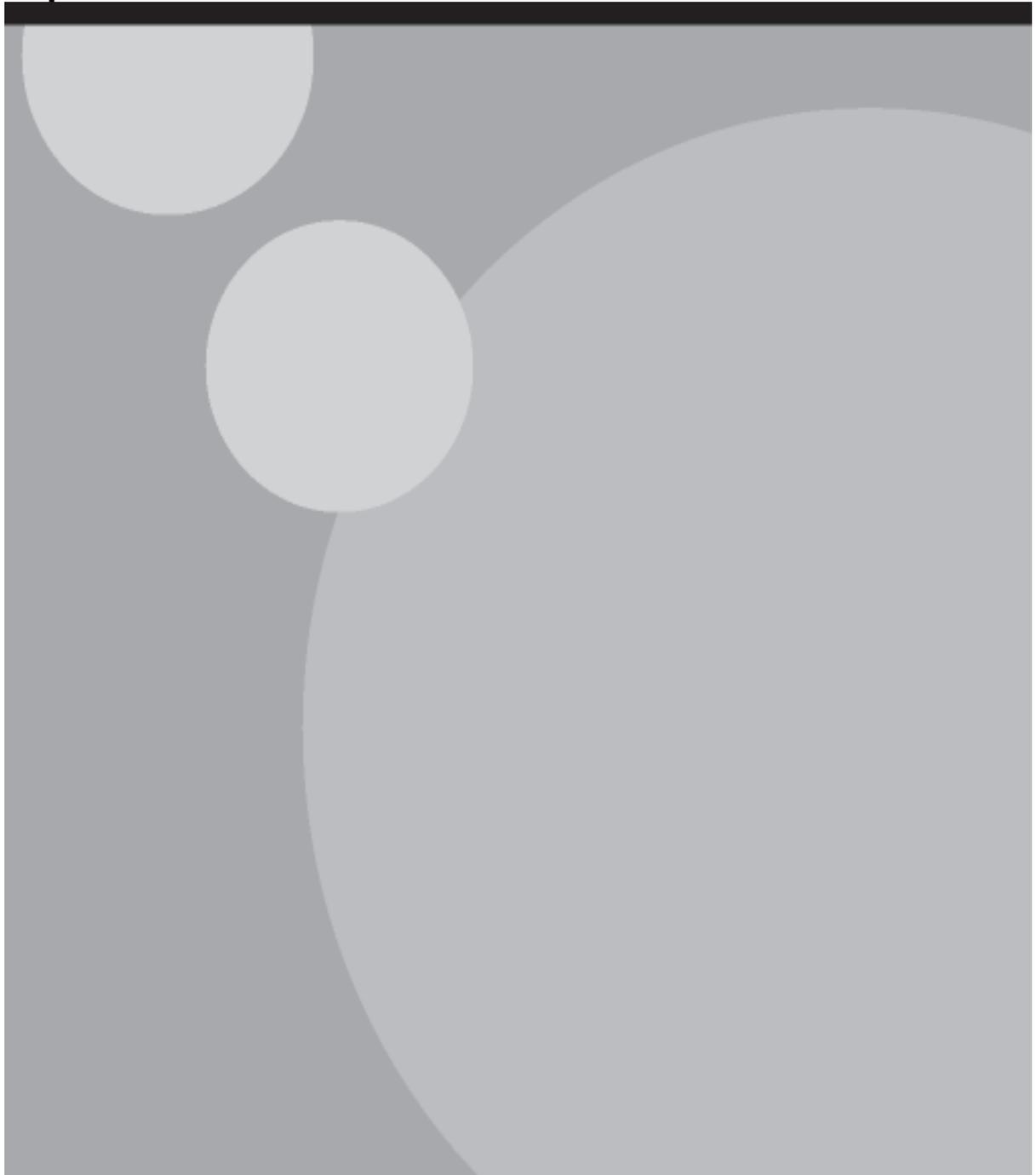




Making energy performance certificate and related data publicly available

**Impact assessment**





Making energy performance certificate and related data publicly available

**Impact assessment**

April 2012  
Department for Communities and Local Government

© Crown copyright, 2012

*Copyright in the typographical arrangement rests with the Crown.*

You may re-use this information (not including logos) free of charge in any format or medium, under the terms of the Open Government Licence. To view this licence, visit <http://www.nationalarchives.gov.uk/doc/open-government-licence/> or write to the Information Policy Team, The National Archives, Kew, London TW9 4DU, or e-mail: [psi@nationalarchives.gsi.gov.uk](mailto:psi@nationalarchives.gsi.gov.uk).

