

<b>Title:</b> Recast of the Energy Performance of Buildings Regulations  <b>IA No:</b> DCLG 1051  <b>Lead department or agency:</b> Department for Communities and Local Government  <b>Other departments or agencies:</b> N/A	<b>Impact Assessment (IA)</b>			
	<b>Date:</b> 08/11/2012			
	<b>Stage:</b> Final			
	<b>Source of intervention:</b> EU			
	<b>Type of measure:</b> Secondary legislation			
<b>Contact for enquiries:</b> Jonathan Bramhall, 0303 444 1803				

<b>Summary: Intervention and Options</b>	<b>RPC Opinion:</b> GREEN
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Cost of Preferred (or more likely) Option			
Total Net Present Value	Business Net Present Value	Net cost to business per year (EANCB on 2009 prices)	In scope of One-In, Measure qualifies as One-Out?
£266m	£130m	-£14.1m	Yes   OUT

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

The Recast of the Energy Performance of Buildings Directive is an EU measure that must be implemented by 9 January 2013. It builds on the existing Energy Performance of Buildings Directive and is designed to reduce carbon emissions from buildings and increase their energy efficiency. The Recast complements the 2008 Climate Change Act which requires a reduction in carbon emissions by 80% on 1990 levels by 2050. Emissions from buildings account for 40 - 45% of all CO<sub>2</sub> emissions in the UK. Therefore, it is particularly important that carbon emissions from existing buildings are reduced by making them more energy efficient, and that new buildings are designed and built with high levels of energy efficiency.

**What are the policy objectives and the intended effects?**

The policy objective is to implement the recast and in doing so, improve the energy efficiency of buildings and thus reduce CO<sub>2</sub> emissions and lessen the impact of climate change. Implementation of the Directive would also avoid infractions proceedings, fines and reputational risk to the Government

**What policy options have been considered, including any alternatives to regulation? Please justify preferred option (further details in Evidence Base)**

The following options were considered:  
 (1) fully implement the requirements of the Directive  
 (2) do nothing, ie do not implement the Directive.

All costs and benefits have been calculated against a baseline of zero.  
 Option 1 is our preferred option. As this is an EU Directive, option 2 is not tenable.

**Will the policy be reviewed? It will be reviewed. If applicable, set review date:** 01/2018

Does implementation go beyond minimum EU requirements?			No		
Are any of these organisations in scope? If Micros not exempted set out reason in Evidence Base.	<b>Micro</b> Yes	<b>&lt; 20</b> Yes	<b>Small</b> Yes	<b>Medium</b> Yes	<b>Large</b> Yes
What is the CO <sub>2</sub> equivalent change in greenhouse gas emissions? (Million tonnes CO <sub>2</sub> equivalent)			<b>Traded:</b> 0	<b>Non-traded:</b> 0	

*I have read the Impact Assessment and I am satisfied that (a) it represents a fair and reasonable view of the expected costs, benefits and impact of the policy, and (b) that the benefits justify the costs.*

Signed by the responsible SELECT SIGNATORY:  Date: 19 December 2012

# Summary: Analysis & Evidence

# Policy Option 1

## Description:

### FULL ECONOMIC ASSESSMENT

Price Base Year 2012	PV Base Year 2012	Time Period Years 10	Net Benefit (Present Value (PV)) (£m)		
			Low: 237.9	High: 297.8	Best Estimate: 266.1

COSTS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low	0.1	0.8	7.5
High	0.1	0.8	7.5
Best Estimate	0.1	0.8	7.5

#### Description and scale of key monetised costs by 'main affected groups'

There will be a one-off cost to the public sector of £0.05m. There will also be a one-off cost to business of £0.06m. Average annual costs will be £0.42m for the public sector. Average annual costs to businesses will be £0.41m - these are excluded from the domestic One-In-One-Out Equivalent Annual Net Cost to Business calculation since they arise purely from meeting the minimum EU requirement (the EANCB figure for this cost would be £0.36m).

#### Other key non-monetised costs by 'main affected groups'

No costs have been included for installed measures resulting from the Display Energy Certificate, for example, new air-conditioning units or automatic lighting systems. All recommendations are optional and do not have to be implemented

BENEFITS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
Low	0	29.5	245.3
High	0	36.7	305.2
Best Estimate	0	32.9	273.6

#### Description and scale of key monetised benefits by 'main affected groups'

These are cost savings from using permitted exemptions in the Energy Performance of Buildings Directive for certain buildings. This will produce cost savings to business of £14.4 - 18m (average £16m) per year from 2013 by exempting historic buildings, plus £14.2 - 17.8m (average £16m) for Government and the wider public sector, and £0.9m for households.

#### Other key non-monetised benefits by 'main affected groups'

The main non-monetised benefits are likely to be reduced fuel bills for public sector occupiers of buildings that are between 250m<sup>2</sup> and 999m<sup>2</sup>, following investment in measures recommended by the Display Energy Certificate. It is not possible to calculate those costs because investment in such measures by public sector organisations is optional, dependent on funding being made available and because of the very diverse nature, function and location of those buildings.

#### Key assumptions/sensitivities/risks

Number of protected buildings, 374,000 (source: National Heritage); length of an average commercial lease, 5 years (source: British Property Federation); cost of non-domestic EPCs, £800-£1,000 depending on building size and complexity (source: latest market prices); number of public buildings between 500 and 1000m<sup>2</sup> and between 250m<sup>2</sup> and 500m<sup>2</sup>, 9,500 and 12,000 respectively (source: DCLG statistics). The European EANCB (including the costs of meeting minimum EU requirements) is £13.8m.

#### Discount rate (%)

3.5

### BUSINESS ASSESSMENT (Option 1)

Direct impact on business (Equivalent Annual) £m:			In scope of OIOO?	Measure qualifies as
Costs: 0.0	Benefits: 14.1	Net: 14.1	Yes	OUT

## **Evidence Base (for summary sheets)**

The Government recognises the threat posed by climate change and has set a statutory target to reduce all CO<sub>2</sub> emissions by 80% on 1990 levels by 2050. Emissions from buildings account for 40 - 45% of all CO<sub>2</sub> emissions in the UK. Therefore, it is particularly important that carbon emissions from existing buildings are reduced by making them more energy efficient, and that new buildings are designed and built with high levels of energy efficiency.

The main rationale for Government intervention is the obligation to implement the recast of the Energy Performance of Buildings Directive. Intervening would also help overcome the problem that the energy market is failing to deliver cost-effective energy efficiency improvements to buildings at a fast enough rate. The reasons for the lack of investment include:

- lack of information on opportunities;
- short payback periods required if there is no perceived increase in asset value; and
- landlord/tenant issues concerning who invests and who benefits.

## **Background: The original Energy Performance of Buildings Directive**

The Energy Performance of Buildings Directive was adopted in 2002 by the European Parliament and the Council. It is designed to improve the energy efficiency of buildings and thus reduce carbon emissions, and lessen the impact of climate change. Full implementation in England and Wales was completed on 1 October 2008.

Under the terms of the Directive, Member States are required to ensure:

- an Energy Performance Certificate is produced whenever a building is sold, constructed or rented out. The Energy Performance Certificate shows the energy efficiency of a property and includes recommendations on how it can be improved;
- an Energy Performance Certificate (known as a Display Energy Certificate in England & Wales) is produced for public buildings over 1,000m<sup>2</sup>. The Display Energy Certificate shows the actual running costs of the building and must be displayed in a prominent place;
- air conditioning installations above a certain size are inspected every 5 years;
- boilers are either regularly inspected or an advice regime is put in place.

Energy Performance Certificates are lodged on the domestic or non-domestic Energy Performance Certificate registers as appropriate. Statistics on the number of Energy Performance Certificates produced as of 2 August 2012 are:

- 8.1 million Energy Performance Certificates for dwellings;
- 357,000 Energy Performance Certificates for non domestic buildings;
- 124,000 Display Energy Certificates for buildings occupied by a public authority.

