Communities and Local Government

Proposal to introduce a Code for Sustainable Homes

Regulatory Impact Assessment

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December 2006
Department for Communities and Local Government

On 5th May 2006 the responsibilities of the Office of the Deputy Prime Minister (ODPM) transferred to the Department for Communities and Local Government

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Regulatory Impact Assessment

1. Title

This Regulatory Impact Assessment (RIA) considers the potential impact of the introduction of the Code for Sustainable Homes ('the Code') operating within England. It fully considers the costs and benefits of introducing the Code as voluntary from April 2007.

It also includes a provisional assessment of the costs and benefits of making assessment against the Code mandatory from April 2008. The Government is minded to propose that all new homes should be required to have a mandatory Code rating in the future and intends to consult upon this in 2007.

2. Purpose and Intended Effect

(i) Objectives

The objectives of this proposal are to improve the overall sustainability of new build homes, and in particular to:

- reduce the carbon emissions, and therefore the contribution to climate change from new homes; and
- to ensure that new homes are better adapted for the problem of climate change;

through introduction of the Code for Sustainable Homes.

The Code for Sustainable Homes will:

- encourage industry to follow more sustainable construction practices, and to build more sustainable homes;
- encourage consumers (of new homes) to demand more sustainable homes.

More sustainable homes, *at a minimum*, have, and/or provide the facilities to encourage:

- improved energy efficiency (and therefore lower carbon emissions);
- reduced consumption of potable water;
- reduced surface water runoff,
- reduced environmental impact of materials;
- improved site waste management and adequate space for accessible waste storage.

They also have, and/or provide the facilities to encourage:

- improved waste recycling provision;
- improved consideration of flood risk during citing and design;
- more responsibly sourced materials;
- reduced pollution impact;
- design features which support the health and well-being of occupants;
- design features which facilitate more sustainable management of the home, including disabled people;
- more positive impacts on the ecological value of the site.

More sustainable construction practices involve:

- reduced waste from the construction process;
- consideration of the surrounding community during construction;
- reduced environmental impacts during construction.

It is intended that the construction of more sustainable homes will be achieved in a manner which is cost-effective for industry, and for the wider public (taking into consideration social and environmental benefits) and is practical to implement.

The Code will apply only in England.

(ii) Background

The Stern review reports that there is an overwhelming body of scientific evidence that climate change is already happening. Whilst exact details about the impacts of climate change on the weather we experience and on society still contain some uncertainties, there is a clear body of economic and scientific evidence that continuing along the current path is no longer tenable and that urgent action is needed to first slow the growth in carbon emissions – a key contributor to climate change – and then reverse it.

The UK domestic housing sector makes a significant contribution to the problem of climate change. In 2004, more than a quarter of the carbon dioxide emissions in the UK came from energy used to heat and light our homes. The housing sector also creates a range of other environmental impacts, for example through inefficient use of water (which also has an indirect impact on carbon emissions used to supply, heat and treat it), generation of waste, and use of polluting materials.

Although great progress has been made in improving the sustainability of buildings and their contents through a range of initiatives in recent years, there is increasing recognition of the urgent need to take more radical action to reduce the greenhouse gas emissions caused by housing and to improve the sustainability of homes more generally.

However it is also clear that providing enough new homes to meet demand is an important issue. Increases in longevity and the tendency for people to form more, but smaller households means that we need additional housing provision. We expect that by 2050 about one-third of the housing stock will have been built since 2006. The current plans in place for housebuilding offer us an important opportunity to ensure that sustainability considerations are built into our future housing stock.

The Building Regulations set mandatory standards for design and construction of buildings, which include aspects of health, safety and environment, and are updated regularly (approximately every 5 years) to reflect changes in required standards and developments in technology. On their own, however, they offer no incentive for exceeding the minimum standards, offer no stimulus to innovation, and offer no mechanism through which we can increase consumer demand for more sustainable housing.

EcoHomes is the main standard for sustainable homes which currently exists within the marketplace. It is a voluntary standard, developed, owned and managed by the Building Research Establishment. Whilst it has been particularly successful in minimising the environmental impact of affordable housing built by Registered Social Landlords (RSLs) with Housing Corporation funding, and built on land owned by English Partnerships, its market penetration in the private sector is still limited.

A commitment has already been made that all new homes built with funding from the Housing Corporation, and built on land owned by English Partnerships, will be built to EcoHomes 'Very Good' Standard from April 2006. These homes will be built to Code level 3 – the approximately equivalent level to EcoHomes 'Very Good', upon introduction of the Code for Sustainable Homes.