This document/publication is also available on our website at [www.communities.gov.uk](http://www.communities.gov.uk)

Any enquiries regarding this document/publication should be sent to us at:

Department for Communities and Local Government

Eland House

Bressenden Place

London

SW1E 5DU

Telephone: 030 3444 0000

April, 2012

ISBN: 978-1-4098-3441-0

<p><b>Title:</b></p> <p><b>Making Energy Performance Certificate data available</b></p> <p><b>Lead department or agency:</b></p> <p>Department for Communities and Local Government</p> <p><b>Other departments or agencies:</b></p> <p>Department for Energy and Climate Change</p>	<p><b>IA No:</b> DCLG/EPC data</p> <p><b>Date:</b> 12-03-2012</p> <p><b>Stage:</b> Implementation</p> <p><b>Source of intervention:</b> Domestic</p> <p><b>Type of measure:</b> Secondary legislation</p> <p><b>Contact for enquiries:</b> Jonathan Bramhall (0303 444 1803)</p>
--	--

## Summary: Intervention and Options

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

The Government would like to see an increase in the rate of uptake of energy efficiency measures in domestic and non-domestic buildings. It recognises the threat posed by climate change and has a commitment to reduce carbon emissions by 80% on 1990 levels by 2050. Emissions from buildings represent around 40% of total CO<sub>2</sub> emissions in the UK. There are currently a number of barriers to installing energy efficiency measures including: lack of awareness of the energy efficiency of buildings and the measures that can be taken to increase efficiency; the upfront cost of measures; the length of time required for measures to pay back in savings and the 'hassle' involved in planning and carrying out work. The Government has introduced the Green Deal which is designed to overcome many of these barriers. It is also likely that local authorities will want to address issues related to the energy efficiency of the housing stock in their local area. All such schemes would benefit, in terms of reduced energy costs, reduced carbon emissions and economies of scale, derived from precise data on the location of and recommended energy efficiency measures for poor performing properties. However, access to the data is restricted and that is limiting the benefits that could be achieved. Restricted access to energy efficiency data is also limiting the uptake of energy efficiency in other ways such as hampering the efforts of researchers and policy makers develop cost effective solutions to deliver greater uptake of energy efficiency measures.

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

To make address-level and anonymised Energy Performance Certificate data publicly available, subject to appropriate data access safeguards. This aims to boost uptake of energy efficiency measures through the provision of directly relevant information about properties. Organisations such as Green Deal providers and local authorities will have information on the location of properties that could potentially benefit from energy efficiency measures. It will also provide government, local authorities and researchers with the data they need to support better informed policy making, intervention and enforcement and also enable a wider range of organisations to undertake detailed monitoring and analysis. It will also enable a range of consumers (e.g. prospective tenants) to compare energy efficiency ratings (and therefore likely fuel consumption and thermal comfort) of a range of properties. The Energy Act 2011 enables amendments to the Regulations which provide for making Energy Performance Certificate data publicly available; facilitate secure access; and safeguard personal information.

**The following policy options were considered and, in accordance with enabling clauses in the Energy Act 2011, option 2 will be progressed**

(1) Do nothing.

(2) **PREFERRED OPTION** Amend regulations to make Energy Performance Certificates and/or underlying data publicly available, subject to certain safeguards and technical capability. Specifically, to allow public access to Energy Performance Certificates on a one-at-a-time basis and allow some organisations (eg accredited Green Deal providers, organisations which provide energy efficiency advice, government departments, local authorities and researchers) secure access to multiple data records; and publish aggregate Energy Performance Certificate data.

<b>When will the policy be reviewed to establish its impact and the extent to which the policy objectives have been achieved?</b>	It will be reviewed 2016
<b>Are there arrangements in place that will allow a systematic collection of monitoring information for future policy review?</b>	Yes

**SELECT SIGNATORY Sign-off for final proposal stage Impact Assessments:**

*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) the benefits justify the costs.*

**Signed by the responsible Minister: Andrew Stunell      Date: 29 March 2012**

## Summary: Analysis and Evidence

## Preferred Policy Option 2

**Description: PREFERRED OPTION** Amend regulations to make Energy Performance Certificates and/or underlying data publicly available, subject to certain safeguards and technical capability. Specifically, allow public access to Energy Performance Certificates on a one-at-a-time basis and allow some organisations (eg accredited Green Deal providers, organisations which provide energy efficiency advice, government departments, local authorities and researchers) secure access to multiple data records; and publish aggregate Energy Performance Certificate data.

