improve the process please email:

consultationcoordinator@communities.gsi.gov.uk

or write to:

DCLG Consultation Co-ordinator, Zone 4/J1, Eland House, Bressenden Place, London SW1E 5DU.

Introduction

1. In Budget 2013 the government reaffirmed its commitment to zero carbon homes and announced that there would be a consultation on next steps on zero carbon, including the means of delivering Allowable Solutions. This document meets that remit. It sets out:

   - the government's latest thinking on how it intends to take forward work on developing fabric energy efficiency and carbon compliance performance standards from 2016; and
   - for consultation, a set of design principles for Allowable Solutions.

2. The government is committed to requiring all new homes from 2016 to meet the zero carbon standard.

3. Substantial and cost-effective reductions in carbon emissions from buildings are an essential part of our national effort to reduce greenhouse gas emissions by at least 80% on 1990 levels by 2050. Last year, the residential sector accounted for about a quarter of emissions, so action to tackle emissions from both new and existing buildings will be critical to achieve this target and to the transition to a low-carbon economy. And more energy efficient homes mean lower energy bills for consumers.

4. We expect that around two thirds of the homes of 2050 are already standing today, so government has developed the Green Deal and the Energy Company Obligation, mechanisms that can contribute towards the up-front costs of improving the energy efficiency of homes.

5. However, that still leaves the remaining third of 2050 homes yet to be built. The zero carbon homes policy stops us 'locking in' emissions from new homes.

6. It was originally intended that new homes would meet the whole of the zero carbon standard 'on-site'. However, the government recognises that it would not be cost-effective at this time, affordable or technically feasible to meet the zero carbon homes standard in all cases solely through measures on the dwelling itself, like fabric insulation, energy efficient services, and/or renewable energy generation measures (*e.g.* solar panels).

7. Therefore the government proposes that house builders can achieve the zero carbon standard by mitigating the remaining emissions 'off-site', in effect a kind of carbon offsetting or abatement.

8. Allowable Solutions is the overarching term for the carbon offsetting process and the various measures which house builders may support to achieve the zero carbon standard from 2016.

9. The purpose of this consultation is to set out, seek views and gather further evidence on the key principles and processes for the delivery of Allowable Solutions.

10. In early 2011, the government invited industry to come forward with ideas for how Allowable Solutions might be delivered. The independent Zero Carbon Hub has published two reports on this subject[1] and the government is grateful for the work of the Hub with industry partners on preparing those reports. This consultation document has drawn on the findings and recommendations of those reports as appropriate.

Considerations before taking forward Allowable Solutions

11. The options for Allowable Solutions may involve payments by house builders to third parties who would provide the necessary carbon abatement. This may mean that Allowable Solutions are classed as an imputed tax and spend measure. The fiscal and public expenditure implications flowing from treating Allowable Solutions as a tax and spend measure will be a significant consideration for final decisions.

12. The options for Allowable Solutions may also raise potential State Aid issues which would need to be resolved with the European Commission before a final decision can be made.

13. The government intends as far as possible to design Allowable Solutions to ensure that they can be delivered through the legislative framework of the Buildings Act 1984 and related secondary legislation such as the Building Regulations 2010 (the 'Building Regulations'). This may require changes to the related secondary legislation in due course. Depending on design decisions changes to primary legislation may also be needed. Any such changes would be subject to the Parliamentary time being available.

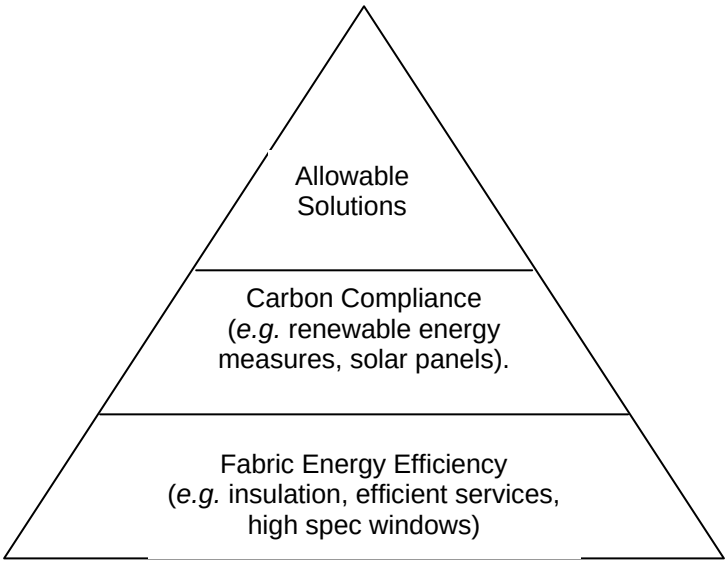
[1] Allowable Solution for Tomorrow's New Homes. Towards a Workable Solution, July 2011, http://www.zerocarbonhub.org/resourcefiles/Allowable_Solutions_for_Tomorrows_New_Homes_2011.pdf; Allowable Solution. Evaluating Opportunities and Priorities, September 2012, http://www.zerocarbonhub.org/resourcefiles/Allowable_Solutions_Oct_2012.pdf

Chapter 1

Fabric energy efficiency and carbon compliance

1.1 In the Growth Review 2011, the government set out its revised definition of the zero carbon standard.[2] The zero carbon homes standard will require all carbon dioxide emissions arising from energy use regulated under Building Regulations to be abated from 2016. Regulated energy may derive from sources such as fixed heating, hot water, ventilation and fixed lighting and other fixed building services. However, it does not include appliances such as white goods.

1.2 Meeting the zero carbon standard will require house builders to meet requirements for fabric energy efficiency, carbon compliance and Allowable Solutions.



1.3 Requirements for fabric energy efficiency and carbon compliance are to be achieved by measures incorporated within or on the development site, including by direct connection to community energy schemes. They set a minimum threshold for onsite measures.

2 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/184602/2011budget_growth.pdf.pdf

1.4 The government plans to reach the zero carbon standards through a staged approach of steadily strengthening Building Regulation requirements. The Building Regulations are functional: ie they are technology neutral setting out performance based standards to be met but do not prescribe specific means as to how to do so. Under Part L of the Building Regulations, developers have to achieve energy performance targets which are set through the National Calculation Methodology (NCM). Those targets are currently expressed in terms of a Target Emissions Rate in kilogrammes of carbon dioxide per square metre per year ($kgCO_2/m^2yr$). Compliance with the target can be achieved by a combination of good fabric insulation, efficient fixed building services, building or development integrated renewables and/or connection to community energy schemes.

1.5 In 2010, the Target Emissions Rate was set at a level which was a 25% improvement on the previous (2006) standard (the zero carbon standard represents a 100% improvement on the 2006 standard).

1.6 The government has announced a further uplift in the Target Emissions Rate to be introduced in a revised Part L. As well as strengthening the Target Emissions Rate, the new Part L will place a strong emphasis on fabric energy efficiency by including a separate energy demand target in kilowatt hours per square metre or kWh/m^2yr.

1.7 The government is conscious that industry needs to plan the design solutions for 2016 carbon compliance and fabric energy efficiency. Although the government cannot anticipate the final detailed requirements in 2016, which will be subject to full consultation in due course, the government is keen to start thinking about the levels at which those requirements could be set.

1.8 As a basis for this work, the government intends to start from the work undertaken by the Zero Carbon Hub which made recommendations for what the energy efficiency and carbon compliance levels could be for 2016.[3] The Zero Carbon Hub made recommendations for a carbon target for carbon compliance and energy demand targets for fabric energy efficiency levels. These recommendations were set in absolute terms and for three different dwelling types. They are set out in the following table:

[3] http://www.zerocarbonhub.org/resourcefiles/ZeroCarbonStrategies_web.pdf; http://www.zerocarbonhub.org/building.aspx?page=2; http://www.zerocarbonhub.org/definition.aspx?page=8

Table1: Zero Carbon Hub's recommended targets for carbon compliance and fabric energy efficiency levels

	Detached	Attached (semi detached, terrace)	Apartment (Low rise, less than four storey)
Fabric Energy Efficiency (kilowatt hours per square metre or kWh/m^2yr)	46	46 *(semi-detached and end terrace)* 39 (mid terrace)	39
Carbon Compliance (kilogrammes of carbon dioxide per square metre $kgCO_2/m^2yr$)	10	11	14

1.9 The carbon compliance recommendations were the equivalent of the following percentage improvements on the 2006 standard:

- 60% for detached houses
- 56% for attached houses
- 44% for low rise apartment blocks

1.10 It was also recognised that further work was needed in a number of areas such as determining an appropriate target for high rise apartment blocks and for technical changes which would need to be addressed in the National Calculation Methodology.

1.11 The government, in May 2011, made clear its intention to use the data values recommended by the Zero Carbon Hub as the basis for future consultation and reflected the values in the impact assessment published by the Department in May 2011.[4] The government remains of the view that these values represent a reasonable place to start and it is recognised that a significant amount of work was involved in determining these levels which should not be lightly set aside.