## **Recast of the Energy Performance of Buildings Directive**

The European Parliament and Council adopted a recast of the Energy Performance of Buildings Directive in 2010. The key provisions of the recast are:

- Minimum energy performance requirements to be set for all new and refurbished buildings and compared against requirements calculated in accordance with cost-optimal requirements (Article 5);
- All new buildings developed from 2021 to be nearly zero energy buildings, with an earlier target date of 2019 where the building will be owned and occupied by a public authority (Article 9);
- Property advertisements in commercial media to include details of the Energy Performance Certificate rating where available (Article 12);
- Display Energy Certificates to be issued and displayed in buildings larger than 500m<sup>2</sup> (current threshold is 1,000m<sup>2</sup>) that are occupied by a public authority and frequently visited by the public. This threshold will fall to 250m<sup>2</sup> after 5 years (Article 13);
- Energy Performance Certificates to be displayed in commercial premises larger than 500m<sup>2</sup> that are frequently visited by the public, and where one has previously been issued on the construction, sale or rent of the building (Article 13);

**Assumptions about likely costs and benefits are set out under the relevant Article heading.**

**For ease of reference, the table below cross-references those Articles where we estimate that there will be a cost or benefit**

<b>Brief summary of the Article</b>	<b>Who costs/benefits fall on (if applicable)</b>	<b>Scale of costs/benefits (if applicable)</b>	<b>Page number</b>
Article 1: subject matter	N/A	N/A	
Article 2: definitions	N/A	N/A	
Article 3: Adoption of methodology for calculating the energy performance of buildings	N/A	N/A	
Article 4: Setting of minimum energy performance requirements	Public sector, business, households	Total annual savings of £33m (£0.9m savings to households, £16m each to public sector and business	9
Article 5: calculation of cost-optimal levels of minimum energy performance requirements	Government	£40k one-off cost £2,500 annual recurring costs	10
Article 6: New buildings	Government, business	£2-10k one-off cost to Government. Annual cost of £409,200 to business	14
Article 7: Existing buildings	N/A	N/A	
Article 8: Technical building systems	N/A	N/A	

Article 9: Nearly zero-energy buildings	N/A	N/A	
Article 10: Financial incentives and market barriers	N/A	N/A	
Article 11: Energy Performance Certificates	Government	£1 - 5k one-off cost	17
Article 12: Issue of Energy Performance Certificates	Public sector (see below)		
DEC updated every 10 years	Public sector	£0.05m one-off cost £0.43m annual recurring cost	17
Article 12: Issue of Energy Performance Certificates	Industry	£60,000 one-off cost	17
Article 13: Display of Energy Performance Certificates	N/A	N/A	
Article 14: Inspection of heating systems	N/A	N/A	
Article 15: Inspection of air-conditioning systems	N/A	N/A	
Article 16: Reports on the inspection and heating of air-conditioning systems	N/A	N/A	
Article 17: Independent experts	N/A	N/A	
Article 18: Independent control system	N/A	N/A	
Article 19: Review	N/A	N/A	
Article 20: Information	N/A	N/A	
Article 21: Consultation	N/A	N/A	
Article 22: Adaptation of Annex 1 to technical progress	N/A	N/A	
Article 23: Exercise of delegation	N/A	N/A	
Article 24: Revocation of the delegation	N/A	N/A	
Article 25: Objections to delegated acts	N/A	N/A	
Article 26: Committee procedure	N/A	N/A	
Article 27: Penalties	N/A	N/A	
Article 28: Transposition	N/A	N/A	
Article 29: Repeal	N/A	N/A	
Article 30: Entry into force	N/A	N/A	
Article 31: Addressees	N/A	N/A	

## Implementation of the Recast

## General

This Impact Assessment considers the requirement of each Article in turn, explains how we propose to implement that requirement in domestic legislation, and estimates the costs and benefits associated with each Article.

In accordance with Government policy, in implementing the Recast we do not propose to go beyond the minimum requirements.

The IA considers whether, and if so, the extent to which, the regulations that implemented the original Directive went beyond the minimum requirements, ie introduced goldplating. Where requirements were goldplated, this is noted and the IA describes the action we propose taking as a result.

A consultation exercise on a draft of the Recast Directive was held in 2009

**([www.communities.gov.uk/publications/planningandbuilding/recastepbdconsultation](http://www.communities.gov.uk/publications/planningandbuilding/recastepbdconsultation))**

A summary of responses to that consultation was published in March 2010

**([www.communities.gov.uk/publications/planningandbuilding/energyperformanceconresponse](http://www.communities.gov.uk/publications/planningandbuilding/energyperformanceconresponse))**

The Recast was adopted in May 2010. A further consultation was not held because Ministers decided:

- in line with Government policy, we are only implementing the minimum requirements of the Directive, ie none of the provisions are being gold-plated
- we wanted to minimise the burden on stakeholders of needing to respond to multiple consultations.

### Article 1 – subject matter

This Article describes the purpose of the Directive and explains its requirements. **It does not impose any increased costs or burdens on Business, the consumer or Government.**

### Article 2 – definitions

This Article defines a number of terms that are used in the Directive. **It does not impose any increased costs or burdens on Business, the consumer or Government.**

### Article 3 – adoption of a methodology for calculating the energy performance of a building

This Article provides that Member States shall apply a methodology for calculating the energy performance of buildings in accordance with the common general framework set out in Annex 1 of the Directive. The aspects that must be taken into account by the methodology required for the Recast are virtually the same as for the existing Directive.

The only difference is a requirement to include a numeric indicator of primary energy use on Energy Performance Certificates and Display Energy Certificates. A numeric indicator of primary energy use is already calculated by the software used to assess the energy performance of buildings in England & Wales. All that needs to be done to comply with this Article is to include that data on energy certificates. This is a very minor change with a de minimis cost to Government. The likely cost is so small that it is not possible to quantify it.

Therefore, **this Article does not impose any increased costs or burdens on business, consumers, or Government.**

#### Article 4 – setting of minimum energy performance requirements

Article 4 requires Member States to ensure that the minimum energy performance requirements for buildings referred to in Article 3 are set with a view to achieving cost-optimal levels of performance. Minimum energy performance requirements are set in Building Regulations, for which separate Impact Assessments are prepared. The Government consulted earlier in 2012 on proposals for minimum energy performance requirements (Part L consultation stage Impact Assessment). No decisions have been taken on those proposals. The cost of doing this is considered further in relation to Article 5.

#### Goldplating

Article 4 also includes a list of buildings that Member States may choose to exempt from the requirement to obtain an EPC. The list is virtually the same as in the existing Directive. When the current Directive was implemented in 2008, the then Administration decided to transpose some, but not all of the exemptions into domestic legislation. The following permitted exemptions were **not** taken forward:

- buildings and monuments officially protected as part of a designated environment or because of their special architectural or historic merit;
- building which are used for religious activities and sometimes as places of worship;
- non-residential agricultural buildings which are in use by a sector covered by a national sectoral agreement on energy performance;
- stand-alone dwellings with a total useful floor area of less than 50m<sup>2</sup>

It has been Government policy since 2010, that EU Directives should not be goldplated when transposed into domestic legislation, ie the legislation should not go further than the minimum requirements.

#### Removal of goldplating

We have, therefore, decided to use the requirement to implement the Recast as an opportunity to remove the goldplating introduced by the previous Administration in respect of permitted exemptions. All of the exemptions listed at Article 4 will be transposed into domestic legislation. Therefore, with effect from 9 January 2013, the following types of buildings will not require an EPC:

- buildings and monuments officially protected as part of a designated environment or because of their special architectural or historic merit in so far as compliance with certain energy efficiency requirements would unacceptably alter their character or appearance;
- buildings used as places of worship and for religious activities;
- temporary buildings with a planned time of use of two years or less, industrial sites, workshops and non-residential agricultural buildings with low energy demand and non-residential agricultural buildings which are in use by a sector covered by a national sectoral agreement on energy performance,
- residential buildings which are intended to be used less than four months of the year;

- stand-alone buildings with a total useful floor area of less than 50 m2.

## Impact of exempting these buildings

### *Buildings and monuments*

Approximately 374,000 buildings in England have been listed by National Heritage ([www.english-heritage.org.uk/caring/listing/listed-buildings](http://www.english-heritage.org.uk/caring/listing/listed-buildings)). While listing a building is not the same as issuing a preservation order, this figure does give a proxy for the total number of buildings that come within the first category noted above, i.e. buildings officially protected as part of a designated environment or because of their special architectural or historic merit. National Heritage note that “an entry can sometimes include more than one building – such as a terrace”, ie the actual number of buildings is likely to be more than 374,000. However, to ensure the analysis takes a conservative view of cost savings, we ignore this possibility for the purposes of estimating cost savings.

In addition, just under 20,000 buildings have been listed as ancient monuments ([www.english-heritage.org.uk/caring/listing/listed-buildings](http://www.english-heritage.org.uk/caring/listing/listed-buildings)). Again, to ensure the analysis takes a conservative view of cost savings, we exclude these buildings on the basis that it is impossible to identify a proportion of these as being under business, individual or governmental use.

The Heritage Gateway ([www.heritagegateway.org.uk/gateway/](http://www.heritagegateway.org.uk/gateway/)) database reports that of the 374,000 buildings that have been listed by National Heritage, 193,512 are recorded as being “dwellings”. A further 90,053 buildings are recorded under categories for Civil, Commemorative, Defence and Education. This figure is used as an estimate of the number of listed buildings used by Government.