Price Base Year 2011	PV Base Year 2011	Time Period Years 45	Net Benefit (Present Value (PV)) (£m)		
			Low: 3.6	High: 170.5	Best Estimate: 14.1

COSTS (£m)	Total Transition (Constant Price)	Years	Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low	Optional	1	Optional	2.6
High	Optional		Optional	41.0
Best Estimate	0.4		0.14	6.5

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

**Operational and development costs:** The Registers (where EPC data is stored) are managed on behalf of the Government by Landmark Information Group through a concession contract, which means that the cost of operating and developing the England & Wales Domestic and Non-domestic Energy Performance Certificate Registers is currently covered by the lodgement fee (which for domestic properties is £1.15 per lodgement). The change in regulations is likely to increase the workload for Landmark as for the first time, address-level data would be available to the public and organisations. Some of this would be offset by a potential decrease in the current throughput of data requests as a result of publishing aggregated data. Therefore, additional operational and development costs are estimated at £2.0M over a 45 year period. Initial business costs analysis data provided by Landmark suggests that there will not be an increase in the lodgement fee for implementing this proposal but this will be kept under review.

**Data user costs:** Organisations in receipt of multiple Energy Performance Certificate data records will incur some cost from requesting, processing and securely storing data. The value of data available in Year 1 is likely to decline as it loses its relevance over time and is deleted from data users' records. On this basis, additional data user costs are calculated at around £0.7M over 10 years.

**Cost of implementing measures:** We have calculated the cost of implementing measures for a proportion of properties with F and G energy performance ratings that could benefit from either insulation or boiler upgrading and on which action might be taken purely as a result of a mail shot (ie around 60,000 properties). Costs of implementing measures for the proportion that would be affected by this policy are calculated at around £3.8M over 5 years (this being the assumed period of take up by properties which have been targeted using EPC data).

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

There might also be costs to run an information campaign to inform owners of properties which currently have an Energy Performance Certificate how their data will be used and how, should they wish, to opt out of their personal; data being made available via the Register. The cost of this could be higher for this option because of the wider access to data that has been proposed. The communication plan is yet to be finalised but it is likely that this burden will be shared between DCLG and private sector and will be minimal additional

BENEFITS (£m)	Total Transition (Constant Price)	Years	Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
Low	Optional	1	Optional	6.3
High	Optional		Optional	211.5
Best Estimate	0		0.5	20.6

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

**Benefits to organisations who now have access to the EPC data :** Organisations in receipt of multiple Energy Performance Certificate data records will not be charged for the data (although it may be necessary to recover costs in a situation where to do otherwise would lead to an increase in the lodgement fee) but it will have value to them. For example private Green Deal providers (who sell and install energy efficiency measures) will value the data in anticipation of an increase in their sales. We have attributed a value to a data record based on the normal cost of buying data records in the market place. Address level customer data in the market place has a value range of about £0.20 (e.g. basic address) to £4.00 (e.g. a title register comprising a property history, price paid and rights of way from the Land Registry) per record depending on the type of data available. As EPC data contains more data than just a basic address, we have assumed a value in the range of £0.01 -0.10 per record and on the likely traffic resulting from the 4 scenarios set out in paragraph 21), we calculate a total market value of data at £12.5M over 10 years – representing a point when the data available in Year 1 will have lost most of its value.

**Energy savings from implementing measures as a result of Green Deal providers having access to data:** For the central estimate we assume 1% of all households with EPCs will implement energy efficiency measures as a result of directly targeted mailshots. This sits in a range from 0% (ie no effect) to 12% or even 20% (ie estimated effect on turnover as a result of using Tesco's rewards card data to send relevant vouchers to card holders). How this might work is that a Green Deal provider would be able to create a list of properties that would benefit from remedial measures such as upgrading insulation or boiler. They could then write to those addresses and expect a proportion to respond positively (1% is considered to be a reasonable rate of return in the direct marketing industry). We have calculated the energy cost saving and carbon savings from implementing measures for this proportion of F and G rated properties that would benefit from either insulation or boiler upgrading. The estimated saving in fuel bills (which under the Green Deal would be offset against costs) is estimated at £5.0 over 45 years (ie a 5 year investment period followed by a 40 and 15 year product lifetime period for insulation and boilers respectively). The estimated saving in carbon over 45 years is estimated at around 65,000 tonnes with an estimated non-traded value of £3.1M over 45 years.

**Administrative savings:** There could be a small reduction in costs for the department associated with data being freely available and therefore a reduction in Freedom of Information requests. We estimate this would amount to around £0.02M over 45 years.