1.12 However, there have been significant developments since then:

- the government has now announced the uplift in the energy performance requirements in the 2013 changes to Part L

[4] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/6288/1905485.pdf

(Conservation of Fuel and Power) of the Building Regulations and also that there will be a new target for fabric energy efficiency.

- the Zero Carbon Hub's Carbon Compliance report[5] set out as an industry recommended target for the house building industry that by 2020 at least 90% of all dwellings would meet or perform better than the designed energy/carbon performance. This is in the light of evidence from a number of studies which suggest that there is a significant gap between designed and completed building or as-built (post-completion) performance. The Zero Carbon Hub has instituted a major work programme with the industry, which the government has supported financially with a grant, to investigate and address the issues. The Zero Carbon Hub has published a progress report providing a summary of the collaborative work carried out to date and initial findings[6].
- the government will very shortly be publishing a consultation on local housing standards. This will consider energy performance standards for new homes which are set in the Code for Sustainable Homes as well as in Building Regulations. The aim of the housing standards review is to rationalise and simplify housing standards. The recent announcement on Part L 2013 and the trajectory toward zero carbon proposed in this consultation provide the context for the review's consideration of energy performance standards.
- finally, the requirements of the recast of Directive 20123/31/EU of the European Parliament and of the Council of 19 May 2010 on the energy performance of buildings ('EPBD')[7] are now in force. The Directive requires Member States to ensure that all new buildings are 'nearly zero energy' from the end of 2020 (with the requirement to come into force in respect of new buildings occupied and owned by public authorities after 31 December 2018). A 'near zero energy' - building means a building that has a very high energy performance, as determined in accordance with methodology in Annex 1 to the Directive. The nearly zero or very low amount of energy required should be covered to a very significant extent by energy from renewable sources, including energy from renewable produced on-site or nearby. While the Directive sets the framework for the definition of nearly zero energy buildings, the final detailed application in practice of that definition (e.g. what is *"very high energy performance"*) is the responsibility of the Member States. The government considers that its approach to zero carbon buildings is compatible with the

[5] http://www.zerocarbonhub.org/resourcefiles/CC_TG_Report_Feb_2011.pdf
[6] http://www.zerocarbonhub.org/news_details.aspx?article=40
[7] The recast Directive can be seen at: http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2010:153:0013:0035:EN:PDF

Directive's requirements. Nevertheless, the government has to be conscious of these requirements.

1.13 There have been developments in domestic policy also which are relevant to the setting of energy performance standards for new buildings in 2016. For example, earlier this year the government has published its strategy for low carbon heat which sets out how the government intends to promote and incentivise low carbon heating[8] and it has recently published tariff levels for the domestic renewable heat incentive[9].

1.14 Because of their functional nature, Building Regulations can readily accommodate the development of new and innovative technologies. There have also been significant developments in the technological landscape which need to be taken into account:

- significant and on-going reductions in the costs of solar photovoltaic panels[10]
- the development of technologies such as flue gas heat recovery which can deliver carbon and energy savings at reasonable cost
- the evidence of projects such as AIMC4 which aims to develop and apply innovative materials, products and process to meet the Code for Sustainable Homes Level 4 energy performance standard through innovative fabric solutions alone[11]

1.15 For all the reasons set out above, therefore, the government thinks it right to start work now on thinking about the standards for 2016. In doing so, the government requires robust evidence. As noted above, the Zero Carbon Hub's recommendations were based on major pieces of analysis and were broadly the subject of consensus amongst the industry. The government therefore intends to work with industry and other partners over the coming months on reviewing the assumptions which underpinned the recommendations made by the Zero Carbon Hub to check that they still represent a sound basis for detailed work to be undertaken in preparing further proposals for Part L in 2016.

1.16 The government also intends to work with industry on the technical issues raised in the Zero Carbon Hub Carbon Compliance report (reference 5 above), which need to be considered and where appropriate incorporated into the revision of the National Calculation Methodology which will be required for 2016.

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[8] https://www.gov.uk/government/publications/the-future-of-heating-meeting-the-challenge
[9] https://www.gov.uk/government/news/the-heat-is-on-for-householders
[10] Department of Energy & Climate Change commissioned report *Solar PV Cost Update* of February 2012 by Parsons Brinckerhoff: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/43083/5381-solar-pv-cost-update.pdf
[11] Further details of the AIMC4 project can be found at: http://www.aimc4.com/

Question 1	**Do you agree that the government should base its consideration for energy performance standards for 2016 on the fabric energy efficiency and carbon compliance standard recommended by the Zero Carbon Hub and endorsed by the government in May 2011?** **Yes / No. Please give reasons for your answer.**

Question 2	**Do you have evidence, including data on costs, which you can make available to DCLG and could be used in reviewing the assumptions underpinning the Fabric Energy Efficiency and Carbon Compliance standards?**

1.17 In considering evidence and what this might mean for the development of detailed proposals for 2016, the government will be guided by the following principles:

- maintaining the technology neutral approach of Building Regulations, and avoiding setting standards which may lead house builders to use sub optimal technological solutions or place too great an emphasis on untested technologies particularly when rolled out at scale.
- ensuring that standards can be met across all types of developments (eg not ruling out particular fuels or types of built form).
- standards are set at levels which ensure that the carbon and energy savings are achieved as cost effectively as possible.

Chapter 2

Design principles for Allowable Solutions

Allowable Solutions: Basic Approach

2.1 In May 2011 the government announced that where house builders can deliver more ambitious carbon reductions on the site they will have the option to do so but where it is not cost effective, government will ensure a cost-effective mechanism is available that allows house builders to meet their commitments off-site at a cost no higher than the government's long-term value of carbon.[12] Government said the intention was to work with industry on options for a mechanism to deliver these off-site measures, which will:

- be made available to all developers operating in England;
- be cost effective by ensuring off-site measures are no costlier than the government's long term value of carbon; and
- ensure that any funds raised will be dedicated to carbon abatement

2.2 The rationale for taking this approach within the zero carbon approach is that it may not be cost effective or always technically feasible to be able to achieve the zero carbon homes standard through on-site measures alone for all types of dwelling and for all types of development. Though highly insulated and air tight dwellings, for example using the Passivhaus standard, can go a long way towards the zero carbon homes standard, it can be an expensive approach and in any case there would still likely to be some residual emissions for energy use which fabric insulation cannot cater for (*e.g.* hot water). Likewise, the ability to use solar panels is limited by available roof space and orientation / positioning / overhang / shadowing; and the use of certain technologies like ground source heat pumps is also limited by the topography of the development. The May 2011 Zero Carbon Homes impact assessment[13] analysed options for a higher on site threshold which were significantly less cost effective than an approach including Allowable Solutions.

[12] Written Ministerial Statement by Housing Minister: 17 May 2011: http://www.publications.parliament.uk/pa/cm201011/cmhansrd/cm110517/wmstext/110517m0001.htm
[13] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/6288/1905485.pdf

2.3 The policy intention is to unlock carbon savings which would not otherwise have been brought forward thus helping meet carbon budgets. In particular, the policy can help promote additional energy efficiency measures away from the particular site being developed, including retrofitting existing buildings, which represent cost effective ways of meeting carbon budgets and also help support low carbon heating systems. In so doing, Allowable Solutions can also help leverage extra funds for carbon abatement opportunities from the private sector and promote innovation in developing carbon abatement opportunities which can have positive economic effects and cut energy bills for consumers.

Design Principles

2.4 In order to achieve these objectives, the government proposes a set of basic design principles for Allowable Solutions:

(a) Allowable Solutions arise from the obligation for house builders to mitigate the carbon emissions arising from regulated energy. Given this basic obligation, it is right that **house builders decide how they meet that obligation** and should not have this dictated to them. This is in line with the basic functional approach in Building Regulations whereby the regulations set out functional requirements and underlying performance standards but leave it to developers to determine the measures they will use to meet their obligations.

(b) Flowing from this, the government wishes to develop **a framework which gives house builders choice and flexibility** in how to meet their obligations. That is why a variety of compliance routes are suggested in this consultation. Choice and flexibility will, the government believes, also encourage innovation and competition and thus drive down the costs of meeting the obligation and delivering Allowable Solutions.

(c) The **carbon savings deriving from Allowable Solutions should be additional** and over and above the carbon savings that would have been delivered without the availability of Allowable Solutions. Chapter 4 below sets out ideas as to how this design principle might be expressed in the operational design of Allowable Solutions, in particular around appropriate verification arrangements.

(d) The government wishes to ensure that **Allowable Solutions deliver cost effective carbon savings.** It is in no one's interest to ask house builders to deliver carbon savings at exorbitant costs, which compromise the viability of development, or to divert resources into delivering expensive carbon savings when more cost effective

opportunities are available. That is why the May 2011 statement set out that government would price Allowable Solutions in relation to long term carbon values as means of benchmarking a cost effective price. This principle has been expressed in the options for pricing Allowable Solutions discussed in Chapter 5 below.

(e) Finally, it is essential that steps are taken to **minimise the administration overheads**, while ensuring that the key elements of the delivery system are robust (most notably the verification scheme).