These estimates imply that around 51.7% of listed buildings are domestic, 24.1% public non-domestic, and the remaining 24.3% private non-domestic.

An EPC would only be required for any of these buildings on their sale or rent, ie if the building continues to be owned/occupied by the same individual or organisation then an EPC will not be required.

The average length of time that an owner-occupier lives at the same property is 11 years ([www.ons.gov.uk/ons/datasets-and-tables/index.html?pageSize=50&sortBy=none&sortDirection=none&newquery=number+of+years+at+same+property&content-type=Reference+table&content-type=Dataset](http://www.ons.gov.uk/ons/datasets-and-tables/index.html?pageSize=50&sortBy=none&sortDirection=none&newquery=number+of+years+at+same+property&content-type=Reference+table&content-type=Dataset))

Not all listed buildings will be domestic properties. For those which are non-domestic buildings, it is common practice to rent them out for a fixed term. Recent research shows that the typical length of an average commercial lease is about 5 years

([www.bpf.org.uk/en/files/bpf\\_documents/commercial/BPF\\_IPD\\_Annual\\_Lease\\_Review\\_2012.pdf](http://www.bpf.org.uk/en/files/bpf_documents/commercial/BPF_IPD_Annual_Lease_Review_2012.pdf))

There is no reason to suppose that the level of turnover in a listed building is likely to be any different.

On that basis, it could reasonably be expected that there is a change of ownership or occupation in about 10% of dwellings and 20% of non-domestic buildings every year. That would mean:



- 19,351 dwellings that are listed buildings are sold or rented out every year;
- 18,010 non domestic public buildings are sold or rented out every year;
- 18,087 non domestic private buildings are sold or rented out every year.

Total: 55,448

The average cost of a domestic EPC is £50. The average cost of a non-domestic EPC typically will range between £800 – 1,000.

These figures suggest that exempting listed buildings from the requirement to have an EPC could result in annual savings of around £0.9 million for domestic properties, between £14.2 and £17.8 million (average £16 million) for public non-domestic properties, and between £14.4 and £18 million (average £16 million) for private non-domestic properties.

The potential savings on non-domestic properties are considerably higher than in the previous version of this Impact Assessment. That is because we had previously assumed the average length of a commercial lease was 9 years. However, evidence from the British Property Federation survey referred to above shows the actual average lease length is about 5 years.

**Total annual savings will be about £33 million per year.**

*Buildings used as places of worship and for religious activities*

This is a very broad category and covers far more types of buildings than churches etc. As noted above, previously only buildings which were used **primarily or solely** as a place of worship or for religious activities had been exempted from the requirement to obtain an EPC. However, in line with Government policy to remove goldplating wherever possible, we are adopting the wording used in the Directive and extending the exemption to also cover buildings that are used for that purpose but where it is not necessarily their primary or sole use, ie buildings which are used primarily for other purposes but occasionally as places of worship and for religious activities.

The main source of data on numbers of religious buildings is from a unit based at Manchester University called *British Religion in Numbers* (BRIN). They have collated statistics on the number of buildings used as places of worship ([www.brin.ac.uk/news/2011/places-of-worship-in-england-and-wales-1999-2009](http://www.brin.ac.uk/news/2011/places-of-worship-in-england-and-wales-1999-2009)). The BRIN figures do not include Church of England buildings but that is not relevant because such buildings would only be used solely as a place of worship, ie they are covered by the existing exemption.

The BRIN data includes the numbers of buildings used by a range of other denominations and religions. In all cases, given the formal status of each of the denominations listed, it is probable that they would be used solely as places of worship, ie they are covered by the existing exemption.

It has not been possible to identify the number of buildings which are likely to be exempt from the requirements of the Directive as a result of extending the exemption. This is not surprising as by definition such buildings are used primarily for other purposes and their occasional use for religious activities is unlikely to be a matter of public record.

**For these reasons, it is not possible to quantify the impact of extending this exemption**

*Temporary buildings with a planned time of use of two years or less, industrial sites, workshops and non-residential agricultural buildings with low energy demand*

As with the previous exemption, this is a very broad range of buildings. Figures are not available on the number of any of the buildings in this category. It should be noted that the scope of this exemption has not changed. All of these buildings are currently exempt from the requirement to have an EPC.

### **Because of the lack of information, it is not possible to quantify the impact of this exemption**

#### *Residential buildings which are intended to be used less than four months of the year*

This exemption was the subject of a separate Impact Assessment ((RPC-12-CLG-1255(2) that was completed following a decision by the Red Tape Challenge Unit in the Cabinet Office to exempt this type of building from the requirement to have an Impact Assessment.

That Impact Assessment was given a Green rating by RPC in an opinion dated 11 June 2012. The IA estimated that the exemption would affect about 28,000 buildings and result in a **net annual saving of £0.3 million. However this is excluded from the monetised benefits in this IA to avoid double-counting.**

#### *Stand-alone buildings with a total useful floor area of less than 50 m<sup>2</sup>*

According to the *English Housing Survey*, about 11% of dwellings in England have a total useful floor area of less than 50m<sup>2</sup>. There are approximately 23 million dwellings in England so this equates to about 2.5 million dwellings ([www.communities.gov.uk/documents/statistics/pdf/1750754.pdf](http://www.communities.gov.uk/documents/statistics/pdf/1750754.pdf)).

However, the exemption only applies to **stand-alone** dwellings below that size, not all dwellings smaller than 50m<sup>2</sup>.

Figures for this sub-category of dwellings are not available. It is highly likely that the majority of dwellings smaller than 50m<sup>2</sup> are flats, either purpose -built or conversions and are not therefore exempt.

**There is no reliable estimate of the number of dwellings that are both stand-alone and smaller than 50m<sup>2</sup>. Therefore it is not possible to quantify the impact of this exemption**

### Article 5 – calculation of cost optimal levels of minimum energy performance requirements

Article 5 provides that the Commission shall establish by 30 June 2011 a comparative methodology framework for calculating cost-optimal levels of minimum energy performance requirements for buildings and building elements. The Commission did not in fact produce a framework by that date. The framework was finally published on 21 March 2012. The purpose of the comparative methodology framework is to enable Member States to calculate minimum energy performance requirements at levels that are cost-optimal and enable comparisons to be made between the relative performance of Member States. **This Article does not impose any increased costs or burdens on business or consumers.**

It will result in a **modest one-off cost to Government of £40k**. This is explained in more detail below.

## *Cost-optimal methodology*

Cost-optimality involves a far more precise calculation of costs and benefits than cost-effectiveness. Minimum energy performance requirements are cost-optimal when the cost of investment maximises the value of any benefits that will result. Further investment may deliver additional benefits but only at a cost which exceeds investment. A lower level of investment would result in a disproportionate decrease in benefits.

The cost-optimal methodology will not replace existing national methodologies currently used to calculate minimum energy performance requirements. It will sit alongside them and be used to compare the relative performance of Member States.

The framework will require Member States to:

- define reference buildings that are representative of their building stock in terms of functionality, geographic location and climate conditions;
- define energy efficiency measures to be assessed for the reference buildings;
- assess the final and primary energy need of these reference buildings, calculated in accordance with relevant European standards; and
- calculate the costs of the energy efficiency measures during the expected economic lifecycle of the reference buildings.

Member States are required to report to the Commission all input data and assumptions used in those calculations and the results of the calculations. The first report is to be submitted by 30 June 2012 and at least every five years thereafter. As noted above, the Commission were late in establishing the cost-optimal methodology framework. As a result, the deadline for Member States to submit a report has been put back until 21 March 2013.

In England & Wales, we already:

- define representative reference buildings;
- define energy efficiency measures to be assessed for those buildings;
- assess the final and primary energy needs of those buildings.

Therefore, the only new requirement will be to calculate the costs of the energy efficiency measures for each of the representative reference buildings with a view to achieving cost-optimal levels of performance.

This will be a one-off calculation with further calculations only required when changes are made to the national methodologies. Amendments to the national standards are generally made about every 4 years.

A contract has been awarded to carry out this work. The contract is for 40 days of a consultant's time at a day rate of £1, 000. Therefore the total cost of this work will be £40k. **This will be a cost to Government.**

Any future calculations of the costs of the energy efficiency measures for each of the representative reference buildings, which will only be needed whenever the standards are updated, are likely to cost less with estimated **annual recurring costs to Government of about £2,500**. This figure is based on a contractor spending about 10 days on the work every four years with a day rate of £1,000.