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

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

The sharing of data has an intrinsic value in that it opens up opportunities for research, analysis and policy making. Government departments, local authorities, researchers and business will benefit from having access to data which will allow them to analyse the energy efficiency of buildings. This could inform policy making and the energy efficiency market leading to a reduction in carbon, some of which will have a value in the form of non-traded carbon. Customers should benefit because advice and marketing letters will contain information which is directly relevant to their particular needs. It will support quicker take up of some energy efficiency measures. In addition, Fire and Rescue Services would benefit from being able to assess risks associated with certain large buildings. This option adds value by allowing access to individual records to be available to a wider audience ie members of the general public who would not otherwise have access to address-level data. It would benefit potential tenants by making it easier and quicker for them to get information on the energy efficiency (and therefore likely fuel costs) of competing accommodation.

<b>Key assumptions/sensitivities/risks</b>	<b>Discount rate (%)</b>	3.5 reducing to 3.0 after 30 years
<p>Assumptions: On the basis of previous requests for data, we expect there to be some considerable interest in the data from business, local government, researchers and statisticians. We are basing our calculations on an assumption that Green Deal providers will also wish to make use of Energy Performance Certificate data. We expect the number of Energy Performance Certificates lodged on the Registers to increase as more properties are sold or rented although poor performing properties should decline as owners implement energy efficiency measures. The modelling assumes that Energy Performance Certificate data will lead to an investment in insulation and upgraded boilers which is over a five-year period (rather than the normal trend - for examples boilers would otherwise be replaced only when they broke down). We assume that savings will continue over the lifetime of the product.</p> <p>Sensitivities: NB: The high range in the Net Benefit takes into account the possibility that a data record could be deemed to have an economic value of £4 and that it could increase take up by 12%. However, we think this unlikely and this is reflected in the best estimate which takes a more modest line. Customer data has a value in the market place but this can vary depending on the type of market, the expertise of the data user and the type of information available. This produces an estimated range of 0% (ie no effect) to 12% (potential impact on take up). In addition, we have estimated that the value of the data ranges from £0.20 to £4.00 depending on type of data and that the value of the data which is currently on the Register will decline in value over time.</p> <p>Risks: There is a risk that users of address data fail to adhere to DPA requirements; and inappropriate sharing of data could lead to it not being used for its intended purpose. It is proposed that safeguards will be put in place which should mitigate this risk; these have been included in costs</p>		

<b>Impact on admin burden (AB) (£m):</b>		<b>Impact on policy cost savings (£m):</b>	<b>In scope</b>
<b>New AB:</b>	<b>AB savings:</b>	<b>Policy cost savings:</b>	No
	Net: -0.02		

## Enforcement, Implementation and Wider Impacts

What is the geographic coverage of the policy/option?	England and Wales				
From what date will the policy be implemented?	01/04/2012				
Which organisation(s) will enforce the policy?	DCLG/Landmark Information Group				
What is the annual change in enforcement cost (£m)?	minimal				
Does enforcement comply with Hampton principles?	Yes				
Does implementation go beyond minimum EU requirements?	Not applicable				
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> 0.07			
Does the proposal have an impact on competition?	No				
What proportion (%) of Total PV costs/benefits is directly attributable to primary legislation, if applicable?	<b>Costs:</b> N/A		<b>Benefits:</b> N/A		
Annual cost (£m) per organisation (excl. Transition) (Constant Price)	<b>Micro</b> Minimal	<b>&lt; 20</b> Minimal	<b>Small</b> Minimal	<b>Medium</b> Minimal	<b>Large</b> Minimal
Are any of these organisations exempt?	No	No	No	No	No

## Specific Impact Tests: Checklist

Does your policy option/proposal have an impact on...?	Impact	Page ref within IA
<b>Statutory equality duties</b> <u>Statutory Equality Duties Impact Test guidance</u>	Yes	Annex 2
<b>Economic impacts</b>		
Competition <u>Competition Assessment Impact Test guidance</u>	No	Annex 2
Small firms <u>Small Firms Impact Test guidance</u>	No	Annex 2
<b>Environmental impacts</b>		
Greenhouse gas assessment <u>Greenhouse Gas Assessment Impact Test guidance</u>	Yes	Annex 2
Wider environmental issues <u>Wider Environmental Issues Impact Test guidance</u>	Yes	Annex 2
<b>Social impacts</b>		
Health and well-being <u>Health and Well-being Impact Test guidance</u>	Yes	Annex 2
Human rights <u>Human Rights Impact Test guidance</u>	Yes	Annex 2
Justice system <u>Justice Impact Test guidance</u>	No	Annex 2
Rural proofing <u>Rural Proofing Impact Test guidance</u>	Yes	Annex 2
<b>Sustainable development</b> <u>Sustainable Development Impact Test guidance</u>	Yes	Annex 2