It is intended that the Code for Sustainable Homes will replace EcoHomes, and be managed by Communities and Local Government, thereby linking it closely to the Building Regulations and ensuring it is designed and operated in line with the Government's environmental objectives.

(iii) Rationale for Government Intervention

As the recent Stern Review has set out, there is now an overwhelming body of scientific evidence that indicates that climate change is a serious and urgent issue. It shows that business as usual is not a viable option, warning that global warming could shrink the global economy by 20%. It states, however, that if we take action now, it could cost just 1% of global gross domestic product. Due to the significant contribution that construction and use of our homes makes to the level of carbon dioxide emissions and the problem of climate change, failure to act now in the new homes sector will contribute to greater costs of damage from climate change in the longer term.

Without introduction of the Code for Sustainable Homes, the building industry will lack regulatory certainty over the speed and direction of travel for integrating sustainability into new homes. It will be unable to factor sustainability measures into land purchase prices and will therefore be disinclined to integrate such measures into the homes that it builds.

Furthermore, without a more certain market for sustainable technologies in new homes, there will be limited incentive for innovation in new technologies. The opportunity will also be lost for a fall in the costs of sustainable technologies which would otherwise be driven by economies of scale arising through use of the Code.

Government plans for additional housing provision mean that one third of our housing stock for 2050 will have been built in the period from 2006. Due to the high rate of new build and the long lifetime of a new home, failure to take steps which improve the sustainability of new homes will 'build in' higher carbon dioxide emissions and other environmental impacts into our future. The Government has an obligation to take steps to ensure that the environmental impacts of new build plans are minimised.

Consultation

Within government

Consultation within government on the proposed Code was undertaken by the former ODPM and continued under CLG. Other Government Departments (and Agencies), including DEFRA, DTI, OGC and the Environment Agency continue to be represented on the Code's Senior Steering Group (SSG).

Other discussions and meetings have also taken place with them outside of the formal SSG process.

Government representatives also attended the consultation workshops that were undertaken early in 2005.

Public consultation

Consultation on some of the measures has already been undertaken outside the development of the Code. Consultation on the proposals to revise the energy efficiency provisions of the Building Regulations in England & Wales (Part L) was completed in 2004 and has been incorporated in the current draft which came into force on 6th April 2006.

Initiatives to reduce waste during construction have also been explored by DEFRA at consultation workshops with industry in 2005 on proposals for Site Waste Management Plans.

The Government established the SSG, chaired by CLG to advise on the overall development of the Code. External Membership of the SSG is currently as follows:

- Sustainable Development Commission
- Environment Agency
- Barratt Homes
- East Thames Housing Association

- Construction Products Association
- Stanhope plc
- Other Government Departments (DEFRA, DTI, OGC)

Others attend as observers:

- Housing Corporation
- English Partnerships
- BRE (Building Research Establishment)

WWF (UK) were originally full members of the SSG, but resigned following the publication of the Code consultation document in December 2005. However, they subsequently rejoined the SSG as observers earlier this year.

This group produced an initial outline of the Code as a discussion tool for the Delivering Sustainable Communities Summit. Key stakeholders were invited to workshops on this initial outline of the Code during March and April 2005. The outputs from these workshops informed the drafting of the Code.[1]

Public consultation on this draft Code commenced on 5 December 2006 and officially closed on 6 March 2006. The consultation primarily comprised of:

- The proposal for the Code for Sustainable Homes (CSH, or "the Code")
- Proposals for minimum standards
- The proposed system of Code points
- The response form; and
- A partial RIA

By the close of the consultation period, 444 formal responses to the consultation had been received. A further 1607 people sent a standard 'campaign' letter or email with comments on PPS3 and the Code.

It should be noted that the proposals received widespread media coverage. Many respondents welcomed the concept of a Code, but also felt that it should be more ambitious and not voluntary.

The clearest message from the consultation was that people were in favour of the Code, but many of these attached strong conditions to this, mostly related to measures which would strengthen the Code.

1 Copies of the workshops reports and the agreed initial outline are available at: www.dti.gov.uk/construction/sustaincode/codelead.htm

In the light of the consultation, and in consultation with industry and NGO representatives within the Code's SSG, the Government announced measures to strengthen the Code. Key changes are as follows:

- The lowest levels of the Code have been raised above the standard of mandatory building regulations, and the revised Code will form the basis for the next wave of improvements to those regulations relating to energy;

- Minimum standards have been set for energy efficiency and water efficiency at every level of the Code, and at entry level for other key sustainability design features – materials, surface water runoff and waste management;

- Use of low and zero carbon technologies will be promoted by awarding points for their inclusion within the design of a new home.