This expenditure will not result in any net benefit to Government. However, benefits will accrue to the construction industry and their clients as the cost-optimal methodology will enable an

assessment to be made of the level of investment in energy efficiency improvements that will deliver the maximum level of benefits at the lowest cost. It is not possible to quantify those benefits because of the size and very diverse nature of the construction industry.

## Article 6 – new buildings

This Article requires Member States to ensure that new buildings meet the minimum energy performance requirements set in accordance with Article 4.

**This Article does not impose any increased costs or burdens on consumers.**

It will result in **some costs to Government and business** which are detailed below

The Article provides that, before construction of a building starts, the technical, environmental and economic feasibility of high efficiency alternative systems is considered and taken into account. The results of that analysis must be documented and retained for verification purposes. The Article proposes that the following high efficiency alternative systems should be considered, if available, but other systems may also be considered:

- decentralised energy supply systems based on renewable energy;
- cogeneration;
- district or block heating or cooling, especially where it is based on renewable energy;
- heat pumps.

The analysis of alternative systems may be carried out for individual buildings, for groups of similar buildings, or for common typologies of buildings in the same area. There is no obligation to adopt any of those systems, just to consider them.

In England & Wales, an analysis of alternative systems is already undertaken in respect of buildings larger than 1,000m<sup>2</sup>. The analysis is of common typologies of buildings in the same area. In future, this analysis will be extended to all new buildings, regardless of size. In addition, the analysis will need to be documented and retained for verification purposes.

So, the only changes introduced by this Article are:

- the analysis of alternative building systems to be carried out for all new building developments smaller than 1,000m<sup>2</sup>;
- the analysis in every case must be documented; and
- the documents retained for verification purposes.

If collective heating or cooling systems are being considered, the analysis may be carried out for all buildings connected to the system in the same area.

About 40% of new building developments already have to go through this procedure in order to comply with local planning conditions which require some of the energy demand from the new buildings to be met from on-site renewable energy sources (source: survey of local authorities by Zero Carbon Hub). This is more demanding than the requirements in the Recast which is just to consider alternative systems.

In England & Wales, we intend adding a facility to the National Calculation Methodology output reports which will enable a developer to declare that an analysis of high energy alternative systems has been carried out and documented before work starts and indicate where the analysis can be accessed for verification purposes. For dwellings, the amount of work required

is likely to be very small and we estimate that it would involve at most about 60 minutes of a person's time per typology. In arriving at this estimate, we have taken the following factors into account:

- The Recast does not require that any of the options considered are taken forward – merely that there is evidence they have been considered, so this is a very light-touch system which will not involve much additional work;
- Government already sets challenging energy standards for new buildings through Part L of the Building Regulations. This requires designers to consider the range of options available to them in order to ensure that they deliver a solution which meets the expectations of the building developer and Part L requirements. Those options would include decentralised renewable sources, district/block heating, combined heat and power, and heat pumps;
- The new requirement is not onerous; it simply requires designers to formally record a brief summary of the process they will have to go through anyway to meet Part L requirements and their client's expectations.

In order to test the validity of these assumptions, we consulted members of the Building Regulations Advisory Committee. BRAC is a statutory body whose purpose is to provide advice to Government on issues that have an impact on new buildings and buildings that undergo major refurbishment. BRAC membership covers all sectors in the construction industry. As expected, there were a range of views. However, there was support for our assumption that, given the light touch approach envisaged, our estimate of the amount of time involved was broadly correct. Our view is also supported by the Scottish Government who have made a similar estimate of the amount of time involved and for similar reasons.

On average we assume there will be two typologies per development. This assumption has been checked and confirmed with a major building company. Feedback from organisations that sit on the BRAC suggests that the declaration is likely to be made by an Architect or similar.

An architect's hourly rate ranges between £20 – 24 per hour. We have identified two sources for this hourly rate. The first source is the Annual Survey on Hours and Earnings which quotes an average weekly salary for individuals in professional occupations of £720. This works out at £20 per hour based on a standard 35 hour week. ([www.ons.gov.uk/ons/rel/ashe/annual-survey-of-hours-and-earnings/2011-provisional-results--soc-2010--stb---ashe-results-2011--soc-2010-.html#tab-Earnings-by-occupation](http://www.ons.gov.uk/ons/rel/ashe/annual-survey-of-hours-and-earnings/2011-provisional-results--soc-2010--stb---ashe-results-2011--soc-2010-.html#tab-Earnings-by-occupation)).

The second source is the Royal Institute of British Architects who carry out an annual survey of architects' earnings. In 2012, they found that that an architects' average annual salary was £41,100 ([www.ribajournal.com/pages/riba\\_survey\\_2012\\_183647.cfm](http://www.ribajournal.com/pages/riba_survey_2012_183647.cfm)). Allowing for holidays etc, the average number of weeks worked per year is 48. This figure multiplied by the average annual working week of 35 hours suggests that the average number of hours worked in a year is 1,680. On that basis, an annual salary of £41,100 produces an hourly rate of £24.

As noted above, there are an average of two typologies per housing development so the total amount of time needed to carry out the assessment and record it would be 2 hours at a rate of £20 – £24 per hour or an hourly average of £22.

Data on the number of new housing developments per year is available from the Housing Market Report published by the National House Building Council ([www.nhbc.co.uk/Builders/ProductsandServices/InformationProducts/HousingMarketReport/](http://www.nhbc.co.uk/Builders/ProductsandServices/InformationProducts/HousingMarketReport/)).

The latest edition shows that the average number of new housing developments per year is approximately 7,200 comprising around 100,000 new housing units which suggests an average of 13 or 14 housing units per development.

As noted above, about 40% of developments already have to include an element of on-site renewables – which goes further than just considering alternatives. So, while we estimate that additional costs will only fall on the remaining 60% of developments, in practice it is likely to be considerably less but source data is not available to verify this. This equates to about 4,300 developments comprising approximately 60,000 new domestic units. If we assume that there are an average of 2 typologies per development (a reasonable assumption as there are only about 13 or 14 units per development) and a cost of £22 per typology, that equates to a cost of £44 per development. The total cost (4300 x £44) per year would therefore be £189,200.

On the non-domestic side, there are two data sources for the number of new buildings each year. The first source is the Building Research Establishment non-domestic stock model, which estimates that approximately 8 million square metres of floor space is added each year. The second source is a survey of local authority building control departments ([www.communities.gov.uk/publications/planningandbuilding/surveybuildingcontrolrpt](http://www.communities.gov.uk/publications/planningandbuilding/surveybuildingcontrolrpt)).

That survey estimates that approximately 10,000 new non-domestic units are developed each year. However, the survey was published in 2008 and covers the period 2005-6, a time when the construction industry was booming. The same survey estimates almost 15 million square metres of floor space was built in 2005-6; approximately double the more recent estimates contained in the Building Research Establishment non-domestic stock model referred to above. This suggests that the current number of new non-domestic units built each year is nearer to 5,000 rather than 10,000. As with dwellings, many of these developments will have to include on-site renewables as a condition of planning permission, so the actual number that will have to go through the process of considering alternatives is likely to be less. However, it is not possible to verify this.

For non-dwellings, more time is likely to be required to declare that an analysis of high energy alternative systems has been carried out and documented before work starts and indicate where the analysis can be accessed for verification purposes. We estimate that the amount of time involved would be a maximum of 2 hours per development. An Architect's hourly rate is between £20 – 24 or an average of £22 (source: [www.ons.gov.uk/ons/rel/ashe/annual-survey-of-hours-and-earnings/2011-provisional-results--soc-2010-stb---ashe-results-2011--soc-2010-.html#tab-Earnings-by-occupation](http://www.ons.gov.uk/ons/rel/ashe/annual-survey-of-hours-and-earnings/2011-provisional-results--soc-2010-stb---ashe-results-2011--soc-2010-.html#tab-Earnings-by-occupation) and [www.ribajournal.com/pages/riba\\_survey\\_2012\\_183647.cfm](http://www.ribajournal.com/pages/riba_survey_2012_183647.cfm)). On non-domestic building projects, there is normally only one typology per development. Therefore the cost per development is £44.

On that basis, the total cost of this requirement for non-domestic buildings would be £220,000 (5000x£44).

**The total cost for both domestic and non-domestic buildings per year would therefore be approximately £409,200.**

The software will need to be updated to cover new buildings smaller than 1,000m<sup>2</sup> and to enable the appropriate verification documentation to be retained. **This will be a one-off cost to Government. The cost is estimated at between £2,000 - £10,000** assuming a day rate of £1,000 and the project taking between 2 – 10 days to complete.

Benefits will accrue to the construction industry and their clients as the cost-optimal methodology will enable an assessment to be made of the level of investment in energy efficiency improvements that will deliver the maximum level of benefits at the lowest cost. It is not possible to quantify those benefits because of the size and very diverse nature of the construction industry.