## Evidence Base (for summary sheets – option 2)

Annual profile of monetised costs and benefits\* - (£m) constant prices

Year	Transition costs	Annual recurring cost*	Total annual costs*	Transition benefits	Annual recurring benefits	Total annual benefits
0	396,422	0	396,422	0	0	0
1	0	1,602,601	1,602,601	0	2,519,551	2,519,551
2	0	1,549,400	1,549,400	0	2,512,604	2,512,604
3	0	1,497,930	1,497,930	0	2,505,272	2,505,272
4	0	1,448,192	1,448,192	0	2,497,619	2,497,619
5	0	1,400,185	1,400,185	0	2,489,724	2,489,724
6	0	-89,833	-89,833	0	576,769	576,769
7	0	-86,000	-86,000	0	549,595	549,595
8	0	-82,302	-82,302	0	523,323	523,323
9	0	-78,724	-78,724	0	497,886	497,886
10	0	-75,268	-75,268	0	473,422	473,422
11	0	-233,719	-233,719	0	252,864	252,864
12	0	-225,807	-225,807	0	236,605	236,605
13	0	-218,191	-218,191	0	220,902	220,902
14	0	-210,806	-210,806	0	205,688	205,688
15	0	-203,684	-203,684	0	190,998	190,998
16	0	6,566	6,566	0	186,912	186,912
17	0	6,344	6,344	0	182,881	182,881
18	0	6,129	6,129	0	178,915	178,915
19	0	5,922	5,922	0	175,020	175,020
20	0	5,722	5,722	0	174,002	174,002
21	0	5,529	5,529	0	172,848	172,848
22	0	5,342	5,342	0	171,573	171,573
23	0	5,161	5,161	0	170,197	170,197
24	0	4,986	4,986	0	168,697	168,697
25	0	4,818	4,818	0	167,128	167,128
26	0	4,654	4,654	0	165,426	165,426
27	0	4,497	4,497	0	163,684	163,684
28	0	4,345	4,345	0	161,878	161,878
29	0	4,199	4,199	0	160,021	160,021
30	0	4,056	4,056	0	158,043	158,043
31	0	3,919	3,919	0	156,082	156,082
32	0	2,916	2,916	0	118,627	118,627
33	0	2,916	2,916	0	121,123	121,123
34	0	2,916	2,916	0	123,619	123,619
35	0	2,916	2,916	0	126,115	126,115
36	0	2,916	2,916	0	128,612	128,612
37	0	2,916	2,916	0	131,108	131,108
38	0	2,916	2,916	0	133,604	133,604
39	0	2,916	2,916	0	136,100	136,100
40	0	2,916	2,916	0	138,634	138,634
41	0	2,916	2,916	0	141,253	141,253
42	0	2,916	2,916	0	115,166	115,166
43	0	2,916	2,916	0	88,051	88,051
44	0	2,916	2,916	0	59,855	59,855
45	0	2,916	2,916	0	30,524	30,524
<b>Total</b>	<b>396,422</b>	<b>6,116,988</b>	<b>6,513,409</b>	<b>0</b>	<b>20,558,519</b>	<b>20,558,519</b>

\* negative values relate to costs which have been removed from later years as a result of action being taken earlier

# Rationale for Government intervention

## Background

1. Energy Performance Certificates (EPCs), Display Energy Certificates (DECs) and some Air Conditioning Inspection Reports (ACRs) contain information on the energy efficiency of buildings. They are lodged in the England and Wales Domestic and Non-Domestic Energy Performance Certificate Registers (the Registers) which are controlled by a Register Administrator, currently Landmark Information Group (Landmark), on behalf of Government.
2. Energy Performance Certificates for dwellings must be lodged on the Domestic Register while Energy Performance Certificates for non-domestic buildings and Display Energy Certificates must be lodged on the Non-Domestic Register. Air Conditioning Inspection Report lodgement on the Non-Domestic Register is currently voluntary but [subject to parliamentary approval of amendments to Regulations, separate from the proposals in this impact assessment] will be a requirement to be lodged from April 2012.
3. Lodgement fees for domestic and non-domestic properties are set at £1.15 and £5.36 respectively. They are paid by the energy assessor but are likely to be included in costs passed onto the property owner.