Question 3	**Do you agree with these design principles for Allowable Solutions set out in paragraph 2.4 (a to e) of the consultation document? Yes / No** **If no, with which do you disagree (a, b, c, d and/or e) and why?**

Question 4	**Are there other design principles which you think that the government should consider? Please provide an explanation for any other design principles suggested.**

Outline of Delivery Model

2.5 Taking those design principles the rest of this chapter sets out a basic model for delivering Allowable Solutions.

2.6 The first step is for the house builder to work out exactly how much carbon they need to abate through Allowable Solutions. This will be done by using what is called the National Calculation Methodology. This is an established process under Building Regulations. As noted in paragraph 1.16 above, the government recognises the need to work on developing the National Calculation Methodology for 2016.

2.7 House builders will then be able to meet the requirement through any mix of the options below, depending on what offers them the most cost effective method of meeting the carbon abatement requirement.

(i) Undertaking the full 100% of carbon abatement on site or through connected measures (*e.g.* a heat network) ;

(ii) Meeting the remaining carbon abatement requirement themselves through off-site carbon abatement actions – the ‘do-it-yourself’

option. This could include improving other existing buildings (*e.g.* retrofit installations), renewable heat or energy schemes, or to build to a higher standard than the current Part L requirements on developments with extant planning permission before October 2016 and 'banking' the difference).

(iii) Contracting with a third party Allowable Solutions provider for them to deliver carbon abatement measures sufficient to meet the house builders' obligations. In most cases, we would expect the third party to be a private sector body. However, house builders could also contract with a local authority where it is able to offer a carbon abatement service, but house builders will not be obliged to use the local authority service.

(iv) Making a payment which is directed to a fund which then invests in projects which will deliver carbon abatement on their behalf. The payment would be based on a fixed price which would be subject to periodic review.

2.8 Under option (iii) three potential models for third parties to provide Allowable Solutions projects or measures for house builders have been identified:

a) a direct transaction with a third party (bilateral arrangement);

b) contracting through a simple register/matching service; or

c) contracting through a brokerage service.

Question 5	**Do you agree that house builders should have a variety of routes, as set out in paragraph 2.7 of the consultation document, to meet their zero carbon homes obligations? Yes / No**

Question 6	**Do you agree or disagree with any of the routes ((i) to (iv)) identified in paragraph 2.7 of the consultation document and do you have other routes to suggest. Please provide an explanation for any other suggestions?**

Question 7	**(For house builders) How likely are you to use any of the routes identified in paragraph 2.7 of the consultation document?** ***Please complete the table below and add comments for your reasons.***

Route	**Very likely**	**Occasionally**	**Unlikely**
(i) Doing more onsite			
(ii) Delivering off-site through own actions			
(iii) Contracting with a third party			
(iv) Payment into a fund			

Question 8	**Do you think the current market could scale up to meet additional demand for carbon abatement?** **Yes / No. Please give reasons for your answer.**

2.9 The government recognises the importance of providing an indication of the maximum cost to builders. This is vital to enable house builders to plan for the future, in particular when making long term investments in land. The way this could operate would be for government to set a maximum capped price for Allowable Solutions. This would be expressed as a price cap, which, under option (iii) for example could operate as a maximum price for transactions under the matching or brokerage systems; and under option (iv) as the maximum price of the payment into a fund. Chapter 5 below explores options for this capped price, which it is proposed is set as a price per tonne of carbon (specifically, carbon dioxide).

2.10 The setting of this maximum price would therefore set a target for Allowable Solutions providers to bring forward Allowable Solutions projects at a lower price to win custom; or for house builders to develop their own solutions under options (i) and (ii) at a lower price.

Chapter 3

Other delivery options considered

3.1 The previous chapter set out the design principles for Allowable Solutions, including the principle that house builders should be able to decide how they meet the obligation to mitigate the carbon arising from regulated energy. The government also wishes to develop a framework that gives house builders maximum choice and flexibility in how to meet the obligation.

3.2 When developing these principles the government also considered other options for delivery:

- **Do nothing** – no national policy framework with local authorities allowed to take action as they see fit.
- **Mandated local scheme** - local authorities would be required to offer Allowable Solutions for developments in their areas.

3.3 These options were evaluated against the criteria set out in the government's announcement of May 2011. As set out previously, this stated that options for a mechanism to deliver off-site measures will:

- be made available to all developers operating in England;
- be cost effective by ensuring off-site measures are no higher than the government's long term value of carbon; and
- ensure that any funds raised will be dedicated to carbon abatement

3.4 The options were assessed also against criteria of administrative simplicity and the ability to bring forward Allowable Solutions' projects.

Do Nothing

3.5 A do nothing option does not mean that local authorities would not pursue a type of Allowable Solutions. They could set off-site carbon abatement requirements on house builders to achieve zero carbon standards. This would fit with a strategic role which local authorities can play in promoting local low carbon energy schemes, or in support of the Green Deal and promoting retrofit projects. A local authority role could also promote local

ownership of Allowable Solutions as part of new development. To do this local authorities could set Allowable Solutions type policies in their development plans and, in theory, use existing mechanisms such as Community Infrastructure Levy and section 106 agreements as delivery mechanisms for these policies. We understand some local authorities are putting in place such policies already.

3.6 However, this would have the disadvantage of not delivering the zero carbon policy in full across the country. The setting of local development plan policies are at local discretion, and it is clear that whilst some authorities might look to deliver a zero carbon standard, some might set either a lower standard or no standard. In addition, both section 106 agreements and the Community Infrastructure Levy would present particular challenges as vehicles for the delivery of Allowable Solutions.

3.7 Section 106 agreements could only be used where the Allowable Solutions or the off-site carbon abatement measure was deemed necessary to make the development acceptable in planning terms.

3.8 In relation to Community Infrastructure Levy:

- local authorities can choose whether or not to adopt the Community Infrastructure Levy, although the government expects the vast majority of them to do so
- the funding raised by the Levy reflects viability considerations and it is not charged on all housing (for instance social housing), so a third or more of new housing development could be exempt
- currently all money raised through the Levy is put into a general pot for funding infrastructure with no guarantee that it would be used for particular purposes (such as Allowable Solutions)
- the Levy is set by reference to floor space rather than carbon use, so would not reflect the energy efficiency of housing

3.9 Equally, the absence of a clear lead from government can be expected to encourage local authorities to take forward a diversity of localised standards and approaches. This in turn could be expected to inconsistencies in approach, inefficiencies in delivery and increased costs for house builders.

3.10 A do nothing approach would also mean that local authorities could set a price for its Allowable Solutions that would be not be linked to the government's long term value of carbon and so may not be cost effective.

3.11 This option would also be dependent on cost effective projects being available. This might not necessarily be the case in each locality;

projects which were available might not be capable of delivering cost effective savings since there would be no competitive pressures, and local authorities could not take advantage of economies of scale or lower costs offered beyond their boundaries to the same extent as the private sector.

3.12 In light of the above, the government considers this option fails against the criteria set in paragraph 3.3 and has concluded that there should be a national policy framework for Allowable Solutions, rather than leaving it to local authorities to decide locally.

Question 9	**Do you agree that the government should set out a national policy framework for Allowable Solutions and not leave it to local authorities to decide locally?** **Yes / No. Please give reasons for your answer.**

Mandated Local Approach

3.13 In this approach Allowable Solutions would be funded and supplied entirely at the local level. Local authorities would collect Allowable Solutions payments from development in their area through a local levy and fund Allowable Solutions projects in their locality according to local priorities for carbon abatement. As this would be a national duty placed upon them, local authorities would not have any discretion as to whether to introduce such a scheme.

3.14 To do this local authorities would need to develop appropriate capacity, evidence base and planning for strategic energy and carbon abatement priorities in their areas. Local authorities would also be required to set up bespoke funding and delivery bodies to handle local Allowable Solutions payments.

3.15 The development stage impact assessment published with this consultation includes analysis of the key administration costs for local authorities under this local model. Using the set up and operating costs of the Community Infrastructure Levy as a proxy for the costs of a mandated Allowable Solutions approach suggests that there could be significant administrative costs.

3.16 The criteria would require all local planning authorities to participate to ensure the Allowable Solutions scheme has coverage in all areas and, although it provides a localist approach, this option has high administrative costs for all local authorities. The issues raised in

paragraph 3.10 above would continue to apply, though it is recognised that some local authorities might wish to pool Allowable Solutions' monies better to enable larger scale, strategic investments.

3.17 In addition, the mandatory local scheme is likely to present the most costly option for house builders. There would be no competitive pressures and local authorities could not take advantage of economies of scale or lower costs offered beyond the local authority boundaries to the same extent as the private sector, so local authorities would not have any incentives to charge below the maximum price cap.

3.18 The government therefore does not propose a mandated local approach based delivery option as a preferred route for delivering Allowable Solutions. It would, however, be open to local authorities engaging with house builders through the delivery routes described in paragraphs 2.12 and in Chapter 6 below, particularly in terms of offering potential Allowable Solutions projects which a house builder could voluntarily support to meet their zero carbon homes obligation.