## Article 7 – existing buildings

Article 7 provides that when an existing building undergoes a major renovation, at least one of the following must be upgraded in order to meet the minimum energy performance requirements set under Article 4 in so far as it would be technically, functionally and economically feasible to do so. The:

- building as a whole and/or;
- renovated part of the building; and/or
- renovated building element.

**This Article does not impose any increased costs or burdens on business, consumers or Government.**

Existing provisions in the Building Regulations 2010 (Regulation 23) are sufficiently wide to meet the requirement in the Recast that when a building undergoes a major renovation, the renovated building element must be upgraded in order to meet the minimum energy performance requirements set under Article 4. Therefore, further changes to the domestic legislation to comply with this Article are unnecessary. The Regulations refer to “thermal element” rather than “building element” but for the purposes of the Regulations, the two terms have the same meaning.

## Article 8 – technical building systems

This Article provides that system requirements shall be set for the installation, dimensioning, and adjustment and control of technical building systems that are installed in existing buildings, in order to optimise their energy use. **This Article does not impose any increased costs or burdens on business, consumers or Government.**

The provisions of this Article are already a requirement in England & Wales through Regulation 44 of the Building Regulations which requires the commissioning of fixed building services. Further changes to the Building Regulations to comply with these provisions are unnecessary.

## Article 9 – Nearly zero energy buildings

Article 9 requires Member States to ensure that:

- after 31 December 2018, all new buildings that are occupied and owned by a public authority, are nearly zero-energy buildings; and
- by 31 December 2020, all other new buildings are nearly zero-energy buildings.

A **nearly zero energy building** is defined as meaning “a building that has a very high energy performance..... The nearly zero or very low amount of energy required should be covered to a very significant extent by energy from renewable sources produced on-site or nearby”.

In stating that that the energy required should be covered to a very significant extent from renewables, the Commission are not imposing an obligation on Member States to ensure this happens. In this context, the word 'should' is an aspirational or permissive term which means that where possible and subject to economic and other considerations, developers are encouraged to use renewables as the main source of energy supply in new buildings. It does not mean that the main source of energy must come from renewables.

The Recast provides that Member States may decide not to apply these requirements in specific and justifiable cases where the cost-benefit analysis over the economic lifecycle of the building in question is negative.

The requirement in respect of new buildings occupied and owned by a public authority means that any such buildings which obtain planning permission 1 January 2019 will be required to meet the definition of nearly-zero energy buildings. Similarly, all other new buildings that obtain planning permission from 1 January 2021 will be required to meet the definition.

The Directive does not specify very high energy performance but sets out a process for doing so (Annex 1 of the Recast of the Energy Performance of Buildings Directive). Similarly to the approach for minimum energy performance requirements in Article 4, any specification of high energy performance will be set out in Building Regulations and subject to separate Impact Assessments.

#### Article 10 – Financial incentives and market barriers

This Article requires Member States to identify the most appropriate financial and other instruments that would improve the energy performance of existing buildings and support the transition to nearly zero-energy buildings. **This Article does not impose any increased costs or burdens on business, consumers or Government.**

Details of fiscal instruments, both existing and proposed, are to be submitted to the Commission by 30 June 2011 and every 3 years thereafter. There is no requirement to create any new fiscal instruments.

In England & Wales, the most relevant fiscal instruments that are currently in place are the Carbon Emissions Reduction Target and the Community Energy Savings Programme. In future, it will be the Green Deal and the Energy Company Obligation.

Under the Carbon Emissions Reduction Target, energy suppliers are required to meet carbon-saving targets by encouraging households to take-up a wide range of energy efficiency measures. The main focus of investment is on providing subsidies to promote measures, such as loft insulation, cavity wall insulation and high-efficiency lights and appliances, which can all make a real difference to consumer bills and cutting CO<sub>2</sub>;

The Community Energy Savings Programme is designed to enable the lowest income domestic consumers to reduce their energy consumption and cut their fuel bills and carbon emissions. It places an obligation on energy suppliers and electricity generators to meet a CO<sub>2</sub> reduction target by installing energy efficiency measures in homes and deliver around £350m of energy savings measures in some of the country's poorest communities;

Under the Green Deal, Government will establish a framework to enable private firms to offer consumers energy efficiency improvements to their homes, community spaces and businesses at no upfront cost, and recoup payments through a charge in installments' on the energy bill.



The Energy Company Obligation is designed to underpin the Green Deal and focus particularly on those householders (e.g. the poorest and most vulnerable) and those types of property (e.g. the hard to treat) which cannot achieve financial savings without a measure of support.

### Article 11 – Energy Performance Certificates

This Article requires Member States to establish a system of certification of the energy performance of buildings.

**This Article will result in a one-off very modest cost to Government** which is detailed below.

The Register will be developed so that it automatically issues the Energy Performance Certificate with the necessary content. As a result, **it does not impose any increased costs or burdens on business or consumers.**

A system of certification is already in place by virtue of the existing Energy Performance of Buildings Directive. At present, an Energy Performance Certificate in England & Wales contains an assessment of the energy performance of the building to which it relates, includes information about minimum energy performance requirements, and includes a set of cost effective recommendations to improve the energy efficiency of the property.

The provisions in the Recast build on the current requirements. Once it has been implemented, Energy Performance Certificates will as a minimum also need to contain the following information:

- recommended cost-effective measures, which must be technically feasible for the building to which it relates, that could be carried out in connection with a major renovation of the thermal elements, controlled fittings or fixed building services;
- how the owner or tenant can obtain more detailed information about the building's energy efficiency and cost-effectiveness of the recommendations;
- the steps that need to be taken to implement the recommendations.

Implementing these requirements will require amendments to the standard calculation software packages (Standard Assessment Procedure for dwellings and the Simplified Building Energy Model). This is a **one – off cost that will be borne by Government. The cost is estimated at between £1,000 - £5,000**, assuming a day rate of £1,000 and the project lasting between 1 – 5 days.

Energy Assessors will not require any additional training to cover these enhancements as they will be produced automatically by the software.

### Goldplating

#### *Attachment of Energy Performance Certificate to estate agent's 'written particulars'*

The Directive was goldplated by a requirement that the front page of an Energy Performance Certificate must be attached to an estate agent's 'written particulars'. The term 'written particulars' refers to the document produced by estate agents which describes the property that

is being offered for sale or rent. This requirement was introduced to help ensure potential buyers or tenants are made aware of the existence of a Green Deal and to improve levels of compliance with the requirement to obtain an EPC.

However, there are already adequate measures in place to ensure buyers or tenants are alerted to the existence of a Green Deal. A person acting on behalf of the seller or landlord, usually an estate agent, must be satisfied that an EPC has been commissioned before marketing a property for sale or rent and the seller or landlord is obliged to ensure that an EPC is made available to prospective buyers or tenants. On compliance, we believe the requirement to attach the EPC is no longer needed to improve compliance because the Recast introduces a requirement for all property advertisements to include the EPC rating where one is available, so it will be very clear whether or not an EPC for a particular property has been produced.

**Therefore, we intend to remove this goldplated requirement from the regulations.**

### National registers

When the current Energy Performance of Buildings Directive was implemented in 2008, the then Government decided to go further than the basic requirement that an Energy Performance Certificate should be produced on the construction, sale or rent of a building. In addition to that minimum requirement, it was also decided (in 2007) to establish domestic and non-domestic national registers (covering England & Wales) and make it mandatory for all Energy Performance Certificates and Display Energy Certificates to be lodged on the appropriate register. Since April 2012, it has been mandatory to lodge air-conditioning inspection reports on the non-domestic register.

The registers were set up to provide added value to consumers and demonstrate compliance with the requirements of EPBD by:

- providing a central repository of all Energy Performance Certificates, Display Energy Certificates and air-conditioning inspection reports;
- demonstrating to the European Commission that the requirements with regard to energy certification and inspection of air-conditioning systems had been complied with. Without such evidence, there was a risk that the Commission would launch infraction proceedings;
- facilitating enforcement action by Trading Standards Officers where a property does not have the appropriate certificate or report;
- enabling consumers to check that the document they have been given is genuine;
- allowing for duplicates to be issued in the event a certificate or report is lost

The Registers are funded through a levy on each Energy Performance Certificate, Display Energy Certificate and air-conditioning inspection report. Currently, the levy is £1.15 per domestic Energy Performance Certificate and £5.36 for each non-domestic Energy Performance Certificate, Display Energy Certificate and air-conditioning inspection report.