74 respondents stated that the Code should be mandatory for all new homes. The Government is minded to propose that all new homes should be required to have a mandatory Code rating in the future and intends to consult upon this to explore further the likely costs and benefits.

196 respondents supported a mix of essential elements and optional elements, as it would allow for flexibility in design. The Government has therefore proceeded with a Code design which provides flexibility for developers whilst ensuring that standards of sustainability are maintained. This has been done through the combination of minimum standards, with a range of additional design elements that developers can choose to incorporate to increase the sustainability performance of a home.

The Government also announced on 9 March 2006 that, as an interim measure, from 1 April 2006 all new homes funded by English Partnerships and the Housing Corporation would meet EcoHomes Very Good 2006 standards which are broadly equivalent to Code level 3.

A summary of responses to the consultation on the Code is available on the CLG website.

Options

This RIA examines two key options for implementing the Code:

Option 1: Do nothing. i.e. do not introduce the Code for Sustainable Homes;

Option 2: Introduce the Code for Sustainable Homes on a voluntary basis;

It also explores the potential costs and benefits, at a high level, of making assessment against the Code mandatory, as shown within the 'Further Options Considered' section.

Option 1 – 'Do Nothing'

The 'do nothing' option, is the baseline against which Option 2 is measured. It effectively represents 'business as usual' (BAU).

It assumes that the current annual number of assessments under EcoHomes, and the current proportion of homes achieving different levels of sustainability performance under the EcoHomes assessment, would continue into the future. This assumption is valid on the basis that that all new Government funded homes, and homes built on land owned by English Partnerships, are already required to achieve the EcoHomes 'Very Good' standard[2], and the Housing Corporation will be using it for the 2008-10 bid round.

There are no additional direct costs and benefits arising from the 'do nothing' option.

Option 2 – 'Voluntary Code'

Option 2, introduction of the Code on a voluntary basis, assumes that the annual number of assessments currently done under EcoHomes will instead be done under the Code for Sustainable Homes. It includes a range of assessment numbers undertaken by the private sector on the basis that the higher status generated by announcements on the Code for Sustainable Homes, and subsequent marketing undertaken, will lead to increased Code uptake. Similarly, it assumes that the current proportions of homes achieving different levels of sustainability performance under the EcoHomes assessment, would achieve the approximately equivalent levels under the Code (Code Level 3 is approximately designed to be equivalent to the EcoHomes 'Very Good' standard although is more demanding, in particular due to the minimum requirements for energy and water efficiency).

The key difference between the Code for Sustainable Homes and EcoHomes, which affects the additional costs and benefits under each option, is the level of flexibility offered by each. Whereas EcoHomes 2006 is 'fully flexible' (in that there is no prescription as to which specific measures should be adopted), the Code for Sustainable Homes includes minimum standards (at every level of the Code for energy and water efficiency, and for achievement of Code level 1 for materials, surface water run-off, and waste management). These minimum standards increase both the costs and benefits of compliance with the Code.

There are other differences between EcoHomes and the Code for Sustainable Homes but these are not expected to significantly impact upon the relative costs and benefits.

Further Options Considered

The Government is minded to propose that all new homes should be required to have a mandatory Code rating from April 2008, and is consulting upon this in principle within the accompanying overarching consultation document, 'Building a Greener Future, Towards Zero Carbon Development'. This RIA considers, at a high level, the costs and benefits of making assessment against the Code mandatory.

In this cost/benefit analysis, it has been assumed that all homes that would otherwise have achieved various Code levels through a voluntary assessment, would achieve the same levels under a mandatory assessment, and that all additional assessments under a mandatory Code would meet level 1 only.

Further analysis of the costs and benefits of the mandatory option will be considered in a separate partial RIA when a full consultation on making a Code rating mandatory is held during 2007.

2 For further details see the English Partnership website at: http://www.englishpartnerships.co.uk/standards.htm

Costs and Benefits

Sectors and groups affected

Many sectors of the construction industry will be affected by introduction of the proposed Code. In particular, it will affect large and small homebuilders, existing EcoHomes assessors, manufacturers of sustainable technologies, and homebuyers. To a lesser extent it will affect estate agents.

Homebuilders

Under a voluntary Code, homebuilders will choose whether to assess their developments against the Code, and therefore whether they are prepared to incur the associated administrative costs.