Question 10	**Do you agree that a mandated local approach to the delivery Allowable Solutions has no role in this national policy for the reasons set out in paragraphs 3.13 to 3.18 of the consultation document?** **Yes / No. Please give reasons for your answers.**

Chapter 4

Allowable Solutions measures and verification

Allowable Solutions Measures

4.1 This section of the consultation paper sets out options for determining what carbon abatement measures should be supported by Allowable Solutions. It also discusses approaches to verification to ensure that the measures supported meet the appropriate conditions.

Prescribed list or criteria based approach?

4.2 House builders could have a completely free choice in choosing Allowable Solutions or they could be limited to choosing from a prescribed list. Alternatively a set of criteria could be set out and Allowable Solutions' measures could then be chosen provided they could demonstrate how they meet those criteria.

4.3 Lists of measures or technologies to be supported are provided for such schemes as the Energy Company Obligation and the Renewable Heat Incentive. On the other hand, as noted above, Building Regulations are functional and do not prescribe the measures or technologies to be adopted to meet the obligations set out in the Regulations.

4.4 Considerations are:

- **Flexibility**: providing a prescribed list (particularly one set out in Regulations) reduces the ability for new ideas to be brought forward and could stifle innovation. There could be definitional problems also.
- **Clarity and transparency**. A prescribed list provides housebuilders with certainty and a clear indication of measures which are 'allowed'. There would be little doubt as to whether any particular measure counted or not. This would provide certainty to house builders.
- **Verification**: to be included on a list, an abatement measure would have needed to have demonstrated that it could deliver cost

effective, additional carbon savings. This would form part of an *ex ante* verification process see below (*ex ante* verification is where there is a process in place to consider whether an Allowable Solutions' measure meets criteria and is able to deliver set carbon savings).

4.5 The government's starting point is that maximising flexibility is a significant consideration but would welcome views.

Question 11	**Should Allowable Solutions be concentrated on particular types of measure?** **Yes/No. Please give reasons for your answer**

4.6 Either a prescribed list or criteria could be set to focus on particular types of measures or to exclude particular types of measures. In particular there are three considerations on which the government would welcome views:

- whether Allowable Solutions should only be focused on measures which deliver carbon abatement in the non traded sector of the economy?
- whether Allowable Solutions' measures should be confined to those in the built environment?
- whether Allowable Solutions should be limited spatially?

Non traded v traded sector measures

4.7 For the purposes of carbon abatement policy, the economy is divided into two sectors: the traded sector, those sectors of the economy which are subject to the European Union Emissions Trading Scheme; and those sectors which are not so covered (the non traded sector). In very broad terms, emissions not covered by the Emissions Trading Scheme are those from heat, transport, waste and agriculture sectors.

4.8 A cap is placed on the emissions which can be released by installations in the traded sector, which covers, in particular, power generation. This cap has been reflected in the UK's carbon budgets. Because of this, any carbon savings from actions to reduce electricity demand, or support low or zero carbon energy from Allowable Solutions will help meet the Emissions Trading Scheme cap, but as the UK does not have

to achieve savings beyond that cap, it can be argued that they are not additional to the savings which have to be achieved in the traded sector anyway.

4.9 If that is the case, it might be appropriate to focus Allowable Solutions only on measures in the non traded sector (such as measures to reduce demand for energy for heating – energy efficiency measures – or to support low or zero carbon heating systems). On the other hand, this may work against effective whole building projects coming forward, where solutions may enable carbon savings from reducing heat and electricity demand, which might be more cost effective and deliver higher levels of carbon savings looked at in the round. Conversely, projects focused only on saving non-traded heat, may result in solutions which require higher traded electricity usage, for instance to power cooling or mechanical ventilation, which would be ignored in the calculation if only non-traded carbon is measured.

4.10 Furthermore, analysis for the Electricity Demand Reduction[14], Energy Efficiency[15] and Low Carbon Heat[16] strategies suggest that there are abatement opportunities available which would reduce demand in both traded and the non traded sectors. However, such opportunities are not being taken up. Allowable Solutions could be designed to remove barriers to exploit these opportunities. At this point, the government is not minded to limit Allowable Solutions' measures only to the non traded sector, but would welcome views.

Question 12	**Do you think that Allowable Solutions should be confined to only to measures in the non traded sector of the economy?** **Yes/No. Please give reasons for your answer**

Question 13	**Should measures in the traded sector be supported by Allowable Solutions, provided that they meet the appropriate criteria?** **Yes/No. Please give reasons for your answer**

[14] https://www.gov.uk/government/consultations/options-to-encourage-permanent-reductions-in-electricity-use-electricity-demand-reduction
[15] https://www.gov.uk/government/publications/energy-efficiency-opportunities-in-the-uk
[16] https://www.gov.uk/government/publications/the-future-of-heating-a-strategic-framework-for-low-carbon-heat

Built Environment

4.11 The zero carbon policy is about reducing carbon emissions in the built environment. The government expects to bring forward the requirements for Allowable Solutions in future changes to the Building Regulations which means that measures will need to fall within the vires currently set out in primary legislation or primary legislation will need to be amended.

4.12 There is a related question concerning whether Allowable Solutions' measures in the built environment should relate only to residential buildings or could also support carbon abatement in non domestic buildings.

4.13 As this is a policy to reduce emissions from the built environment a focus on built environment measures is logical. However, this may reduce the opportunity for other cost effective savings to be supported. Also, limiting Allowable Solutions just to measures relating to residential buildings would have two further implications:

- analysis suggests that there is much cost effective abatement in the non domestic sector which policy is not bringing forward, and which Allowable Solutions could unlock.
- some potential Allowable Solutions' measures *e.g.* district heating schemes would be expected to be available to both domestic and non domestic buildings. It would be very difficult to try and define Allowable Solutions support for only that part of a district heating scheme supporting domestic buildings.

4.14 The government is open minded on the general question as to whether Allowable Solutions should just be confined to measures in the built environment and would welcome views. The government however does consider that measures should not just be confined to measures in domestic buildings.

Question 14	**Do you think that Allowable Solutions should be confined to measures in the built environment?** **Yes/No. Please give reasons for your answer**

Question 15	**Do you think that measures should just be confined to residential buildings or should also cover non domestic buildings?** **Yes/No. Please give reasons for your answer**

Spatial Criteria

4.15 It would be possible to limit measures spatially *e.g.* to the locality of the housing development in order to enable a close demonstration of the links between the development and the Allowable Solutions project. This might be attractive in terms of promoting Allowable Solutions locally and securing buy in. It would also make it more apparent to home buyers that action had been taken to ensure that carbon emissions had been abated. However, it may mean that less cost effective projects were supported given limited availability and may miss opportunities for cost effective strategic investments.

4.16 At the very least the government considers that projects supported should be located in the United Kingdom. The government does not propose therefore that Allowable Solutions should be used to support projects outside the United Kingdom.

Question 16	**Do you think that there should be any spatial limitations on Allowable Solutions?** **Yes/No. Please give reasons for your answer** **If yes, do you think that Allowable Solutions should be limited to projects located in:** **(a) the locality of the development;** **(b) England;** **(c) United Kingdom;** **Please give reasons for your answer.**

Criteria for Allowable Solutions

4.17 In considering whether to take a criteria based approach, a set of draft criteria have been drawn up for Allowable Solutions' measures. These

flow from the design principles set out in Chapter 2, particularly around additionality and cost effectiveness. Suggested criteria are:

- **complementarity**. Projects or measures counted as Allowable Solutions would complement but not displace projects supported separately by other government programmes. This is to avoid double subsidy;
- **market additionality**. Projects or measures would be those which would not otherwise have been brought forward by the market because of delivery barriers. This recognises that there is a deadweight risk;
- **cost effectiveness.** This would be achieved by setting a ceiling price *i.e.* a house builder would not need to pay above this price. Competition would operate to deliver Allowable Solutions projects and measures below this price;
- **carbon impacts**. Allowable Solutions measures would need to be capable of delivering verifiable carbon savings at a cost effective price; and
- **spatial criteria.** Allowable Solution projects should be demonstrably of benefit to the citizens of the United Kingdom, and Allowable Solutions projects should take place in the United Kingdom.

Question 17	**Do you consider that the five criteria set out in paragraph 4.17 of the consultation document are appropriate to determine Allowable Solutions' measures?** **Yes/No. Please give reasons for your answer**

Question 18	**Are there other criteria you consider should be used?** **Yes/No. Please give reasons for your answer**

Allowable Solutions measures

4.18 A number of measures have been suggested to the government as possible Allowable Solutions' measures. These measures are listed below by way of an illustration of possible measures:

- creation or expansion of sustainable energy infrastructure (*e.g.* district heating schemes, district heating pipework to connect to

existing schemes / support new schemes, community Combined Heat and Power plant).

- retro-fitting of low carbon technologies in existing buildings, such as hard-to-treat solid wall insulation in existing housing, retro-fitting of existing communal buildings and non-domestic buildings.
- investment in low carbon electricity generation assets.
- investment in energy efficient infrastructure, such as low carbon street lighting.
- energy storage solutions and demand-side management.
- energy-from-waste plants, such as anaerobic digestion.
- low carbon cooling.