The reasons for establishing the registers remain valid. In addition, the registers are now used to directly support current Government policy on the Green Deal, Feed-in-Tariffs and buildings in the private rented sector that have poor levels of energy efficiency:

- green deal advisory reports will be lodged on the registers;
- the data stored on the registers will be used to help administer the Feed-in-Tariff scheme;

- the registers will be used to support the prohibition from 2018 (introduced by the Energy Act 2011) on any property in the private rented sector with an Energy Performance Certificate rating of F or G from being rented out.

**We intend to retain this element of goldplating because it supports the Green Deal and wider policy on energy efficiency**

*Requirement on estate agents to ensure Energy Performance Certificate has been commissioned*

The Directive was further goldplated by the introduction of a requirement on estate agents to satisfy themselves that an Energy Performance Certificate had been commissioned, but not necessarily produced, before they start to market a property for sale or rent.

This requirement was introduced to support the Green Deal. Where a Green Deal has been taken out on a property, that fact will be recorded on the Energy Performance Certificate. Amongst other things, the Certificate will contain information about the energy efficiency measures that have been funded through the Green Deal, the amount of money borrowed and the amount still owed, the term of the loan, monthly repayments etc.

**We intend to retain this requirement because it supports the Green Deal.**

#### Article 12 – Issue of Energy Performance Certificates

Article 12 provides that Member States shall ensure an Energy Performance Certificate is made available to a prospective buyer or tenant when a building is constructed, sold or rented out and that a copy of the Energy Performance Certificate is provided to whoever ultimately buys or rents the property.

**This Article does not impose any increased costs or burdens on consumers.**

In the case of a newly constructed building, the Energy Performance Certificate must be produced by the developer and issued to the purchaser or tenant of the property. For existing buildings, the owner or landlord of the property must produce the Energy Performance Certificate and issue it to the purchaser or tenant as appropriate.

These provisions are already in place under the existing Directive and the Recast does not impose any new or different requirements on this point.

However, the Article also provides that an Energy Performance Certificate must be produced for a building with a total useful floor area of more than 500m<sup>2</sup> which is occupied by a public authority and frequently visited by the public. This threshold will be lowered to 250m<sup>2</sup> with effect from 9 July 2015 so this Article will impose an **additional cost on the public sector.**

#### *Lower threshold for public buildings*

It is currently a requirement under the existing Directive for an Energy Performance Certificate to be issued for buildings larger than 1,000m<sup>2</sup> that are occupied by a public authority and frequently visited by the public. These documents are known as Display Energy Certificates in England & Wales. The difference between Energy Performance Certificates and Display Energy Certificates is that an Energy Performance Certificate shows the asset rating of a building, i.e. its calculated level of energy performance while a Display Energy Certificate shows the operational rating of a building, i.e. how much energy is actually used.

Approximately 42,000 buildings that are occupied by a public authority are currently required to have a Display Energy Certificate as they are larger than 1,000m<sup>2</sup> (source: Building Research Establishment non-domestic stock model).

A Display Energy Certificate consists of a graph which shows how effectively the building is being operated on an A – G scale, and an Advisory Report which contains recommendations for improving the energy efficiency of the building.

The Directive stipulates that the certificate must be updated at least every 10 years.

### Goldplating of requirements

The Directive only requires DEC's, and the accompanying Advisory Report (AR), to be updated every 10 years. However, when it was implemented in 2008, a requirement was introduced that in England & Wales, the DEC must be updated every year while the AR must be updated every seven years.

The reason for introducing a more frequent series of updates than required by the Directive was that the discipline of having to obtain data on annual energy use, calculate a rating, and display a DEC to the public may have an impact on behaviour and encourage better energy management.

However, there is scope to reduce the frequency of updates. Moving to a less frequent cycle may result in savings for local authorities, NHS trusts and other public sector bodies, although this has to be set against potentially higher fuel bills. However, there would be a number of other implications impacting on broader Government policy on energy efficiency:

- the Greening Government commitment mandates a 25% reduction in greenhouse gas emissions from the central Government estate by 2015. It would be much more difficult to monitor progress and quantify savings if the requirement for annual DEC's was dropped;
- Landmark (the operator of the Register) would incur significant financial losses as a result of far fewer lodgements being made. Under the terms of the contract with Landmark, this would result in an increase to the lodgement fee;
- energy assessors' income would drop by as much as 90%; and
- methodological changes to the DEC software would be needed as it is currently based on an assumption of yearly updates. This would have cost implications.

The estimated cost of requiring an annual update of a DEC is £80 - 150 depending on the size of the building. The estimated cost of updating the Advisory Report is estimated to be £200 – 600 depending on the size of the building (source: Valuation Office Agency).

These are gross figures. They do not take into account potential savings from lower fuel bills which may result from better energy management as a result of undergoing the process of obtaining a DEC update every year. In addition, they do not take account of savings made through the Greening Government Commitment. The Commitment has already delivered savings of over £13m in the financial year 2010/11. Levels of carbon emissions fell by 13.8% (source: [www.cabinetoffice.gov.uk/sites/default/files/resources/end-programme-report.pdf](http://www.cabinetoffice.gov.uk/sites/default/files/resources/end-programme-report.pdf)). The Commitment requires a 25% reduction in greenhouse gas emissions by 2015, so further significant savings are expected to be made.

Our view is that the benefits of moving to a less frequent cycle would be outweighed by the disadvantages. There may be some merit in aligning the frequency of assessments with those that will be required for energy audits under the recently adopted Energy Efficiency Directive for

commercial buildings. However, that Directive will not be implemented until 2014 and, at this stage, it is not clear how similar energy audits will be to DEC's.

**We intend to retain the current requirements and review the frequency of updates when there is more clarity on the content of energy audits.**

### Requirement under the Recast

The Recast provides that, with effect from 9 January 2013, buildings between 500 – 999m<sup>2</sup> that are occupied by a public authority and frequently visited by the public must also have a DEC. This threshold will be lowered to 250m<sup>2</sup> from 9 July 2015.

DECs for these buildings, including the associated Advisory Reports, only need to be updated every 10 years, which is the maximum period permitted by the Recast. Energy savings from smaller buildings are likely to be considerably less than from buildings larger than 1,000m<sup>2</sup>. Therefore, we do not intend to require a more frequent update of DEC's for these smaller buildings than is required by the Directive.

We estimate that *lowering the threshold to 500m<sup>2</sup> will affect approximately 9,500 buildings.*

Subsequently *lowering the threshold to 250m<sup>2</sup> will affect a further 12,000 buildings<sup>1</sup>.*

For those public sector buildings that have private sector landlords, we assume that, in this scenario, costs would be included in the service agreement and therefore passed on to the public sector.

### Costs of extending Display Energy Certificates to smaller public buildings

#### Costs

The cost of producing a Display Energy Certificate for buildings larger than 1,000m<sup>2</sup> is currently £300 - £750<sup>2</sup>., depending on the size of the building.

The cost of DEC's for buildings smaller than 1,000m<sup>2</sup> will be proportionally less than for larger buildings because less time will be needed to collect the data required to produce a DEC. The key data requirements to produce a DEC are the buildings total floor space and annual energy costs. So DEC's for smaller public buildings can be produced more quickly than for buildings above 1,000m<sup>2</sup> because less time is needed to measure the amount of floor size.

In addition, moving to a 10 year cycle will result in significant savings for local authorities, NHS trusts and other public sector bodies, ie if we had introduced a requirement for DEC's to be updated annually – as is currently the case for buildings larger than 1,000m<sup>2</sup> - costs would have been significantly higher

On the basis of the above figures, we estimate that the cost of a DEC for buildings larger than 500m<sup>2</sup> but below 1,000m<sup>2</sup> will be about £250. There are 9,500 buildings in this category so the total cost every 10 years will be £2.4 million

We estimate that the cost of a DEC for buildings larger than 250m<sup>2</sup> but below 500m<sup>2</sup> (from 2015 onwards) will be about £150. There are 12,000 buildings in this category so the total cost every 10 years will be £1.8 million.

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<sup>1</sup> Source: <http://www.communities.gov.uk/documents/planningandbuilding/xls/324471.xls>

<sup>2</sup> Source: Valuation Office Agency

The previous version of the Impact Assessment over-estimated likely costs. This has now been corrected.

The requirement in respect of DEC's only applies to buildings occupied by a public authority that are between 250m<sup>2</sup> and 999m<sup>2</sup>. There is no equivalent requirement in respect of non-domestic buildings occupied by organisations that are not in the public sector. **Therefore, this requirement does not have any impact or impose any cost on business or consumers.**

#### Benefits of extending DEC's to smaller public buildings

The benefits are expected to come from two areas. Firstly, improved energy management, i.e. not involving significant investment, as a result of the discipline of obtaining data on annual energy use and calculating a rating, as well as the added pressure of displaying a DEC to the public. Secondly, as a result of implementing some or all of the recommended energy efficiency measures. Whilst the public sector scope for investment is constrained, the availability of a DEC with specific energy efficiency recommendations may assist in prioritising budgets and hence obtaining funding for energy improvements that would not otherwise have gone ahead.

