



Proposals for extending Display Energy Certificates (DEC) to commercial buildings

Impact Assessment

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Summary: Intervention & Options

Department /Agency: Communities and Local Government	Title: Impact Assessment of Proposals for Extending Display Energy Certificates (DEC) to Commercial Buildings	
Stage: Consultation	Version: Final	Date: 2 March 2010
Related Publications: Consultation Paper: Extending The Scope of Energy Performance Certificates and Making Better Use of Energy Performance Data		

Available to view or download at:

<http://www.communities.gov.uk>

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What is the problem under consideration? Why is government intervention necessary?

The market can fail to deliver sufficient investment in energy saving measures in non domestic buildings for several reasons including: the external costs of CO2 emissions from buildings are not paid for by those who own or occupy buildings; and some owners and occupiers may be unaware of many of the energy efficiency measures available and what the cost-effective improvements that could be made to a building are.

The commercial sector has an incentive to introduce energy efficiency measures in order to reduce fuel costs in the buildings that they occupy. However building owners and occupiers need information on how this can be achieved.

What are the policy objectives and the intended effects?

The policy objective is to extend the use of DECs to the commercial sector.

The proposal is intended to bring a number of benefits, including giving owners and building users:

- A better understanding of their CO₂ emissions and energy usage;
- Information on how they could improve the energy efficiency of the building; and
- A greater awareness of the energy efficiency of buildings.

The proposal will give Government a better understanding of where carbon emissions reduction potential lies which could form the basis for further policy to cut emissions

What policy options have been considered? Please justify any preferred option.

The options that have been considered include:

- do nothing;
- introduce DECs for commercial buildings on a compulsory basis as soon as is practically possible and enable voluntary take up of DECs in the meantime;
- introduce DECs for commercial buildings on a purely voluntary basis; or

The preferred option is Option 2. Voluntary action alone by occupiers of commercial buildings is unlikely to be sufficient to make the necessary contribution to the UK's emission reduction targets.

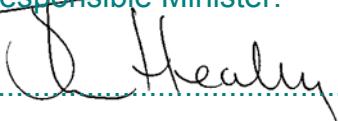
When will the policy be reviewed to establish the actual costs and benefits and the achievement of the desired effects?

We will review the policy after 2 years by carrying out quantitative research to establish whether the extension of DECs to commercial buildings has led to building occupiers implementing at least some of the recommendations. This research will be done to inform the work on EPBD2 which will need to be implemented by late 2012/ early 2013.

Ministerial Sign-off For Consultation Stage Impact Assessments:

I have read the Impact Assessment and I am satisfied that, given the available evidence, it represents a reasonable view of the likely costs, benefits and impact of the leading options.

Signed by the responsible Minister:



Date: 26 February 2010

Summary: Analysis & Evidence

Policy Option: 2		Description: Introduce DECs for commercial buildings on a compulsory basis as soon as is practically possible and enable voluntary take up of DECs in the meantime		
ANNUAL COSTS One-off Yrs £ Average Annual Cost £ 14.5 million 30		Description and scale of key monetised costs by 'main affected groups' The cost of obtaining DECs. The below total cost is broken down into the costs for different property types: retail £38m; offices £41m; warehouses £106m; industrial £82m		
Total Cost (PV) £267m				
Other key non-monetised costs by 'main affected groups' Every building is designed and operated differently and will require a different set of energy efficiency improvements. The cost of carrying out the energy efficiency improvement projects (capital costs) have not been included in the above monetised cost figures.				
ANNUAL BENEFITS One-off Yrs £ Average Annual Benefit (excluding one-off) £31.7m 30		Description and scale of key monetised benefits by 'main affected groups' Benefits of reduced fuel bills (gas and electricity) and reduction in carbon emissions if the increase in the number of DECs leads to an increase in the implementation of energy efficiency measures. The below total benefit can be divided between the different property types: retail £117m; offices £138m; warehouses £268m; industrial £60m. The saved carbon benefits of PV £143m; fuel bill saving £440m		
Total Benefit (PV) £583m				
Other key non-monetised benefits by 'main affected groups' For owners and building users the policy should deliver: <ul style="list-style-type: none"> • A better understanding of their CO₂ emissions; and • Information on how they could improve the energy efficiency of the building. The proposal will give Government a better understanding of where carbon emissions reduction potential lies which could form the basis for further policy to cut emissions				

Key Assumptions/Sensitivities/Risks

In the analysis it is assumed that the requirement becomes compulsory in 2010/11.