4.19 This is an indicative list only. The government would expect different consultees to suggest the inclusion or exclusion of individual measures on this list. This, in the government's view, is a reason that an approach based on criteria might be a more sensible way forward than seeking to draw up a definitive list. In addition, such an approach provides flexibility and adaptability to changing technologies.

Supply of Allowable Solutions' measures

4.20 As well as considering the principles for determining Allowable Solutions, consideration needs to be given to the supply of potential Allowable Solutions' measures. It would not be sensible to confine Allowable Solutions in any way and then find that insufficient measures are forthcoming.

4.21 The development stage impact assessment supporting this consultation includes analysis of the potential supply of possible Allowable Solutions' measures. The government is keen to understand that potential supply of Allowable Solutions' measures to ensure sensible decisions about the design of Allowable Solutions. Therefore we would welcome views and evidence about the likely supply of Allowable Solutions' measures.

Question 19	**Do you have evidence that you are willing to share with DCLG about the likely supply of Allowable Solutions' measures?**

Verification

4.22 A robust system of verification is essential to ensure that Allowable Solutions measures meet any criteria set for them. Assurance that Allowable Solutions' measures are indeed delivering the expected carbon savings is essential to the approach. At the same time, the verification system has to be proportionate to avoid unnecessary bureaucracy and high transaction costs.

4.23 The government envisages a mix of *ex ante* and *ex post* verification arrangements. *Ex ante* arrangements apply where measures are determined in advance to meet criteria and to deliver set carbon savings. The Energy Company Obligation is an example of this. Energy suppliers have to demonstrate that they have met their obligation by supporting what are called qualifying actions, for which carbon savings have to be calculated[17]. The relevant carbon savings are calculated using a version of the National Calculation Methodology. Measures supported by the Renewable Heat Incentive[18] are another example.

4.24 The government believes that this principle is capable of being applied to a number of Allowable Solutions' measures. Measures would have a set carbon saving assigned to them which would be based on analysis of expected performance of the measure in normal circumstances (in the way that carbon savings are ascribed to measures in the National Calculation Methodology).

4.25 The government acknowledges that measures which have deemed savings associated with them would in effect have been recognised as suitable Allowable Solutions. The government also recognises that it will be important for there to be a robust process for reviewing and keeping up to date measures which have deemed savings.

4.26 Associated with this, could be a requirement for systems to be installed in line with quality standards and/or installers to meet competence requirements, as with the requirements for the Green Deal or the Microgeneration Certification Scheme.

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17 http://www.ofgem.gov.uk/Sustainability/Environment/ECO/guidance/Documents1/Energy%20Companies%20Obligation%20(ECO)%20Guidance%20for%20Suppliers%20-%2015%20March.pdf

18 Further information about the Renewable Heat Incentive can be found at: https://www.gov.uk/government/policies/increasing-the-use-of-low-carbon-technologies/supporting-pages/renewable-heat-incentive-rhi

Question 20	**Do you agree that the verification system for Allowable Solutions should include arrangements for deeming savings as a form of ex ante verification?** **Yes/No. Please give reasons for your answer**

Question 21	**Do you have views on how such a system might best operate?**

4.27 However, not all Allowable Solutions' measures are likely to be suitable for *ex ante* verification. Measures which are generating renewable energy or renewable heat, for example, where assumptions need to be made about levels of demand.

4.28 *Ex post* verification would involve measuring the delivery of savings. This would be most appropriate for district heating schemes where estimates of carbon savings only could not be provided *ex ante* and therefore *ex post* monitoring would be needed.

4.29 A balance would need to be drawn with a monitoring regime to ensure that assurance is provided but to avoid the costs of verification becoming too expensive. Some form of reporting might be needed backed up with some form of audit. To provide assurance, the government considers that Allowable Solutions' providers would need at the very least to report on delivery of Allowable Solutions.

4.30 Developing an appropriate verification regime will be a critical part of the successful delivery of Allowable Solutions, and the government would particularly welcome views on how best to develop arrangements.

Question 22	**Do you agree that the verification system for Allowable Solutions should include arrangements for ex post verification?** **Yes/No. Please give reasons for your answer**

Question 23	**Do you have views on how such a system might best operate to provide the best balance of assurance while avoiding overly burdensome reporting and monitoring processes?**

4.31 This also raises the question as to what would happen if the expected carbon savings were not in fact delivered. In line with the principles discussed in Chapter 2, the government does not believe that it would be right for a house builder to be responsible for dealing with any short fall: they would have had no control over what had happened. Therefore responsibility for ensuring delivery, and any actions in the case of non delivery, should fall on the Allowable Solutions provider.

4.32 If Allowable Solutions' measures were supported by a fund, a claw back arrangement could be out in place so that funds could be passed back by under-delivering projects which could then be used to support other measures. Under the other routes, there would need to be some sanction for under delivery which again could include some form of financial penalty.

Question 24	**Should there be sanctions for non delivery of the expected carbon savings for Allowable Solutions' measures?** **Yes/No. If Yes, how should those sanctions operate?**

Chapter 5

Price cap

5.1 The government recognises that the pricing of Allowable Solutions is a key consideration for house builders. An understanding of the maximum cost is vital to enable house builders to plan for the future, in particular when making long term investments in land.

5.2 Allowable Solutions could be priced in a number of ways:

- the market could be allowed to set its own price; or
- government could fix a single price; or
- government could set ceiling and/or floor prices.

5.3 The government wishes to encourage competition and provide incentives for the market to deliver cost effective Allowable Solutions. It recognises that a market based approach which is allowed to set its own price might deliver this, but that a single fixed price would remove any incentive for innovation or efficiency. However, the government recognises the need for certainty and a price cap assists house builders in identifying their maximum liability while also providing an opportunity for the market to bring forward Allowable Solutions at lower prices. In the government's view, a price cap is the best way forward.

5.4 The price cap could operate as a maximum price for transaction under the matching or brokerage systems (see Chapter 6 below); and the maximum price of the payment into a fund. This maximum price would therefore set a target for Allowable Solutions providers or fund managers to bring forward Allowable Solutions projects at a lower price to win custom; or for house builders to develop their own solutions at a lower cost.

5.5 Although the government believes that a ceiling price is needed, it does not think that there is need for a floor price. Provided Allowable Solutions bring forward additional carbon savings, the government does not see why there should be a limit on the lower price that can be charged for them.

Question 25	**Please provide your view on whether the government should:** **(a) allow the market to set its own price? Or** **(b) set a single fixed price? Or** **(c) set a ceiling price but enabling Allowable Solutions to be brought forward at lower prices? Or** **(d) set a floor price for Allowable Solutions?**

Ceiling / Price Cap

5.6 It is important that government strikes the right balance in setting any ceiling / price cap. If it is set too low then there is a risk that Allowable Solutions measures may not be available at or below the capped price on the scale required. In addition there is a risk that the house building industry will not seek to drive forward innovation beyond achieving the on-site regulatory energy efficiency requirement.

5.7 Alternatively, if the capped price is set too high then it could have a serious impact on the house building market as it will feed through into land values and could adversely affect the economics of house building, reducing the number of houses that are built.

5.8 It is therefore important to set a capped price that maintains incentives for innovation whilst maintaining confidence in the house building market. The development stage impact assessment published with this consultation includes detailed analysis for three price cap options – a central price cap (the preferred option), a low price cap and a high price cap.

5.9 The government thinks, as Allowable Solutions are designed to save carbon, the best metric for the price cap is to express this in terms of expenditure per tonne of carbon dioxide (£/tCO_2) abated. The other key variable is the length of time over which the carbon has to be abated. The following analysis has been based on an assumption that Allowable Solutions will cover 30 years of residual emissions. This is because a 30 year period is broadly representative of (i) the lifetime of onsite technologies and (ii) the period beyond which the electricity grid will be substantially decarbonised. Nevertheless the government would welcome views as to whether this is an appropriate time period.

Central Price Cap Option - £60/tCO2

5.10 As detailed in the development stage impact assessment that accompanies this consultation, this price cap is set in line with the non-traded carbon price series used in government policy appraisal. As the majority of Allowable Solutions are expected to be provided in the non-traded sector the non-traded carbon price series might provide the most appropriate reference point for the cost of potential Allowable Solutions. The non-traded carbon price series is the best estimate of the future price of non-traded carbon that is consistent with the level of marginal abatement costs required to reach the carbon targets that the UK has adopted.

5.11 The impact assessment shows that using the non-traded carbon price appraisal values (2012 prices) for a home built in 2017, which is required to abate 30 years of carbon, a simple average for the carbon price in the period 2017-46 would give approximately £60/tCO_2 when discounted by 3.5% over 30 years.

Low Price Cap Option - £36/tCO2

5.12 This price cap has been derived using the carbon price floor. The aim of the price floor is to provide greater support and certainty in the carbon price to incentivise investment in low-carbon electricity generation. The carbon floor price has been set at a level to encourage investment without undermining the competitiveness of UK industry. As noted above, some Allowable Solutions may support low carbon electricity generation schemes in which case a price linked to the carbon floor price might be appropriate.