Homebuilders will be able to choose which Code level they aim for, and will therefore be in control of the 'policy costs' they incur. Over the longer term, those intending to implement the Code will seek to offset these costs through making lower bids for land purchase, although under a voluntary Code, offsetting will be difficult due to the uneven playing field.

In a world where consumers are becoming increasing environmentally conscious, and demanding higher sustainability performance in their goods and services, homebuilders will obtain benefit in terms of competitive differentiation through marketing their performance against the Code.

It should be noted that economies of scale and access to a range of internal technical expertise may make it easier for large homebuilders to adapt to using the Code, than for small homebuilders.

Assessors

Current EcoHomes assessors will need to retrain to use the Code. There will be opportunities for other firms to offer Code assessment services conditional upon their obtaining accreditation.

Manufacturers of Sustainable Technologies

Effects on manufacturers of sustainable technologies will vary based upon the degree of take up of higher Code levels. At lower Code levels (up to 3), there will be increased demand for more sustainable technologies currently in the marketplace (and lower demand for less sustainable technologies). At higher Code levels, there will be increased demand for sustainable technologies not currently offered on a commercial scale in the marketplace, therefore a degree of investment in R&D and commercialisation will be required.

Homeowners

Homeowners will benefit through their ability to exercise more informed choice in their house purchase and greater ability to secure a higher standard of accommodation. They will experience lower running costs and benefit from the improved health and well being they will experience through living in more sustainable homes.

Estate Agents

Estate agents will need to adapt to marketing homes of different standards. They will therefore need to gain an understanding of the basics of the Code and the benefits it brings to homebuyers.

Society

Society in general will benefit over the longer term from the reduced environmental impact of housing, for example, reduced damage from climate change, reduced water shortages, lower volumes of waste going to landfill, and lower pollution levels.

Race Equality Assessment

Introduction of the Code for Sustainable Homes is not expected to give rise to any race equality impacts.

Vulnerable Groups

Introduction of the Code for Sustainable Homes is expected to have minor positive impacts on vulnerable groups. Improved energy efficiency within the future housing stock will contribute to reductions on fuel poverty. Implementation of aspects of the health and well being category, such as the Lifetime Homes standards, may improve accessibility and usability of homes for the elderly and those with disabilities. There are not expected to be any negative impacts.

Analysis of Costs and Benefits

Assumptions and Uncertainties

- The rate of construction of new build homes has been assumed in line with our home building aspirations, increasing to 200,000 net additions by 2016.

- 15 years of additional home building has been assumed in calculating the total net present costs and benefits. This 15-year period was chosen to provide a long enough horizon to reflect potential changes in the market whilst reducing the uncertainties of forecasting too far into the future.

- A period of 25 years has been used as the basis for the lifetime of benefits for each home built to Code standards. This figure was chosen to reflect the average lifetime of the technologies needed to meet the Code levels before they need to be replaced. Sensitivity testing of this assumption has been done and is discussed below.

- The rate of assessments has been assumed to continue at current assessment rates under EcoHomes:

  – Public sector – 24,000/yr

  – Private sector – 3,000/yr

Sensitivity testing has been done, increasing the number of assessments proportionally in line with the rate of housebuilding, and doubling of the number of private sector assessments currently undertaken under EcoHomes (i.e. to 6000/yr).

- Total assessment fee – £31.50. This is based on £30 fee currently charged for an assessment under EcoHomes, plus £1.50 additional cost for lodgement of the Code certificate (which is not currently incurred under the EcoHomes scheme). For those homes currently assessed under EcoHomes it is only this additional cost of £1.50 that will be incurred compared to the do-nothing baseline.

- 2 man days (value of £400) assumed for gathering information to feed into an assessment. Information gathering required for 5 different home design specifications within a typical 100 home development.

- There are considerable uncertainties over the levels of sustainability performance which home builders will aim to achieve in the private sector. This analysis assumes that proportions of private sector Code assessments achieving different levels of the Code continue as per proportions achieving approximately equivalent levels under EcoHomes. These are as follows:

  – Level 1 – 83%

  – Level 2 – 15%

  – Level 3 – 2%

  – Level 4-6 – 0%

- In monetising the carbon savings we have assumed the social cost of carbon to be £70 per tonne in 2000 prices.[3] However, the Stern Review suggested that the figure for this may be higher so we have also used the upper bound of £140 per tonne in 2000 prices as means of sensitivity testing our results.