**No costs or benefits of installing/purchasing Display Energy Certificate recommended measures are monetised here, because investment in energy efficiency measures in buildings occupied by public sector organisations are dependent on Government funding streams and because of the very diverse nature, function and location of those buildings.**

For the purposes of illustration, one could assume that the Display Energy Certificate will drive improved energy management in around 20% of buildings and that as a result energy usage is reduced by 1% every time the DEC is renewed (i.e. every 10 years).

We base this assumption of a 20% uptake on the results of two surveys. One, by CIBSE (the Chartered Institute of Buildings Surveyors and Engineers) in 2009, based on responses by about 300 property professionals and energy assessors, found that 21% of property professionals had asked energy assessors to proceed with implementing recommendations following the assessment. The other, by Consumer Focus in 2011, surveyed about 130 homeowners who had recently moved and recalled having received an EPC and found that 19% had made changes on the basis of the recommendations. Based on these findings, a 20% take up rate would appear to be a reasonable estimate.

In 2010 Camco researched DEC trends in about 30,000 public buildings. That research concluded that energy performance improvements had led to a year-on-year carbon reduction of approx 0.4% (amount of CO<sub>2</sub> saved per square metre) for all public buildings that renewed their DEC annually. Central government (excluding MOD and prisons) and local authority sectors saw the best improvement with reductions of 1.3% and 1.5% respectively. On this basis, 1% potential reduction in energy usage would appear to be a reasonable estimate of reduction in energy use.

#### Property advertisements to include details of energy performance indicator

Article 12 also provides that where an Energy Performance Certificate exists for a building and that building is offered for sale or rent, the energy performance indicator for that building must be included in advertisements in the commercial media. The "energy performance indicator" is the rating on an A - G scale of a building's energy performance. In meeting this requirement, the following options are available:

- the A – G graph which forms part of the Energy Performance Certificate;

- a numeric figure corresponding to the energy efficiency rating of the building;
- a letter on the A – G scale that corresponds to the energy efficiency of the property;

Responsibility for ensuring that an advertisement includes the building's energy performance indicator will fall on the owner of the building or their agent. In reality, the responsibility for including this information in advertising material will nearly always fall on the estate agent, so this Impact Assessment focuses on estimating potential costs to estate agents

### Costs:

Many estate agents already include details of a building's energy performance indicator in their advertising material on a voluntary basis.

There is likely to be a small one-off cost for those agents who do not already include this information in advertisements. The cost will be incurred by the need for estate agents to amend their advertising templates. The time involved in doing this should be minimal and very unlikely to take more than half an hour of a staff member's time on a one-off basis. This assumption has been confirmed following discussions with one of the country's major suppliers of internet based estate agency software. In their view, the amount of time involved is likely to be considerably less in reality – no more than a few minutes. However, individual estate agents will vary and so to ensure that potential costs are fully captured, we are retaining the assumption that it will involve 30 minutes of a staff member's time. This type of work would normally be carried out by an administrative assistant who, because of the unskilled nature of the work, is unlikely to be on more than the national minimum wage, ie £6.19 per hour ([www.gov.uk/national-minimum-wage-rates](http://www.gov.uk/national-minimum-wage-rates)). On that basis, the maximum cost per estate agent to comply with this requirement will be very low and in any event unlikely to exceed about £3.

There are approximately 20,000 domestic and commercial estate agents (source: The Property Ombudsman Service)

Therefore, we estimate that **this measure will result in a one-off cost to estate agents of £60,000** for all estate agents to reformat their advertising templates to include an energy performance indicator. However, many estate agents already provide energy efficiency ratings in their advertisements on a voluntary basis so **in practice, actual costs are likely to be significantly lower.**

### Article 13 – Display of Energy Performance Certificates

Article 13(1) applies to buildings with a total useful floor area of more than 500m<sup>2</sup> that are occupied by a public authority, are frequently visited by the public and for which an Energy Performance Certificate (referred to as a Display Energy Certificate in England & Wales) has therefore been issued in accordance with Article 12(1)(b). Under the provisions of this Article, the Display Energy Certificate must be displayed in a prominent place clearly visible to the public. This Article differs from Article 12 in that Article 12 is concerned with the production of DEC's. This Article is concerned with their display. **This Article does not impose any increased costs or burdens on business, consumers or Government.**

The threshold of 500m<sup>2</sup> will drop to 250m<sup>2</sup> by 9 July 2015 at the latest.

Article 13(2) applies to non-domestic buildings over 500m<sup>2</sup> that are frequently visited by the public and where an Energy Performance Certificate has been issued on the construction, sale or rent of that building. In such circumstances, the Energy Performance Certificate must be displayed in a prominent place clearly visible to the public.

The cost of simply displaying a document is virtually nil so **no costs are imposed by this Article.**

#### Article 14 - Inspection of heating systems

This Article applies to boilers with an effective rated output of more than 20kW. It provides that boilers above that size must be regularly inspected. Alternatively, Member States may derogate from that requirement and instead ensure that advice is provided to users on the replacement of boilers, other modifications to the heating system and alternative solutions to assess the efficiency and appropriate size of the boiler.

**This Article does not impose any increased costs or burdens on business, consumers or Government**

Where this option is chosen, the overall impact of the provision of such advice must be equivalent to a system of regular inspections of boilers. In addition, a report that demonstrates the equivalence of this approach must be submitted to the Commission every three years.

This Article is very similar to the requirements in the current Directive. England & Wales have derogated from the requirement to have boilers regularly inspected and instead have set up a system to ensure that users are provided with appropriate advice.

We intend to continue with this approach under the Recast as we believe it is more cost-effective and proportionate. The only differences between the existing requirements and those in the Recast are that the:

- boiler equivalence report must now demonstrate that the impact of providing advice to users is equivalent to carrying out inspections, Previously, the requirement had been to show that the impact was broadly equivalent; and
- a report must now be submitted every three years. Previously it had to be submitted every two years.

In practice, the distinction between advice being equivalent or broadly equivalent to inspections is relatively minor. The boiler equivalence report submitted to the Commission in accordance with the current Directive has clearly demonstrated that the system of advice that has been set up in England & Wales is equivalent in its impact to an inspection regime.

#### Article 15 - Inspection of air-conditioning systems

Article 15 applies to air-conditioning systems with an effective rated output of more than 12kW. It provides that such systems must be regularly inspected.



**This Article does not impose any increased costs or burdens on business, consumers or Government.**

Member States may choose how frequently such systems need to be inspected and different inspection frequencies may be set depending on the type and effective rated output of the air-conditioning system. In addition, the frequency of inspections may be reduced or the inspections lightened where an electronic monitoring and control system is in place.

In England & Wales, a system of inspecting air-conditioning systems was put in place in accordance with the requirements of the existing Directive and the Recast does not impose any new costs or burdens.

Member States may choose how frequently such systems need to be inspected and different inspection frequencies may be set depending on the type and effective rated output of the air-conditioning system. In addition, the frequency of inspections may be reduced or the inspections lightened where an electronic monitoring and control system is in place.

In England & Wales, a system of inspecting air-conditioning systems was put in place in accordance with the requirements of the existing Directive and the Recast does not impose any new costs or burdens. We intend to continue with this approach and to continue to require that inspections are carried out at least every five years. The typical lifetime of an air-conditioning system is 15 – 20 years so an inspection every five years would involve about 3 inspections over its average lifetime. A longer interval of, for example, seven or ten years, could result in only one inspection, which would not comply with the requirement that the inspection is 'regular'.

The Recast does offer the option of derogating from the requirement to have regular inspections and replace them instead with an advice regime. If this approach is adopted, it must be demonstrated that its impact is equivalent to regular inspections.

We have considered the merits of derogating from this requirement as we currently do for boiler inspections. However, the situation is fundamentally different. In England & Wales, there is a central database of all boiler sales. There is also a legal requirement for boilers to be regularly inspected to ensure that they are operating safely. It is therefore relatively easy and cost-effective to arrange for advice to be given to boiler owners/users. It can, for example, be given at the same time as the annual safety check.

In contrast, there is no similar database of air-conditioning units that have been sold. Indeed there are no accurate figures on the actual number of air-conditioning units in England & Wales. In addition, there is no legal requirement for air-conditioning systems to be regularly inspected to ensure they are operating safely.