5.13 The price cap of approximately £36/tCO_2 has been calculated from the carbon price floor converted to 2012 prices and discounted by 3.5% to cover 30 years abatement from 2017.

High Price Cap Option - £90/tCO2

5.14 This price cap has been derived using the marginal onsite abatement cost. Assuming that the most cost effective marginal onsite technology is solar photovoltaics this would set a cap of approximately £90/tCO_2 in 2012 prices, assuming that developers do not receive any of the benefits from bill savings which solar photovoltaics allows or receive Feed in Tariffs[19]. The argument for using a price based on this

[19] Further information on the Feed in Tariffs scheme can be found at: https://www.gov.uk/government/policies/increasing-the-use-of-low-carbon-technologies/supporting-pages/feed-in-tariffs-scheme

approach is to provide a strong incentive for industry to bring forward technological solutions which can bring forward cheaper on site abatement measures. This could have beneficial impacts on innovation and reduce costs over time. However, this could also have negative impacts on housing supply in the interim period.

Maximum costs of different price caps on dwellings

5.15 The Zero Carbon Hub Carbon Compliance report in 2011 set out the most technically feasible and cost effective thresholds for carbon compliance for 4 main dwelling types (see table 1 on page 11) . Using these figures it is estimated that for the average dwelling 0.9 tCO_2 per annum would need to be abated by Allowable Solutions (ranging from 0.75 tCO_2 per annum for a flat to 1.2 tCO_2 per annum for a detached property).

5.16 Using the values for carbon compliance set out in paragraph 1.8 above, the table below shows the maximum Allowable Solutions costs per dwelling (in 2012 prices), assuming 30 years of CO_2 emissions is required to be abated. *Note: the costs shown in the table are for Allowable Solutions only and do not include the costs of achieving the 2016 levels for Fabric Energy Efficiency and Carbon Compliance.*

Table 2: Maximum Allowable Solution costs per dwelling type

	Detached	End terrace / semi	Mid terrace	Flat
Residual Emissions	35.4	25.2	25.2	22.9
Low: £36/tCO_2	£1,274	£907	£907	£825
Central: £60/tCO_2	£2,123	£1,511	£1,511	£1,376
High: £90/tCO_2	£3,184	£2,267	£2,267	£2,064

5.17 The government invites views on the three pricing options set out above. As noted, because Allowable Solutions will mainly be focussed on reducing emissions in the non traded sector, this might argue more strongly for a price linked to the non traded value of carbon. The central price scenario therefore has been used as the preferred pricing option in the accompanying development stage impact assessment.

5.18 Whichever price is finally adopted after this consultation, it is anticipated that the price will be reviewed and potentially reset every 3 year, for example linked into Building Regulation reviews.

Question 26	**Which price cap - low, central or high - do you think should be adopted and why?**

Question 27	**What impact do you think the different price caps will have on the extent to which Allowable Solutions projects will be brought forward?**

Question 28	**What impact do you consider the different price caps will have on the viability of house building and would the impact differ in different parts of England?**

Question 29	**Is 3 years an appropriate interval to review the price cap?** **Yes / No. If no, how often do you think it should be reviewed?**

Question 30	**Should Allowable Solutions cover 30 years of residual emissions?** **Yes / No. If no, how many years would be appropriate and why?**

Question 31	**Do you think the calculation of the carbon abatement required should take account of the expected and actual decarbonisation of the electricity grid?** **Yes / No. Please give reasons for your answer**

Chapter 6

Allowable Solutions delivery routes

6.1 This section describes in more detail the preferred delivery options for Allowable Solutions. At this stage, the government is seeking views on design principles. Following this consultation, the government envisages developing a detailed design model for Allowable Solutions which will be the subject of further consultation.

6.2 By way of illustration we have identified and referenced some schemes containing analogies with aspects of the way Allowable Solutions might be administered. **Where references are made to existing schemes and existing bodies, it should not be assumed that this indicates any preference by government for those bodies to be involved in the administration of Allowable Solutions.** That will depend on future decisions in light of consultation responses. The consultation also seeks views on the assumptions we should be making about the types of administrative costs involved in delivering Allowable Solutions and evidence on what they might be.

House Builder 'menu'

6.3 The government proposes that builders will have a choice of four routes to deliver the remaining carbon abatement above the onsite minimum likely to be required by the Building Regulations from 2016:

(i) Undertaking the full 100% of carbon abatement on site.

(ii) Meeting the remaining carbon abatement requirement themselves through off-site carbon abatement actions – the 'do-it-yourself' option. This could include improving other existing buildings (*e.g.* retrofit installations), renewable heat or energy schemes, or to build to a higher standard than the current Part L Building Regulations' requirements on developments with extant planning permission before October 2016 and 'banking' the difference.

(iii) Contracting with a third party Allowable Solutions private sector provider or work with the local authority for them to deliver carbon

abatement measures sufficient to meet the house builders' obligations.

(iv) Making a payment which is directed to a fund which then invests in projects which will deliver carbon abatement on their behalf.

6.4 Building control bodies would receive certification from these routes as part of their sign off process.

6.5 Route (i) follows the normal Building Regulations compliance process as the measures being taken can be accommodated within the National Calculation Methodology. Compliance checking will be undertaken by building control as is now the case under current Building Regulations' requirements.

House builder 'Do it yourself' approach

6.6 The government considers it possible that for some Allowable Solutions' measures undertaken through route (ii) that compliance could also be undertaken through the standard building control process; but only where the Allowable Solutions' measure can be accommodated within the National Calculation Methodology and therefore can be checked by building control. However, it is likely that the majority of Allowable Solutions' measures undertaken through route (ii) would need to follow a verification process as outlined in Chapter 4.

Question 32	**Do you agree that route (i) of the house builder 'menu' can be accommodated within current Building Regulations compliance processes?** **Yes / No. Please give reasons for your answer**

Question 33	**What kinds of Allowable Solutions measures undertaken under route (ii) of the house builder menu do you consider could be accommodated within current Building Regulations compliance processes?**

Contract with Third party

6.7 The government envisages arrangements whereby house builders might contract with a third party to deliver Allowable Solutions. The government has identified three possibilities:

- a direct transaction with a third party (bilateral arrangement);
- contracting through a matching service; or
- contracting through a brokerage service.

Direct Transaction Approach

6.8 Under the first of these, house builders and Allowable Solutions' providers can negotiate bilaterally and agree a contract for the delivery of the project / measures and release of the carbon savings so obtained to the house builder. It could also take the form of a one off transaction; or could be developed into a longer term engagement; or could involve a formal partnership *e.g.* in the form of the house builder and Allowable Solutions provider setting up a separate entity such as an energy savings company. This arrangement would be subject to the verification scheme proposed above to ensure that measures put in place delivered the appropriate levels of carbon savings.

6.9 Although it might be anticipated that Allowable Solutions' providers will mainly come from the private sector, this does not rule out local authorities, either individually or in multi local authority partnerships, or in partnership with the private sector, coming forward with Allowable Solutions' projects or measures. So under this approach a house builder could contract with a local authority where it is able to offer a carbon abatement service, but house builders will not be obliged to use the local authority service.

Question 34	**Do you think that house builders should be able to enter into a direct transaction with third parties, including local authorities, to deliver Allowable Solutions?** **Yes / No. Please give reasons for your answer**

Question 35	**How might that approach operate?**

Question 36	**Do you have any evidence of how such a system might work which could be drawn upon in developing such an arrangement?**

Matching / Brokerage

6.10 The government is keen to explore the possibilities of establishing a matching and/or brokerage system to enable house builders to quickly and simply find potential Allowable Solutions' projects which would enable them to meet their obligations. The consultation invites views on the private sector's interest in setting up a matching or brokerage service for Allowable Solutions. This would involve Allowable Solutions' providers placing their project on a register for house builders to access. Again here there could be the option for a local authority to place one of their projects on the register. This would minimise search costs. Transaction costs would be a matter for negotiation between the provider of the matching service, house builders and Allowable Solutions' providers. We might assume that there would be a fee for joining the register and then a transaction fee each time the register is used.

6.11 One possible analogy is the industry Robust Details Limited scheme under which house builders can use approved products as a way of demonstrating compliance with regulatory requirements to minimise the passage of sound. If this approach was followed, an Allowable Solutions provider would pay a fee to have their project registered as an Allowable Solutions' measure (*i.e.* verified as meeting appropriate conditions) while a house builder could pay a fee to access the register of projects. Standard terms and conditions could be provided to simplify transactions.

6.12 Again, measures brought forward through such a matching service would need to be subject to the verification arrangements proposed above.