## *Existing legal framework*

4. The requirement for EPCs, DECs and ACRs flows from the Energy Performance of Buildings Directive<sup>i</sup> (EPBD) which is designed to tackle climate change by reducing the amount of carbon produced by buildings. Under the terms of the Directive:
  - an Energy Performance Certificate must be produced whenever a building is sold, constructed or rented out;
  - a Display Energy Certificate must be produced every year for public buildings over 1,000m<sup>2</sup> which are frequently visited by the public and must be displayed in a prominent place;
  - air conditioning installations over 12kW must be inspected every five years; and
  - boiler installations (as specified in Article 8 of EPBD) must either be inspected regularly or advice must be provided to users. These reports are not currently required to be lodged on the Register.
5. EPBD was transposed into domestic legislation through the Energy Performance of Buildings (Certificates and Inspections) (England and Wales) Regulations 2007 (the Regulations)<sup>ii</sup> as amended. These Regulations only apply to England & Wales and separate regulations apply in respect of Scotland and Northern Ireland.
6. The Regulations currently specify that data in the Registers can only be disclosed to the following prescribed list of recipients:
  - a person already in possession of the Report Reference Number assigned to the document of which they are seeking disclosure;
  - the operator of an approved accreditation scheme of which the energy assessor who prepared the particular certificate and report was a member at the time the document was entered on the central Energy Performance Certificate Register;
  - Energy Savings Trust where the Energy Performance Certificate shows an asset rating of F or G
  - an authorised officer of an enforcement authority;
  - an approved energy assessor; or

- an officer of the Secretary of State for Communities and Local Government provided that no particular property is identifiable.
7. However, the Energy Act 2011<sup>iii</sup> permits the Regulations to be amended in the following areas:
- restrictions to access to documents and data, or specified parts of such documents or data, from disclosure to a specified description of persons;
  - exclusion of such documents or data from disclosure where they relate to a specified description of buildings;
  - limits to the number of disclosures to persons as specified in the regulations,
  - specification of conditions of disclosure; and
  - imposition of sanctions for non-compliance with such conditions.

### *Green Deal*

8. Customer research tells us that there are currently a number of practical barriers to installing energy efficiency measures including the upfront cost of measures, the length of time required for measures to pay back in savings and the 'hassle' involved in planning and carrying out work. The Green Deal<sup>iv</sup> removes many of the barriers faced by householders and businesses wishing to install energy efficiency measures.
9. A key element of the Green Deal is that it enables investments to be made with no upfront cost and no increase in repayment costs because the cost of any energy efficiency measures would normally be repaid out of consequent savings in the property's fuel bills. A Golden Rule has been devised which states that that the repayment should not exceed the savings in energy costs and that the length of the payment period should not exceed the expected lifetime of the measures. The repayment of the upfront cost for energy efficiency measures is attached to the property not the current property owner. Therefore obligation to repay may be passed on to future occupiers.
10. Green Deal Providers would arrange for:
- assessors to assess a property's energy efficiency needs (based on an existing EPC if one is available) and agree a Green Deal Plan with the property owner or landlord/tenant;
  - accredited installers to install agreed energy efficiency measures;
  - a finance plan whereby the Green Deal participants are remunerated and the customer agrees to the relevant energy supplier adding an appropriate repayment charge to the regular energy bill; and
  - the record to be updated.
11. The customer would then pay their (reduced) energy bill in the normal way.
12. One of the aims of this policy is to make the Green Deal more effective by assisting Green Deal providers in marketing their services to potential customers. This could be achieved through making the details of the 6 million properties that currently have EPC freely available. EPC data could then be used to help Green Deal Providers to identify existing properties which would benefit from specific remedial action so that they may write to the property owner with tailored suggestions for improvements.

### *Other interests*

13. The Government has intervened to remove restrictions on access to the data which prevent it from being used to its best effect. Restricted access to energy efficiency data is currently limiting the potential uptake of energy efficiency and other beneficial effects by:

- restricting the ability of researchers and policy makers to develop cost effective solutions to deliver greater uptake of energy efficiency measures;
- preventing local authorities from understanding and being able to take the most cost effective approach to addressing local needs;
- denying potential tenants access to timely information which would enable them to compare the energy efficiency (and therefore likely fuel costs) of competing available accommodation;
- preventing Fire and Rescue Services from having sufficient information to evaluate potential risks in certain buildings.

## **Proposal**

14. We are proposing to:

- make EPCs, DECAs and ACRs for properties in England and Wales publicly available; and
- allow certain organisations to have access to multiple Energy Performance Certificate data records (e.g. accredited Green Deal Providers, organisations which provide energy efficiency advice, government departments, local authorities and academic researchers) secure access to multiple data records - again, subject to safeguards to ensure compliance with the DPA;
- put in safeguards to support the right to privacy; and
- publish aggregated data.