- Various energy price forecasts have been used. We have used a standard flat rate figure as the basis but have then run sensitivity tests using DTI high and low energy price projections. The results are discussed below.

3 HM Treasury and Defra, "Estimating the Social Cost of Carbon Emissions" 2002.

The policy costs (costs of achieving different Code levels) are based on the 'Cost Review of the Draft Code for Sustainable Homes' undertaken by Cyril Sweet in 2006 for English Partnerships and the Housing Corporation. The costs represent an estimate of total costs to a developer including materials, plant and labour, preliminaries, overheads, contingencies, profit and design fees. Detailed exclusions can be found within the Cyril Sweett report.[4] The costings are based on a home builder with a trading turnover of 5,000 to 10,000 dwelling per annum. It should be noted that the policy costs will vary according to the size of the home builder (which will affect purchasing power), and the size of developments undertaken (larger developments will bring economies of scale).

A key assumption impacting on the overall costs of the policy are the specific costs associated with meeting the standards of the Code. Achieving these standards, particularly higher levels of the Code requires the adoption of emerging sustainable technologies. As demand for these technologies increases and their markets mature, it is likely that increased competition and opportunity to take advantage of economies of scale, will cause the costs of these technologies to drop significantly.

Innovation may also cause policy costs to decrease in the future, as highlighted by international experience. Some developers overseas have indicated that improvements in the efficiency of new housing can be achieved without additional cost through new techniques and materials, e.g. using off-site or modern methods of construction using concrete panels as opposed to more conventional 'brick and block' methods.

This RIA therefore includes analysis of the potential costs using a number of different scenarios for reduction in the cost of technology. As a base case it assumes no fall in costs of meeting the Code over time. However, this scenario is considered to be highly unrealistic given our understanding of technology markets as outlined above. Other scenarios tested assume cost reductions of 5%, 10%, and 20% per annum.

Option 1: – 'Do Nothing'

Option 1 is the baseline case representing 'business as usual'. Costs and benefits are therefore considered to be zero in order to assist the additionality of option 2.

Option 2: – Introducing the Code on a Voluntary Basis from April 2007

Administrative Costs:

The key administrative costs are as follows:

- Costs to developers for obtaining an assessment (which will include the assessors fee plus time taken in preparing and providing input information to the assessment);

- Costs to scheme operators in running the scheme. It is assumed that the assessment fee borne by developers will incorporate (and enable scheme operators to recoup) all of their costs by e.g. development and delivery of training to assessors, preparation of internal assessment/QA systems, resource used to undertake the assessment itself, lodgement of Code certificates.

4 Cyril Sweett (2006) A Cost Review of the Draft Code for Sustainable Homes: Report for English Partnerships and the Housing Corporation.

Based upon the assumption that under a voluntary Code the number of assessments will be the same as expected under EcoHomes, then the additional administration costs of assessing against the Code will be £1.50 per application as discussed above. Over a 15 year period of assessments the present value of these costs will be £480,000 (an average annual cost of £32,000).

However, if we assume that the introduction of the Code will lead to an increase in the number of assessments over and above what would be expected under EcoHomes then administration costs of the policy will be higher. If the number of private sector assessments were to increase in proportion to the projected increase in homes built, this would have a present value of £3 million. If we assume that the number of assessments would double under the Code then the present value of these costs would rise to £5 million.

These costs are very small in the context of the overall construction industry, which accounts for approximately 5.4% of GDP,[5] with an output of £67.5 billion in 2005.[6]

Policy Costs:

The key policy costs are costs to developers in meeting different levels of the Code. Analysis of policy costs uses assumptions on the projected number of assessments undertaken (27,000/yr), the projected proportions of assessments achieving different levels of the Code will also influence the costs, and the rate of reduction of technology costs over time.

The table below therefore shows the present value of the policy costs to the construction industry (over the 15 year new build period) under the four technology cost reduction scenarios:

Cost reduction scenario	**Present value costs (15yrs)**	**Average annual cost**
Flat costs over time	£736m	£49m
5% reduction per annum	£517m	£34m
10% reduction per annum	£375m	£25m
20% reduction per annum	£214m	£14m

Economic benefits

The key direct economic benefit arising through implementation of the Code for Sustainable Homes, relative to use of EcoHomes under option 1 is the utility saving to homeowners through reduced energy and water bills.

5 Source: http://www.statistics.gov.uk/about/methodology_by_theme/constructionstats/downloads/constructiondti.pdf

6 Source: http://www.statistics.gov.uk/downloads/theme_economy/ukea2006q2.pdf

Based upon the assumptions detailed above on the projected number of assessments undertaken (27,000/yr), energy and water utility savings, and fuel prices which remain constant at their current rate, the present value of economic benefits accruing over a 25 year period are £292 million (an average annual benefit of £19 million).