For the analysis we assume: DECs will only be obtained for buildings larger than 1000m² and the assumed average is 3000m²; that 20% of those who obtain a DEC implement some of the recommendations; and the take-up of recommendations results in a fuel saving of 5% for those who implement measures.

For the below net benefit range the % of those who obtain a DEC and implement some recommendations varies from 10% to 30% and the assumed average floor space varies from 2500m² to 3500m².

A risk is that DECs are obtained but the recommendations required to reduce fuel bills and save on carbon are not implemented.

Price Base Year 2009	Time Period Years 30	Net Benefit Range (NPV) -£24m to £753m	NET BENEFIT (NPV Best estimate) £316m
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What is the geographic coverage of the policy/option?	England and Wales			
On what date will the policy be implemented?	TBA			
Which organisation(s) will enforce the policy?	LWMAs			
What is the total annual cost of enforcement for these organisations?	£ 0			
Does enforcement comply with Hampton principles?				
Will implementation go beyond minimum EU requirements?	Yes			
What is the value of the proposed offsetting measure per year?	£ 0			
What is the value of changes in greenhouse gas emissions?	£143m			
Will the proposal have a significant impact on competition?				
Annual cost (£-£) per organisation (excluding one-off)	Micro	Small	Medium	Large
Are any of these organisations exempt?	N/A	N/A	N/A	N/A

Impact on Admin Burdens Baseline (2005 Prices)			(Increase)	
Increase of £	Decrease of	£ 0	Net Impact	£

Key:	Annual costs and benefits: Constant Prices	(Net) Present Value
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Summary: Analysis & Evidence

Policy Option: 3		Description: Introduce DECs for commercial buildings on a voluntary basis																	
COSTS		ANNUAL COSTS <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 40%;">One-off</td><td style="width: 10%; text-align: right;">Yrs</td><td colspan="2"></td></tr> <tr> <td>£</td><td></td><td colspan="2"></td></tr> <tr> <td>Average Annual Cost (excluding one-off)</td><td></td><td colspan="2"></td></tr> <tr> <td>£</td><td></td><td style="text-align: right;">Total Cost (PV)</td><td style="background-color: #e0f2e0;">£</td></tr> </table> <p>Other key non-monetised costs by 'main affected groups'</p> <p>If there is an increase in DECs then there will be the costs of obtaining them (for a single property the cost is £320 for year 1 and £135 per year in years 2 to 6). If this leads to an increase in the implementation of energy efficiency improvement projects then there will be costs associated with this.</p>		One-off	Yrs			£				Average Annual Cost (excluding one-off)				£		Total Cost (PV)	£
One-off	Yrs																		
£																			
Average Annual Cost (excluding one-off)																			
£		Total Cost (PV)	£																
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£																			
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£		Total Benefit (PV)	£																
Key Assumptions/Sensitivities/Risks <p>A risk is that DECs are obtained but the recommendations required to reduce fuel bills and save on carbon are not implemented.</p>																			
Price Base Year	Time Period Years	Net Benefit Range (NPV) £	NET BENEFIT (NPV Best estimate) £																
What is the geographic coverage of the policy/option?			England and Wales																
On what date will the policy be implemented?			TBA																
Which organisation(s) will enforce the policy?			LWMAs																
What is the total annual cost of enforcement for these organisations?			£ 0																
Does enforcement comply with Hampton principles?																			

Will implementation go beyond minimum EU requirements?	No			
What is the value of the proposed offsetting measure per year?	£ 0			
What is the value of changes in greenhouse gas emissions?	£ 0			
Will the proposal have a significant impact on competition?	No			
Annual cost (£-£) per organisation (excluding one-off)	Micro	Small	Medium	Large
Are any of these organisations exempt?	N/A	N/A	N/A	N/A

Impact on Admin Burdens Baseline (2005 Prices)			(Increase - £)
Increase of £	Decrease £	Net Impact	£

Key:	Annual costs and benefits: Constant Prices	(Net) Present Value
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[Use this space (with a recommended maximum of 30 pages) to set out the evidence, analysis and detailed narrative from which you have generated your policy options or proposal. Ensure that the information is organised in such a way as to explain clearly the summary information on the preceding pages of this form.]