Question 37	**Do you agree that provision of a matching service should be considered?** **Yes / No. Please give reasons for your answer**

Question 38	**Do you have views on how such a system might work to assist house builders?**

Question 39	**Do you have any evidence of existing matching services which could be drawn on in developing such an arrangement?**

6.13 Another option is to develop a brokerage system. The Energy Company Obligation (ECO) brokerage system has been set up to bring together energy suppliers who have to meet carbon reduction obligations and potential suppliers of ECO qualifying actions. Suppliers of qualifying actions put forward lots of qualifying actions and energy suppliers bid against these. The highest bidder secures the lot. Such a model could be used for Allowable Solutions on the basis that house builders could offer to buy into projects or support measures which deliver sufficient carbon abatement to meet the house builder's obligations. Allowable Solutions' providers would offer prices for their projects. In this case the lowest bids which would win the lot. The Allowable Solutions capped price (see Chapter 5 above) would, in effect, act as a maximum price.

6.14 The brokerage platform service is run for government by an outside supplier. Ofgem, as the regulator for the Energy Company Obligation, sets out the rules under which the ECO brokerage system works. We would envisage a similar approach for any Allowable Solutions' brokerage *ie* that government would set a framework under which the system would run. The verification arrangements set out above would apply.

Question 40	**Do you agree that provision of a brokerage service should be considered?** **Yes / No. Please give reasons for your answer**

Question 41	**Do you have views on how such a system might work to assist house builders?**

Question 42	**Do you have any evidence of existing brokerage services which could be drawn on in developing such an arrangement?**

Fund Option

6.15 Under this model, a national "funder of funds" would be established. This is the model which the Green Investment Bank has adopted for investments of less than £30m (it is very unlikely that any individual Allowable Solutions project will come at all close to this threshold). In particular, the Green Investment Bank has recently committed £100m to

two specialist fund managers to be invested for commercial returns in non domestic energy efficiency projects[20].

6.16 Were the proceeds from a fund to be invested in a similar way, there is the potential to secure significant extra carbon savings through the mobilisation of additional private sector funds for co-investment; the price could potentially be adjusted to take this into account. Furthermore, if invested for commercial return, Allowable Solutions payment capital and profits could both be reinvested on a revolving fund basis to increase long-term potential carbon savings.

6.17 It would be for the fund to determine how to invite bids for support from the funds. But it is envisaged that projects would need to meet the criteria set out in paragraph 4.17 above.

6.18 Under this model a system for collection monies would need to be established. The government envisages that this would need to operate at a national level. The government will explore in more detail how a collection route for a fund might operate in the light of responses to this consultation.

Question 43	**Do you agree that provision of a fund approach should be considered?** **Yes / No. Please give reasons for your answer**

Question 44	**Do you have views on how such a system might work to assist house builders?**

Question 45	**Do you have any evidence of existing funds which could be drawn on in developing such an arrangement?**

[20] http://news.bis.gov.uk/Press-Releases/Government-appoints-fund-managers-for-non-domestic-energy-efficiency-projects-67e4a.aspx

Question 46	**If invested in a fund, Allowable Solutions payment capital and profits can both be reinvested on a revolving fund basis to increase long-term potential carbon savings. However, commercial returns and/or capital could be given back to house builders rather than reinvested, but this would mean less carbon being abated and hence a higher upfront investment would be required to meet the house builder's zero carbon homes obligation. Is there any interest from house builders in investing into a fund which abates carbon and also makes a return rather than making a smaller one-off payment?**

Summary and Comparison of Options

6.19 This section summarises the delivery routes for house builders described above and compares then against a set of qualitative criteria to aid consideration.

Table 3: Assessment of Options

	House Builder DIY	**Bilateral**	**Matching / brokerage**	**Fund**
Comprehensive Coverage	Yes	Yes	Yes	Yes
Administrative cost efficiency	Reduced search and transaction costs as undertaken 'in house'	Search and transaction costs for house builders	Transaction costs for matching and brokerage system would need to be covered	Collection and disbursement costs would need to be covered
Simplicity for house builders	House builder has control of measures	House builder needing to invest in search and contracting with Allowable Solutions'	House builder relies on matching service which does the work in identifying potential	House builder makes payment and has no further involvement

		providers	suitable measures or projects.	
Incentivising cost effective Allowable Solutions	Incentive for house builder to bring forward their own cost effective measures	Market based approach so incentive for Allowable Solutions' providers to bring forward lower cost projects	Market based approach so incentive for Allowable Solutions' providers to bring forward lower cost projects	Fund would compete for capital with other Allowable Solutions, so incentive to reduce cost of carbon savings over time
Ability to bring forward projects	Assumes house builder brings forward their own measures	Dependent on market bringing forward projects	Dependent on market bringing forward projects. Potential opportunity to leverage extra funds.	Opportunity to invest in large scale projects of national importance, in particular by leveraging extra funds

Question 47	**What are your views on the assessment of the delivery options set out in the table below paragraph 6.19 of the consultation document?**

Question 48	**Are there other considerations which government should be taking into account?**

Question 49	**In the light of this analysis what is your preferred delivery route? Please provide reasons for your answer.**

Chapter 7

Next steps

7.1 Depending on the outcome of this consultation, the government would expect, at the next stage, to develop a detailed design model for Allowable Solutions. This would be subject to further consultation.

7.2 In due course, the government would expect to put in place any regulations needed to implement Allowable Solutions. The regulatory timetable will be subject to the outcome of this consultation, the current legislative powers and framework available and the legislative changes required to implement the outcome of the consultation.

Implementation

7.3 When the government introduces changes to Building Regulations a period of around 6 months is usually provided from the date when regulations are published and the coming into force date to allow industry to adjust to the new requirements. Transitional provisions also apply in respect of developments which are starting at around the time new regulations come into force.

7.4 The government recognises that Allowable Solutions are a completely new concept for the house building industry. An infrastructure of Allowable Solutions' providers needs to develop; the elements of the delivery model, particularly the verification arrangements, and also any matching or brokerage arrangements, need to be developed and tested. Work is needed on the National Calculation Methodology.

7.5 Given this, the government recognises that it may need to introduce a longer familiarisation and/or transition period than might be the case for any other change to Building Regulations.

7.6 The government will reflect on the appropriate timescale for familiarisation and transition in the light of responses to this consultation, but would welcome views on what might be an appropriate time frame.

7.7 In considering time frames, the government is conscious also of the timetable for the coming into force of the provisions of the recast of the

Energy Performance of Buildings Directive, referred to in paragraph 1.12 above.

Question 50	**What do you think an appropriate familiarisation period might be for industry and appropriate transition arrangements for Allowable Solutions? Please provide reasons for your answer.**

Question 51	**A development stage impact assessment accompanies this consultation document. Do you have any views on the analysis, costs and benefits presented in that impact assessment? Can you provide any additional evidence to inform the further development of the impact assessment?**

Annex A

Consultation - Response Form

How to respond:

Please respond by email to: Building.Regulations@communities.gsi.gov.uk.
The closing date for responses is 5pm on 15/10/2013.

Please note: a Word version of this response form is available on the consultation website.

About you:

Name:	
Position:	
Name of organisation (if applicable):	
Address:	
Email address:	
Telephone number:	

(i) Are the views expressed on this consultation an official response from the organisation you represent or your own personal views?

Organisational response ☐
Personal views ☐

(ii) Are the views expressed on this consultation in connection with your membership or support of any group? If yes please state name of group:

Yes ☐
No ☐

Name of group:

(iii) Please tick the *one* box which best describes you or your organisation:

Builders / Developers:		**Property Management:**	
Builder – Main contractor	☐	Housing association (registered social landlord)	☐
Builder – Small builder (extensions/repairs/maintenance, etc)	☐	Residential landlord, private sector	☐
Installer / specialist sub-contractor	☐	Commercial	☐
Commercial developer	☐	Public sector	☐
House builder	☐	**Building Control Bodies:**	
Building Occupier:		Local authority – building control	☐
Homeowner	☐	Approved Inspector	☐
Tenant (residential)	☐	**Specific Interest:**	
Commercial building	☐	Competent Person Scheme operator	☐
Designers / Engineers / Surveyors:		National representative or trade body	☐
Architect	☐	Professional body or institution	☐
Civil / Structural Engineer	☐	Research / academic organisation	☐
Building Services Engineer	☐	**Energy Sector**	☐
Surveyor	☐	**Fire and Rescue Authority**	☐
Manufacturer / Supply Chain	☐	**Other** (please specify)	☐

(iv) Please tick the *one* box which best describes the size of your or your organisation's business?

Micro – typically 0 to 9 full-time or equivalent employees (incl. sole traders)

☐

Small – typically 10 to 49 full-time or equivalent employees

☐

Medium – typically 50 to 249 full-time or equivalent employees

☐

Large – typically 250+ full-time or equivalent employees

☐

None of the above (please specify)

☐

(v) Would you be happy for us to contact you again in relation to this consultation?

Yes ☐

No ☐

DCLG will process any personal information that you provide us with in accordance with the data protection principles in the Data Protection Act 1998. In particular, we shall protect all responses containing personal information by means of all appropriate technical security measures and ensure that they are only accessible to those with an operational need to see them. You should, however, be aware that as a public body, the Department is subject to the requirements of the Freedom of Information Act 2000, and may receive requests for all responses to this consultation. If such requests are received we shall take all steps to anonymise responses that we disclose, by stripping them of the specifically personal data - name and e-mail address - you supply in responding to this consultation. If, however, you consider that any of the responses that you provide to this survey would be likely to identify you irrespective of the removal of your overt personal data, then we should be grateful if you would indicate that, and the likely reasons, in your response, for example in the comments box.