It is useful to note that over a 30 year period the present value of the benefits rises to £325 million, and over a 20 year period it falls to £252 million.

Sensitivity testing these results using DTI's high and low projections of energy prices gives a range of benefits accruing over 25 years, from £263 million to £328 million.

Social benefits

Social benefits will arise where developers implement the 'health and well-being' categories of the Code. These include provision of private external space, and specific standards of daylighting. Benefits will be realised through improved physical and mental health to occupants.

There will also be benefit through raised awareness of sustainability and climate change amongst society.

These benefits cannot be quantified.

Environmental benefits

The Stern report highlights the economic case for taking action to reduce the threat from climate change, through reducing our greenhouse gas emissions to the environment.

The Code for Sustainable Homes generates significant carbon savings, classified here as environmental benefits.

Carbon savings will arise not only directly through energy efficiency, but also indirectly through water efficiency, due to the energy intensity of the water treatment and supply process, through reduced processing of waste, and through use of materials with a lower enbodied energy.

Based upon the assumptions detailed above on the projected number of assessments undertaken, and using the central assumption of the social cost of carbon at £70 per tonne (2000 prices), then the present value of the environmental benefits accruing over a 25 year benefit period (for 15 years of new build homes) is £88 million. This equates to an average annual benefit of £6 million.

These are likely to be substantially larger under assessment against the Code rather than under a voluntary Code.

The environmental benefit fas been sensitivity tested for a higher social cost of carbon to reflect evidence from the Stern Review which suggests that this figure may be an underestimate. Using a higher estimate of £140 per tonne (2000 prices) (the upper bound of DEFRA guidance), the present value of carbon benefit accruing over a 25 year period is estimated to be £176 million.

Other economic benefits arising from implementation of the Code, for example, lower waste disposal costs, cannot be quantified at this stage.

Further Options Considered – making assessment against the Code mandatory from April 2008

Administrative Costs

In this high level analysis it is assumed that under mandatory assessment, all new homes built each year would have to be assessed against the Code. Clearly there are considerable uncertainties as to the extent of administrative costs without an understanding of how a mandatory requirement to assess against the Code would be implemented. For the purpose of this analysis it is assumed that the additional cost for assessment of one in 20 new homes (based upon a development of 100 homes with 5 different design specifications), as compared to the 'do-nothing baseline' would be £431.50. (Although for the 27,000 homes already assessed under EcoHomes the additional cost would only be £1.50 per assessment).

Based on a 15 year period of home building, the present value of administration costs would be £107 million (an annual average of £59 million).

Policy Costs

The key policy costs are costs to developers in meeting different levels of the Code. They are highly dependent on the assumed proportion of home builders aiming to meet different levels of the Code. It has been assumed that all these houses would meet Code Level 1.

They are also highly dependent on the assumed reduction in costs of technology over time. The table below illustrates the present value of the costs to the construction industry over the a 15 year period of new build under four technology cost reduction scenarios:

Cost reduction scenario	**Present value costs (15yrs)**	**Average annual cost**
Flat costs over time	£2,143m	£143m
5% reduction per annum	£1,491m	£99m
10% reduction per annum	£1,068m	£71m
20% reduction per annum	£597m	£40m

Economic benefits

The key economic benefits arising through implementation of the Code for Sustainable Homes, relative to the 'do nothing' option are the utility savings to homeowners through reduced energy and water bills.

Based on an assumption that all homes additional to those that would have assessed under a voluntary option, would meet Code level 1, and assuming constant fuel prices at the current rate, the present value of benefits from utility savings accruing over a 25 year period is £825 million (an average annual benefit of £55 million).

The sensitivity of this value can be demonstrated through varying the length of the benefit accrual period (between 20 and 30 years), and the energy price assumptions (from low to high DTI long term price projections). Using this range, the benefits from mandatory assessment of a 15 year period of new build are estimated to be between £641 million and £1,036 million.

Social benefits

As for option 2, social benefits will arise where developers implement the 'health and well-being' categories of the Code, but cannot be quantified.

Environmental benefits

The key environmental benefits arising through implementation of the Code for Sustainable Homes, relative to the 'do nothing' option are carbon savings, leading to reduced damage from climate change. These are likely to be substantially larger if assessment against the Code were mandatory rather than under a voluntary Code.