Rationale for Government Intervention

Display Energy Certificates (DECs), which show how efficiently a building is operated, can be an important tool in helping to reduce both running costs and carbon emissions in commercial buildings. They were introduced as part of the Energy Performance of Buildings Directive (EPBD)¹ and are required in buildings larger than 1000m² that are occupied by public authorities and frequently visited by the public. Over 40,000² DECs have now been issued.

The analysis assumes that 36% of energy use is electricity and then gas and electricity prices are applied to the energy saved to derive the fuel bills savings. As we do not have evidence of actual take-up of recommendations at the moment these percentage savings are the same assumptions that were made in the 2007 Regulatory Impact Assessment of the EPBD.

The kWhs saved were converted to carbon equivalent saved by using the emissions factors from DECC's Greenhouse Gas Policy Evaluation and Appraisal³. The carbon equivalent savings are valued at the shadow price of carbon for gas and at the EU ETS allowance for electricity⁴.

All values were discounted over 30 years using the discount rate of 3.5%.

The Government agrees that there could be benefits to extending DECs in this way as discussed below. Non-domestic buildings account for approximately 17% of carbon emissions and DECs can be a useful tool to provide the information that is needed to help us tackle and minimise carbon emissions from the commercial sector.

Policy Objectives and Intended Effects

The overarching objective of this policy is to increase awareness of the energy non domestic buildings consume, provide information to owners and occupiers on how to improve the energy efficiency of their buildings and thus reduce carbon emissions in their buildings.

The proposal is intended to bring a number of benefits, including giving owners and buildings users:

- a better understanding of their CO₂ emissions;
- increased transparency;
- an effective monitoring of progress in reducing emissions via implementation of underlying measures.

In addition it will give Government a better understanding of where emissions reduction potential lies and form the basis for further policy to cut emissions.

Options Considered

The options that have been considered are:

¹ <http://www.communities.gov.uk/planningandbuilding/theenvironment/energyperformance/>

² EPC non-domestic Register

³ http://www.decc.gov.uk/en/content/cms/statistics/analysts_group/analysts_group.aspx

⁴ http://www.decc.gov.uk/en/content/cms/statistics/analysts_group/analysts_group.aspx

- 1. do nothing;
- 2. introduce DECs for commercial buildings on a compulsory basis as soon as is practically possible and enable voluntary take up of DECs in the meantime;
- 3. introduce DECs for commercial buildings on a purely voluntary basis.

There are arguments for and against compulsory and voluntary approaches. Under a voluntary approach, businesses would be encouraged and enabled to obtain and display a DEC. However, take-up is likely to be patchy because commercial organisations would not want to draw attention to buildings that they occupy that have poor energy performance, so it is likely that they would only get a DEC for a building they already know is energy efficient.

We propose introducing DECs for commercial buildings on a compulsory basis by legislating at a suitable opportunity. In the meantime, we would enable the display of DECs on a voluntary basis.

Risks and Uncertainties

Costs of obtaining a DEC: The cost of a DEC is driven by market forces. This is a constantly changing figure. The costs used in this report reflect current market prices at the time of publishing the consultation.

Number of Commercial Buildings: The number of commercial buildings this policy will apply to is not known precisely. The figures used in the report are the latest estimates at the time of publishing the consultation taken from Valuation Office data.

Size of building: For the purposes of the calculations it is assumed that DECs will be obtained only for buildings larger than 1,000m² in line with the current Regulations for public sector buildings. A precise breakdown of building areas was not obtained therefore for the purposes of this calculation an average building area of 3,000m² has been assumed. The sensitivity testing for this calculation will look at the average size of the building at 2,500 m² on the low end and 3,500m² on the high end.

Costs/benefits of implementing the recommendations in DECs

Costs: It is difficult to calculate the costs and benefits to implementing the recommendations in the report as it depends on many factors. The cost of implementing energy efficiency measures is not reflected in the cost calculations. The cost calculations for option 2 only take the cost of obtaining a DEC into account.