Questions:

Please note: We very much welcome your views to help inform our decision on the way forward on standards. However, you are not obliged to answer every question. You can focus only on the sections that are most relevant to you.

Chapter 1: Fabric energy efficiency and carbon compliance

Question 1	Do you agree that the government should base its consideration for energy performance standards for 2016 on the fabric energy efficiency and carbon compliance standard recommended by the Zero Carbon Hub and endorsed by the government in May 2011?
Yes ☐	
No ☐	
Please give reasons for your answer:	

Question 2	Do you have evidence, including data on costs, which you can make available to DCLG and could be used in reviewing the assumptions underpinning the Fabric Energy Efficiency and Carbon Compliance standards?
Comments:	

Chapter 2: Design principles for Allowable Solutions

Question 3	Do you agree with these design principles for Allowable Solutions set out in paragraph 2.4 (a to e) of the consultation document?
Yes ☐	
No ☐	
If no, with which do you disagree (a, b, c, d and/or e) and why?	

Question 4	Are there other design principles which you think that the government should consider? Please provide an explanation for any other design principles suggested
Comments:	

Question 5	Do you agree that house builders should have a variety of routes, as set out in paragraph 2.7 of the consultation document, to meet their zero carbon homes obligations?
Yes ☐	
No ☐	
Comments:	

Question 6	Do you agree or disagree with any of the routes ((i) to (iv)) identified in paragraph 2.7 of the consultation document and do you have other routes to suggest.
Agree ☐	
Disagree ☐	
Please provide an explanation for any other suggestions?	

Question 7	**(For house builders)** How likely are you to use any of the routes identified in paragraph 2.7 of the consultation document? Please complete the table below

Route	**Very likely**	**Occasionally**	**Unlikely**
(i) Doing more onsite	☐	☐	☐
(ii) Delivering off-site through own actions	☐	☐	☐
(iii) Contracting with a third party	☐	☐	☐
(iv) Payment into a fund	☐	☐	☐
Please add any comments about your reasons.			

Question 8	Do you think the current market could scale up to meet additional demand for carbon abatement?
Yes ☐	
No ☐	
Comments:	

Chapter 3: Other delivery options considered

Question 9	Do you agree that the government should set out a national policy framework for Allowable Solutions and not leave it to local authorities to decide locally?
Yes ☐	
No ☐	
Please give reasons for your answer.	

Question 10	Do you agree that a mandated local approach to the delivery Allowable Solutions has no role in this national policy for the reasons set out in paragraphs 3.13 to 3.18 of the consultation document?
Yes ☐	
No ☐	
Please give reasons for your answer.	

Chapter 4: Allowable Solutions measures and verification

Question 11	Should Allowable Solutions be concentrated on particular types of measure?
Yes ☐	
No ☐	
Please give reasons for your answer	

Question 12	Do you think that Allowable Solutions should be confined to only to measures in the non traded sector of the economy?
Yes ☐	
No ☐	
Please give reasons for your answer	

Question 13	Should measures in the traded sector be supported by Allowable Solutions, provided that they meet the appropriate criteria?
Yes ☐	
No ☐	
Please give reasons for your answer	

Question 14	Do you think that Allowable Solutions should be confined to measures in the built environment?
Yes ☐	
No ☐	
Please give reasons for your answer	

Question 15	Do you think that measures should just be confined to residential buildings or should also cover non domestic buildings?
Yes ☐	
No ☐	
Please give reasons for your answer	

Question 16	Do you think that there should be any spatial limitations on Allowable Solutions?
Yes ☐	
No ☐	
Please give reasons for your answer	
If yes, do you think that Allowable Solutions should be limited to projects located in:	
(a) the locality of the development ☐	
(b) England ☐	
(c) United Kingdom ☐	
Please give reasons for your answer.	

Question 17	Do you consider that the five criteria set out in paragraph 4.17 of the consultation document are appropriate to determine Allowable Solutions' measures?
Yes ☐	
No ☐	
Please give reasons for your answer	

Question 18	Are there other criteria you consider should be used?
Yes ☐	
No ☐	
Please give reasons for your answer	

Question 19	Do you have evidence that you are willing to share with DCLG about the likely supply of Allowable Solutions' measures?
Comments:	

Question 20	Do you agree that the verification system for Allowable Solutions should include arrangements for deeming savings as a form of ex ante verification?
Yes ☐	
No ☐	
Please give reasons for your answer	

Question 21	Do you have views on how such a system might best operate
Comments:	

Question 22	Do you agree that the verification system for Allowable Solutions should include arrangements for ex post verification?
Yes ☐	
No ☐	
Please give reasons for your answer	

Question 23	Do you have views on how such a system might best operate to provide the best balance of assurance while avoiding overly burdensome reporting and monitoring processes?
Comments:	

Question 24	Should there be sanctions for non delivery of the expected carbon savings for Allowable Solutions' measures?
Yes ☐	
No ☐	
If Yes, how should those sanctions operate?	

Chapter 5: Price cap

Question 25	Please provide your view on whether the government should: (a) allow the market to set its own price? Or (b) set a single fixed price? Or (c) set a ceiling price but enabling Allowable Solutions to be brought forward at lower prices? Or (d) set a floor price for Allowable Solutions?
Comments:	

Question 26	Which price cap - low, central or high - do you think should be adopted and why?
Comments:	

Question 27	What impact do you think the different price caps will have on the extent to which Allowable Solutions projects will be brought forward?
Comments:	

Question 28	What impact do you consider the different price caps will have on the viability of house building and would the impact differ in different parts of England?
Comments:	

Question 29	Is 3 years an appropriate interval to review the price cap?
Yes ☐	
No ☐	
If no, how often do you think it should be reviewed?	

Question 30	Should Allowable Solutions cover 30 years of residual emissions?
Yes ☐	
No ☐	
If no, how often do you think it should be reviewed?	

Question 31	Do you think the calculation of the carbon abatement required should take account of the expected and actual decarbonisation of the electricity grid?
Yes ☐	
No ☐	
Please give reasons for your answer	

Chapter 6: Allowable Solutions delivery routes

Question 32	Do you agree that route (i) of the house builder 'menu' can be accommodated within current Building Regulations compliance processes?
Yes ☐	
No ☐	
Please give reasons for your answer	

Question 33	What kinds of Allowable Solutions measures undertaken under route (ii) of the house builder 'menu' do you consider could be accommodated within current Building Regulations compliance processes?
Comments:	

Question 34	Do you think that house builders should be able to enter into a direct transaction with third parties, including local authorities, to deliver Allowable Solutions?
Yes ☐	
No ☐	
Please give reasons for your answer	

Question 35	How might that approach operate?
Comments:	

Question 36	Do you have any evidence of how such a system might work which could be drawn upon in developing such an arrangement?
Comments:	

Question 37	Do you agree that provision of a matching service should be considered?
Yes ☐	
No ☐	
Please give reasons for your answer:	

Question 38	Do you have views on how such a system might work to assist house builders?
Comments:	

Question 39	Do you have any evidence of existing matching services which could be drawn on in developing such an arrangement?
Comments:	

Question 40	Do you agree that provision of a brokerage service should be considered?
Yes ☐	
No ☐	
Please give reasons for your answer	

Question 41	Do you have views on how such a system might work to assist house builders?
Comments:	

Question 42	Do you have any evidence of existing brokerage services which could be drawn on in developing such an arrangement?
Comments:	

Question 43	Do you agree that provision of a fund approach should be considered?
Yes ☐	
No ☐	
Please give reasons for your answer:	

Question 44	Do you have views on how such a system might work to assist house builders?
Comments:	

Question 45	Do you have any evidence of existing funds which could be drawn on in developing such an arrangement?
Comments:	

Question 46	If invested in a fund, Allowable Solutions payment capital and profits can both be reinvested on a revolving fund basis to increase long-term potential carbon savings. However, commercial returns and/or capital could be given back to house builders rather than reinvested, but this would mean less carbon being abated and hence a higher upfront investment would be required to meet the house builder's zero carbon homes obligation. Is there any interest from house builders in investing into a fund which abates carbon and also makes a return rather than making a smaller one-off payment?
Comments:	

Question 47	What are your views on the assessment of the delivery options set out in the table below paragraph 6.19 of the consultation document?
Comments:	

Question 48	Are there other considerations which government should be taking into account?
Comments:	

Question 49	In the light of this analysis what is your preferred delivery route?
Please provide reasons for your answer.	

Chapter 7: Next steps

Question 50	What do you think an appropriate familiarisation period might be for industry and appropriate transition arrangements for Allowable Solutions?
Please provide reasons for your answer.	

Question 51	A development stage impact assessment accompanies this consultation document. Do you have any views on the analysis, costs and benefits presented in that impact assessment? Can you provide any additional evidence to inform the further development of the impact assessment?
Comments:	