In order to arrive at an estimate of the number of air-conditioning units, we have considered the total number of non-domestic buildings larger than 250m<sup>2</sup>. That threshold was chosen because buildings smaller than 250m<sup>2</sup> are unlikely to have air-conditioning units large enough to come within the scope of the Directive.

There are approximately 380,000 non-domestic buildings larger than 250m<sup>2</sup> (source: [www.communities.gov.uk/documents/planningandbuilding/xls/324471.xls](http://www.communities.gov.uk/documents/planningandbuilding/xls/324471.xls)).

It would be necessary to survey all of those buildings in order to establish the actual number of air-conditioning units. Typically, this sort of work would be done by a building inspector. The BIS administrative costs calculator ([www.bis.gov.uk/files/file44505.pdf](http://www.bis.gov.uk/files/file44505.pdf)) suggests that the average hourly rate for a building inspector is about £15. Allowing for inflation, that figure could be increased to £20. If the average inspection takes 2 hours, the cost could be between £30 - 40 per building. On that basis, the cost of simply establishing the number of air-conditioning

units would be between £11.4 - 15 million. There would of course be further costs associated with regular visits to provide advice.

Therefore, we intend to continue with inspections and require that inspections are carried out at least every five years. The typical lifetime of an air-conditioning system is 15 – 20 years so an inspection every five years would involve about 3 inspections over its average lifetime. A longer interval of, for example, seven or ten years, could result in only one inspection, which would not comply with the requirement that the inspection is 'regular'

#### Article 16 - Reports on the inspection of air-conditioning systems

This Article provides that an inspection report must be issued after each inspection of an air-conditioning system. The report must contain the results of the inspection and recommendations for the cost-effective improvement of the energy performance of the inspected system.

**This Article does not impose any increased costs or burdens on business, consumers or Government.**

The recommendations may be based on a comparison of the energy performance of the system inspected with that of the best available feasible system.

#### Article 17 - Independent experts

This Article provides that Member States shall ensure that only qualified and/or accredited experts may produce energy performance certificates of buildings or inspect heating or air-conditioning systems. In addition, the work must be carried out in an independent manner.

**This Article does not impose any increased costs or burdens on business, consumers or Government.**

Member States must make publicly available information on training and accreditation, and ensure that either regularly updated lists of qualified and/or accredited experts or regularly updated lists of accredited companies that offer the services of such experts are made publicly available.

In England & Wales, these requirements are already complied with. Energy assessors and air-conditioning system inspectors must be appropriately qualified and must also belong to an approved accreditation scheme. Information on training and accreditation requirements is made publicly available through publication on the DCLG website and a list of the current accreditation schemes is available from this website ([www.communities.gov.uk/planningandbuilding/sustainability/energyperformance/existingdwellings/accreditation](http://www.communities.gov.uk/planningandbuilding/sustainability/energyperformance/existingdwellings/accreditation)).

Energy assessors and air-conditioning system inspectors must belong to one of those schemes. Those schemes, in turn, maintain a publicly available list of their accredited members.

#### Goldplating of requirements

When the current Directive was implemented in 2008, the then Government went beyond the minimum requirements by (a) establishing an accreditation framework and (b) requiring that energy assessors and air-conditioning system inspectors should be both qualified and accredited (the Directive only requires that they are qualified or accredited).

An accreditation framework was introduced to protect consumers by:

- providing a mechanism for consumer redress if something goes wrong;
- supporting quality assurance as accreditation schemes are required to select a random sample of EPCs, DECAs and air-conditioning inspection reports and check them for quality and accuracy;
- ensuring that assessors and inspectors are appropriately qualified and they keep their skills up to date.

The Regulations required energy assessors and air-conditioning inspectors to be both qualified and accredited because of the importance of ensuring that they had the appropriate skills to carry out their work and that there was adequate oversight to ensure that Energy Performance Certificates, Display Energy Certificates and air-conditioning inspection reports are accurate and reliable

**We propose retaining an accreditation framework and the requirement that assessors and inspectors are both qualified and accredited for the reasons noted above and because, in future, the Energy Performance Certificate will be used as the basis for Green Deal assessments.** It will, therefore, be even more important that the Energy Performance Certificate contains a robust assessment that can be relied upon by consumers.

#### Article 18 - Independent control system

This Article requires Member States to ensure that independent control systems are established for Energy Performance Certificates and inspection reports of air-conditioning systems. As part of the independent control system, procedures must be in place to randomly select a statistically significant sample of all the Energy Performance Certificates, Display Energy Certificates and air-conditioning reports that have been produced in any given year, and verify the accuracy of those Energy Performance Certificates or reports.

**This Article does not impose any increased costs or burdens on business, consumers or Government.**

#### Article 19 – review

N/A

#### Article 20 - Information

This Article requires Member States to ensure that owners and tenants of buildings are informed about the different methods and practices that help to improve the energy performance of buildings. Information is to be provided on the purpose and objective of Energy Performance Certificates and inspection reports, on cost-effective ways to improve the energy performance of buildings, and on available financial instruments to fund improvements to the

energy performance of the building. This requirement is already met through the Carbon Emissions Reduction Target and the Community Energy Saving Programme described above and through the work of organisations such as the Energy Savings Trust.

**This Article does not impose any increased costs or burdens on business, consumers or Government.**

The Recast also requires Member States to ensure that guidance and training is made available for those responsible for compliance with its requirements, i.e. energy assessors and air-conditioning systems inspectors

Amongst other things, the guidance and training shall cover:

- the importance of improving energy performance;
- consideration of the optimal combination of improvements in energy efficiency;
- use of energy from renewable sources; and
- use of district heating and cooling when planning, designing, building and renovating

The Government has developed a suite of National Occupational Standards which set out the skills and competences required the different types of energy assessors (on construction, existing dwellings, commercial and public buildings) and for air-conditioning systems inspectors, including the four areas listed above. Those Standards have been reviewed in the light of the requirements of this Article. We have concluded that they already cover the requirements in sufficient detail and that further revisions to the National Occupational Standards are not therefore required.

#### Article 21 - Consultation

Article 21 provides that Member States shall consult relevant individuals and organisations involved in the implementation of the Recast, particularly local and regional authorities.

**This Article does not impose any increased costs or burdens on: business, consumers or Government**

While there will be some costs to Government associated with the requirement to consult, these will be subsumed within the general cost of transposing and implementing the Recast.

#### Articles 22 – 26 – Miscellaneous

N/A

#### Article 27 - Penalties

Article 27 requires Member States to introduce penalties for non-compliance with provisions implementing the Recast's requirements. Those penalties are to be effective, proportionate and persuasive.

**This Article only imposes an increased cost or burden on business or consumers if they fail to comply with the Regulations.**

The penalties for failing to have the appropriate document are as follows:

- existing dwelling - £200;
- public buildings - £500;
- public buildings Advisory Report - £1,000;
- non-domestic building - £500 – £5,000;
- Air-conditioning inspection report - £300.

The Recast has now brought in a requirement for penalties to be introduced for non-compliance. As a result, the regulations now reflect the minimum requirements. In effect, therefore, the goldplating has been removed. In our view, these penalties meet the test of being effective, proportionate and dissuasive.

### Articles 28 – 31 – Miscellaneous

N/A

### Specific Impact tests

- A Competition Assessment has not been completed because the requirements will affect all sectors equally. Therefore, there will not be any effect on competition
- With regard to Small Firms, the requirements will have a positive impact as the majority of companies that provide energy efficiency services are generally small companies. In addition there is a potential for small businesses to reduce costs through improvements to the energy efficiency of the premises they occupy
- Legal Aid: N/A
- Sustainable Development, Carbon Assessment and Other Environment tests: The Recast is designed to reduce carbon emissions and thereby promote sustainable improvement. It is not possible to assess the likely amount of carbon that will be saved as that is entirely dependent on building owners or occupiers deciding to implement one or more energy efficiency improvements.
- Race equality, disability equality, gender equality and Human Rights: The Recast is concerned with buildings, not people. It will affect all occupiers equally
- Rural proofing: The recast does not relate to specific geographical areas. However, the Recast does include exemptions for agricultural buildings that use small amounts of energy

## Annex 1: Post Implementation Review (PIR) Plan

<b>Basis of the review:</b> To review existing policy
<b>Review objective:</b> To ensure that the Recast has been fully implemented and establish whether the estimated costs and benefits are accurate
<b>Review approach and rationale:</b> Yet to be decided
<b>Baseline:</b> The review will be carried out against the baseline as set out in this Impact Assessment
<b>Success criteria:</b> Yet to be decided
<b>Monitoring information arrangements:</b> The Domestic and non-Domestic Registers described in this document will be used to collect and store relevant information
<b>Reasons for not planning a PIR:</b> N/A