Benefits of Option 2: We do not yet have the evidence to suggest what percentage of those who obtain a DEC take up the recommendations in the report thus reducing fuel bills and carbon emissions. Due to this we have made an assumption for the purposes of this consultation that 20% of those that acquire DECs take up some of the recommendations, this was an assumption made in the Regulatory Impact Assessment for the implementation of EPBD.

It should be emphasized that there is a large amount of uncertainty in the benefit estimates for Option 2 and so they should be viewed with considerable caution. They are used for illustrative purposes only.

Risks

For Option 2 the analysis assumes that the measure becomes compulsory in 2010/11 although there is a risk that this happens at a later date. In the meantime the opportunity to apply for DECs on a voluntary basis will be provided.

There is a risk that DEC are obtained but that this does not lead to greater implementation of the recommendations required to reduce fuel bills and save on carbon.

Estimate of Costs for Preferred and Alternative Options

OPTION 1

There are no monetised costs for this option as it proposes to maintain the current regulations without requiring DECs to be extended to commercial sector buildings.

OPTION 2

As mentioned above, the price of a DEC will be set by the market but for the purposes of this calculation the cost of producing a DEC has been assumed to be around £320 for the first year and then £135 for each of the following years (years 2 to 6). The cost is higher in Year 1 because an Advisory Report also has to be produced. Such a report is only required every seven years so the costs in intervening years are lower. These figures have been calculated on the basis of the current price of DECs for public buildings larger than 1,000m².

Costs will be significantly reduced where the organisation concerned is participating in the Carbon Reduction Commitment Energy Efficiency Scheme as they will already be required to collect the information necessary for producing a DEC. The cost for all properties will vary depending on use class as there are different numbers of buildings for each type.

For the purposes of this calculation we have used the figure for the number of commercial buildings over 1,000m² which is 86,000⁵ (rounded: retail 12,000; offices 13,000; warehouses 34,000; 27,000 factories). The costs are calculated over 30 years.

OPTION 3

At this stage it is not possible to determine the likely number of DECs that would be commissioned for commercial buildings under the voluntary approach, therefore the total cost and average annual cost have not be quantified.

Monetised/Quantified Benefits

OPTION 1

There are no monetised benefits for this option as it proposes to maintain the current regulations without requiring DECs to be extended to commercial sector buildings.

OPTION 2

The Certificate is backed up with an Advisory Report (AR). Adopting the recommendations in the AR could significantly reduce the buildings' operating costs and its carbon emissions. The benefits assume that 20% of the people who obtain a DEC implement some of the recommendations. The amount of energy savings from implementing the cost effective recommendations will vary significantly from building to building, but for the purposes of this calculation it has also been assumed that a 5% savings in energy consumption would occur for those who implement measures.

The table below sets out the assumed kWh/m² for the different building types used in the analysis. As noted above in the central case it is assumed that the average area is 3000m².

	Retail	Offices	Warehouses	Industrial
Annual kWh/m ²	273	253	189	107
Average annual kWh per commercial unit	819,000	759,000	567,000	321,000
Annual kWh energy saving	40,950	37,950	28,350	16,050

⁵ Source: Valuation Office Agency. 2009 figures

per unit for those who implement measures (5% of their total energy use)				
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The analysis assumes the following percentage of electricity usage: Retail - 36%, Offices - 54%, Warehouses - 54% and Industrial - 0%.

As we do not have evidence of actual take-up of recommendations at the moment the percentage savings are the same assumptions that were made in the 2007 Regulatory Impact Assessment of the EPBD.

The kWhs saved were converted to carbon equivalent saved by using the emissions factors from DECC's Greenhouse Gas Policy Evaluation and Appraisal⁶. The carbon equivalent savings are valued at the shadow price of carbon for gas and at the EU ETS allowance for electricity⁷.

All values were discounted over 30 years using the discount rate of 3.5%.

OPTION 3

It is not known at this stage how many DECs are likely to be commissioned for commercial buildings under the voluntary approach; therefore the total benefit and average annual benefit have not been quantified.

Sensitivity Analysis

There is a degree of risk and uncertainty attached to the central results. Changes in values of certain key variables can make a considerable difference to the costs and benefits.

Option 2 total (PV) Net Benefits £m with different assumed % of firms that have DECs and take up some of the recommendations

	10%	Central 20%	30%
PV Net Benefit	£24m	£316m	£607

Option 2 total (PV) Net Benefits £m with different assumed % fuel saving for those who take up the recommendations.