Based upon a social cost of carbon of £70 per tonne (2000 prices), the present value of benefits accruing over a 25-year benefit period, is £408 million (with an average annual benefit of £27 million). The sensitivity of this value can be demonstrated through varying the length of the benefit accrual period (between 20 and 30 years). Using this range, the benefits from mandatory assessment of a 15 year period of new build are estimated to be between £345 million and £462 million.

The sensitivity can also be tested using a higher value for the social cost of carbon (£140 per tonne). In this case, the present value of benefits accruing over a 25 year period is £815 million (an average annual carbon saving value of £54 million).

Summary of Costs and Benefits For Introduction of the Code on a Voluntary Basis

	Costs		Benefits	
	Administrative Costs	**Policy Costs**	**Economic Benefits**	**Environmental Benefits**
Option 1	N/A	N/A	N/A	N/A
Option 2 (average annual value)	£32,000 (based on 3000 assessments per year)	£25 million (based on 10% technology cost reduction per year)	£22 million (based on 25 year benefit period, high DTI long term fuel price projections)	£12 million (based on 25 year benefit period, higher social cost of carbon)

Small Firms' Impact Test

The Code for Sustainable Homes is a voluntary initiative, and as such no builder or developer has to build to the standards contained within the Code.

However, before decisions are made on making a Code rating mandatory, we will undertake a Small Firms' Impact Test.

Competition Assessment

The two markets affected by the introduction of the Code for Sustainable Homes will be:

- The home building market
- The sustainable energy technology market

The home building market

There are over 18,000 home builders registered in the UK but only 200 of these produce 50 or more homes per year. There has been a significant consolidation in the industry in the last 15 years with the market share of the top 10 firms growing from 10% to over 40%, but no single firm dominates the market nationally. The next 15 building firms hold around 17% of the market share; Registered Social Landlords hold around 11%; and all other private sector builders hold around 30% of the market.

There are relatively low barriers to entry given the low capital costs of setting up as a home builder, and there is a regular flow of small home builders entering and leaving the market. Barriers for small builders in growing to be volume home builders relate to the capital costs of building up a landbank, gaining access to sites, and gaining planning permissions within a timescale which is economically feasible. The Code is not expected to significantly affect the barriers to entry.

Since market power is not concentrated on a small number of major players, and since the Code for Sustainable Homes is not expected to significantly alter the barriers to entry or to building up as a volume home builder, it is anticipated that introduction of the Code will cause minimal impact on UK competition for the home building market.

The sustainable energy technology market

The household microgeneration sector is still relatively small with less than 100,000 installations in total to date in the UK.[7] The market is based around emerging technologies that are currently a niche market and not widely available. The number of installers has been increasing significantly in recent years, coinciding with the launch of DTI support programmes.

It is expected that the Code for Sustainable Homes will stimulate demand within this market and bring some of these technologies more mainstream. Stimulating demand here is likely to reduce capital costs within the industry as firms can take advantage of economies of scale. Given there are no significant barriers to entry an increase in demand will encourage competition within the industry as new firms enter to meet the demand. Therefore, it is anticipated that as a result of the Code, competitiveness within the sustainable energy technology market is likely to improve.

Enforcement, sanctions and monitoring

With the introduction of a voluntary assessment against the Code – there is no requirement to have an enforcement mechanism or sanctions in place to ensure assessments are carried out on all homes. It will however, be necessary to ensure that when a Code assessment is carried out, it is robust and can be relied on by consumers. Our approach will be to establish a light-touch market-driven enforcement regime, consistent with the voluntary nature of the Code.

Code assessments will be carried out by independent assessors who may be drawn from any relevant profession, so long as they are appropriately qualified and trained. To ensure consistent quality of assessments, assessors will need to be registered with a body licensed to accredit Code assessors. Accrediting bodies will quality check assessments and enforce against their members, ultimately through the sanction of ceasing their membership.

Central records of Code assessments will be maintained to ensure that take-up of the Code could be monitored. Interrogating this database will act as a feedback mechanism to inform future policy.

Implementation and delivery plan

The Code for Sustainable Homes is planned to replace EcoHomes, becoming the single national standard that shows the direction of future building regulations for energy use in the home. The consultation document, 'Building a Greener Future – Towards Zero Carbon Development', sets out possible implementation timescales. A further consultation will be issued in early 2007 on making a Code rating mandatory, and implementation plans will be discussed in more detail there.