15. The data made available might include:

- the address of the building to which the Energy Performance Certificate, Display Energy Certificate or Air Conditioning Inspection Report relates,
- the energy efficiency rating for that building,
- the recommended measures to improve the energy performance of the building,
- details of the energy assessor; and
- details of any Green Deal finance that has been used to improve the energy efficiency of the property.

## **Options considered**

16. We have considered two main options:

(1) Do nothing – maintain the current regulations limiting access to data.

(2) PREFERRED OPTION 2, Amend regulations to:

- make EPCs, DECAs and ACRs publicly available, subject to certain safeguards and technical capability;
- allow certain organisations (e.g. accredited Green Deal providers, organisations which provide energy efficiency advice, government departments, local authorities, and researchers) secure access to multiple data records; and
- allow access to aggregated data (i.e. data excluding addresses) thus removing conflicts with other legislation such as the Statistics Act.

## Key Assumptions/sensitivities

17. This assessment takes note of the intention to create suitably accredited Green Deal providers and assumes, based on recent requests from stakeholders, that they will use Energy Performance Certificate data and work towards putting the necessary safeguards in place. It also assumes that Landmark Information Group continues to be the contracted operator of the Registers; that the rate of lodgement remains steady (ie no dramatic growth or fall off in number of EPCs, DECs and ACRs produced and lodged which could have implications for cost of data sharing and fee income); and that technical solutions will be implemented in good time to meet requirements.

### *Model*

18. We have assumed a 5-year investment model – ie that investment in properties will take place over a 5-year period following data being made available. The energy saving benefits are derived over a 45 year period. We think this is a reasonable assumption based on the number of properties which would benefit from remedial energy performance measures and the supply chain which would be needed to support them. We have deducted from costs and savings, that proportion of boiler installations that would have broken down and therefore would have needed to be replaced anyway.

### *F and G ratings*

19. F and G ratings signal the worst performing properties and account for about 10% of dwellings with an Energy Performance Certificate, in England and Wales. The numbers of properties with F and G ratings is taken from the Energy Performance Certificate register (2010). We have assumed that, while the overall number of Energy Performance Certificates will continue to rise, there will also be a downward trend for F and G rated properties as remedial measures are put in place. We have used Energy Savings Trust research<sup>v</sup> which has estimated that about 37% and 43% of all F and G rated properties could be raised to an E rating through insulation or an upgraded boiler, respectively.

### *The 'data effect'*

20. The lower range (0%) assumes that the data has no effect at all but we think this unlikely. Data is routinely used to generate sales leads in the market place. The direct marketing industry considers 1% of all mailshots leading to a sale, to be a reasonable rate of return. Therefore, we have applied this figure to all the data to ensure that only the data effect will be calculated in this impact assessment and that normal traffic (e.g. that generated through self-contacts, in-store, advertising) is excluded. The higher range is based on evidence that data can have a significantly greater effect, depending on the type of data, the products on offer and the sophistication of the data analysis system. For example, it has been suggested that Tesco's use of its rewards card data can lead to a 12-20%% increase in turnover when vouchers sent to card holders is made directly relevant to their needs through the use of data on their shopping habits. However we do not believe this is representative of most economic activity in the energy efficiency market.

### *Demand for multiple data records*

21. In order to calculate the likely demand for multiple data records, we have assumed the following scenario:

- A – Green Deal providers require monthly data on properties with F and G ratings
- B – Local Authorities require annual data on properties with F and G ratings
- C – Universities require one off data samples on properties with A to G ratings
- D – Fire and Rescue Services require quarterly data on large buildings in their area.

### *Energy savings*

22. We have based energy savings on data produced by DECC<sup>vi</sup>. We have calculated the savings associated with insulation and boiler upgrade because one or other of these measures would be beneficial in about 80% of F&G rated homes (according to EST research). We have assumed that insulation would have a lifetime of 40 years and a boiler of 15 years; therefore we have calculated the savings on that basis. We have used data on savings associated with gas for simplicity and because this covers above 85% of energy used.

### *Carbon savings*

23. We have taken the carbon saved from implementing remedial measures and calculated the non-traded carbon based on DECC data<sup>vii</sup>

### *Benefit to users of the data*

24. Users of the data will derive benefit for example Green Deal providers (who install boilers etc) will benefit from the increased installation of energy efficiency measures. As a proxy for this benefit we have quantified the value per record to be in the range of £0.20 (for a simple address) to £4.00 (for a title deed which includes a property history, information on rights of way and prices paid). The data we are providing will be more than a simple address in that it will also include additional information about a property which could lead to a higher take up. However, we have assigned a conservative value of £0.40 per record.