	2%	Central 5%	8%
PV Net Benefits	-£34m	£316m	£665m

Option 2 total Net Benefits £m with different assumed average area and different assumed % of firms that have DECs and take up some of the recommendations.

	10% take up and average 2500m ²	20% take up and average 3000m ²	30% take up and average 3500m ²
PV Net Benefits	-£24m	£316m	£753m

The above is the basis of the net benefit range on the option 2 analysis and evidence summary page.

⁶ http://www.decc.gov.uk/en/content/cms/statistics/analysts_group/analysts_group.aspx

⁷ http://www.decc.gov.uk/en/content/cms/statistics/analysts_group/analysts_group.aspx

It is important to note that the above Net benefit numbers do not take account of the extra cost of implementing the energy efficiency measures that provide the estimated monetised benefits.

For the final impact assessment the intention is to improve the analysis in light of evidence derived from the consultation responses and elsewhere.

Non monetised Costs and Benefits

As mentioned above, the non monetised costs and benefits include the following:

- A better understanding of their CO₂ emissions;
- Increased transparency;
- A better understanding of where emissions reduction potential lies and form the basis for further policy to cut emissions; and
- Allow effective monitoring of progress in reducing emissions via implementation of underlying measures.

Consultation Process

This impact assessment accompanies a consultation paper; the consultation period runs between 2 March and 25 May, and is carried out in line with current best practice guidance. We are seeking views on this Impact Assessment and would invite respondents to submit any evidence that may be relevant to the consultation proposals and this Impact Assessment.

Enforcement and Compliance

Trading Standards Officers in local authorities are responsible for enforcement and compliance for the commercial sector. Currently, failure to produce and display a DEC can incur a penalty of £300.

Monitoring and Review

We will review the policy after 2 years by carrying out quantitative research to establish whether the extension of DECs to commercial buildings has led to building occupiers implementing at least some of the recommendations. This research will be done to inform the work on EPBD2 which will need to be implemented by late 2012/ early 2013.

Wider Impacts

Privacy: We have performed a Privacy Impact Screening in accordance with the guidance from the Information Commissioners Office and this leads us to believe that there are no privacy implications. However, we will review this taking into consideration the responses to the consultation.

Competition assessment: Extending DECs to commercial buildings will not produce any competition issues.

Small firms Impact: The proposal will have a positive effect on the SME sector. Almost without exception, firms undertaking domestic energy assessments are sole or two or three practitioner concerns. Owners of commercial properties will bear the cost of obtaining a DEC. However, the certificate is valid for 10 years. Owners would also bear the initial costs of implementing any of the energy saving recommendations accompanying the Certificate. But these costs would be recouped over time.

Legal Aid: The proposal does not have any Legal Aid implications

Environmental Impact: Obtaining a DEC does not have a direct impact on the environment, however if any of the recommendations in the report that comes as part of a DEC are adopted this would reduce carbon emissions and have a positive effect on the environment by reducing climate change

Health Impact: We do not expect this policy to have any adverse effects on health.

Equalities and Social Impact: An Equalities Impact Assessment screening has been completed, covering race, age, health, disability and gender equality issues. Cost savings and improved home thermal comfort could have most benefit if the recommended energy efficiency measures were implemented.

Human Rights: The proposal does not have any impact on human rights.

Rural proofing: We do not expect this policy to have any adverse effects on rural areas.

Specific Impact Tests: Checklist

Use the table below to demonstrate how broadly you have considered the potential impacts of your policy options.

Ensure that the results of any tests that impact on the cost-benefit analysis are contained within the main evidence base; other results may be annexed.

Type of testing undertaken	<i>Results in Evidence Base?</i>	<i>Results annexed?</i>
Competition Assessment	Yes	No
Small Firms Impact Test	Yes	No
Legal Aid	Yes	No
Sustainable Development	Yes	No
Carbon Assessment	Yes	No
Other Environment	Yes	No
Health Impact Assessment	Yes	No
Race Equality	Yes	No
Disability Equality	Yes	No
Gender Equality	Yes	No
Human Rights	Yes	No
Rural Proofing	Yes	No

Annexes

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