7 Source: EST, Econnect, Element Energy: Potential for Microgeneration Study and Analysis, 2005.

As stated in the December 2005 consultation document on a draft Code, the Government sees benefits in using the existing network of EcoHomes assessors. These assessors are trained and registered by BRE (Buildings Research Establishment). In order to ensure an orderly transition between the two systems it is intended that the EcoHomes assessor network will be used exclusively at the outset. These EcoHomes assessors will be eligible to be re-trained as Code assessors, though this will not prevent individuals who are not currently EcoHomes assessors training to become Code assessors.

It is estimated that the current assessment network could cope with a substantial increase in the number of homes being assessed (though more assessors are expected to enter the market). In common with EcoHomes, it is not proposed that a separate assessment is carried out on every house in a development where they are built to the same specification. A key success criteria will be ensuring that sufficient EcoHomes assessors have retrained as Code assessors by the launch date to ensure that market demand for assessments can be met. During 2007 we will work with other parties interested in becoming Code accrediting bodies.

Whilst option 2 is not a regulatory proposal, the practice of allowing a minimum of a 12 week implementation period between issuing guidance and the proposal taking effect will be followed. During this period a detailed technical guidance document will be issued, enabling designers and assessors to prepare for the change.

It is planned that the Code will go live between 6 April 2007 and 1 May 2007. In common with the way changes to Building Regulations are made, there will be transitional arrangements. These are necessary because major developments take a long time to plan, and we will not expect developers to redesign their developments part way through the process. This is consistent with the Code's approach of encouraging sustainability to be designed in from the outset, rather than bolted on at the end. These transitional arrangements are especially important in the social housing sector, where in practice we expect the commitment to build to Code level 3 to apply to all housing in the 2008/9 programme onwards.

A comprehensive communication strategy will be carried out throughout the implementation stage up to the launch of the voluntary Code in April/May, to ensure that stakeholders are aware of the Code.

Post-implementation review

The consultation document 'Building a Greener Future – Towards Zero Carbon Development' sets out that we are minded to propose that all new homes should be required to have a mandatory Code rating. As such, setting out a fixed timescale for carrying out a post-implementation review is not appropriate. The Government is committed to reviewing the implementation of the Code, and will ensure that this review aligns with the timescale adopted for updating energy and other aspects of the Building Regulations, as informed by this consultation.

The review will use data gathered through the central records on uptake in the market of different levels of the Code, and market research on the impact on consumers. Such a review will enable us to ascertain if the objectives of the Code have been met i.e. whether environmental impacts, and in particular carbon dioxide emissions arising from construction and use of new homes have been reduced, through take up of the Code by industry, and demand by consumers. Baseline figures used will be based on the take-up of EcoHomes.

The outcome of any review will inform policy developments on Building Regulations, and the Code, including any possible extension of the Code to existing buildings.

Summary and Recommendation

Summary costs and benefits table		
Option	**Average benefit per annum: economic, environmental, social**	**Average cost per annum (all costs economic): policy and administrative**
1	N/A	N/A
2	Economic – £22 million Environmental – £12 million Social – unquantifiable	Administrative – £32,000 Policy – £25 million

The Stern Review has highlighted the magnitude of costs which society will face unless action is taken to reduce our greenhouse gas emissions. The sizeable proportion of greenhouse gas emissions created through construction and use of our homes underlines the importance of taking actions to reduce greenhouse gas emissions from the domestic housing sector.

The Code for Sustainable Homes sets out a pathway for movement towards zero carbon homes, which will be used to signal the future direction of Building Regulations. As such it underpins any timeline for achieving higher standards of sustainability, for example, as set out in the overarching consultation document, 'Builder a Greener Future, Towards Zero Carbon Homes'. In addition, as the cost per tonne of carbon saved is relatively low compared to other sectors and measures, it is a crucial instrument in achieving the medium to long term carbon reduction targets to which the UK Government has committed.

In light of these important strategic reasons, and in view of the outcome of the cost benefit analysis, in particular where the high end social cost of carbon assumption is used with a 10% or higher fall per year in the cost of technology, option 2 – introduction of assessment against the Code on a voluntary basis, is recommended.

The consultation undertaken on the Code for Sustainable Homes demonstrated that stakeholders would like a strong Code to promote sustainable home building practice for the future. The Government has an obligation to take this action now, in order to ensure that sustainability, and lower greenhouse gas emissions, are built into the housing stock that we will be using over generations to come.

Declaration and publication

'I have read the Regulatory Impact Assessment and I am satisfied that the benefits justify the costs'.

Signed by the responsible minister

Date .....

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