### *Remedial measures costs*

25. Costs of installing insulation and upgrading boilers has been calculated using data from DECC. There is a range of costs associated with insulation depending on whether it is top up, whether it is DIY (which we assume would be independent of the 'data effect') and whether it is loft and/or cavity wall insulation. We have used the average cost of installing a condensing boiler. The cost of implementing measures is likely to be lower in those properties that have a higher energy efficiency rating.

### *Data user costs*

26. We proposed to enable access to address-level multiple data records on condition that the data user signs a legally binding agreement to ensure that the data is handled in accordance with the DPA. This is not a new burden in itself as all organisations and individuals are already required to abide by the Act. However, the Secretary of State has an ongoing responsibility for the data and we will therefore be looking for some assurance that an appropriate system is in place. Therefore we have costed the normal steps in either putting together an appropriate system and/or checking that such a system is in place. The cost may vary depending on the size of the organisation.

### *Operating and development costs*

27. The current operator, Landmark, have provided their estimates of the cost of developing technical solutions to enable access to data for individual, a system for individuals to opt out of having their data disclosed and also likely costs to develop and operate the scenario outlined above.

### *Government administration costs*

28. Government administration costs will be minimal and part of the routine work of the department. There could be additional costs for the department if it was decided to run a large-scale information campaign to inform current Energy Performance Certificate holders how their data would be used and how to opt out.

## Estimate of costs for preferred and alternative options

### **Option (1) Do nothing**

29. There are no additional costs for this option as it proposes to maintain the current situation. However, this option does not support the Government's data transparency agenda; it would not make the most of available data to support the Green Deal or Local Authorities' efforts to improve the energy efficiency of properties in their area. There would be a missed opportunity to publish data and this would mean that FOI requests for the data would continue to put a slight strain on departmental administrative costs (currently estimated at £0.02M over 45 years).

### **Option (2) – Preferred Option**

#### *Operational and development costs*

30. Landmark Information Group already regularly receives requests from DCLG through change control procedures to make adjustments, in order to fulfil contractual obligations related to development of the Registers. As a concession contract is operated, costs of development can be passed through and recovered by increased lodgement fees. Initial business costs analysis data provided by Landmark suggests that there will not be an increase in the lodgement fee for implementing this proposal but this will be kept under review. No additional budget has been set aside for these development costs. As precautionary measure, we reserve the right to apply a cost recovery option in a situation where a request or series of requests for access to multiple data records might otherwise lead to an increase in the lodgement fee.

#### *Data user costs:*

31. Organisations in receipt of multiple (bulk) Energy Performance Certificate data records may incur some cost from processing and securely storing the data (estimated at £500-£4000 per user depending on the type and frequency of request). However, they should also incur slightly less cost as there is no need to request data on a case-by-case basis. It might be necessary to apply a cost recovery option in a situation where a request or series of requests for access to multiple data records might otherwise lead to an increase in the lodgement fee. The costs are likely to decline as the data loses its value over time and is deleted. On this basis, additional data user costs are calculated at around £0.7M over 10 years.

#### *Cost of implementing measures:*

32. We have calculated the cost of implementing measures for a proportion of properties with F and G energy performance ratings that could benefit from either insulation or boiler upgrading and on which action might be taken purely as a result of a mail shot (ie around 60,000 properties). Costs of implementing measures for the proportion that would be affected by this policy are calculated at around £3.8M over 5 years (this being the assumed period of take up by properties which have been targeted using EPC data).

## Administrative costs

Additional administrative costs		
Process	Number of hours	Option 2 (£)
Consider and revise standard T&C (PA)	1.5	
Seek legal advice (PA)	0.5	
Legal consideration and advice (LA)	3.5	
Meetings with Landmark (PA)	2.5	
Final sign off (PA)	0.5	
Receive and record request for data (PA)	0.25	1,820
Consider request for data (PA)	0.75	5,461
Draft and put up submission to minister (PA)	0.75	5,461
Receive and act on ministerial decision (PA)	0.25	1,820
<b>Total</b>		<b>14,563</b>

Assumed hourly rate	Policy Adviser (PA)	£16.67
	Legal Adviser (LA)	£33.33
Annual number of requests taking reduction in FOIs into account	Option 2	336

## Non-monetised costs

33. We have not monetised the benefits of these proposals because there has been little analysis to date of the monetary value of the Energy Performance Certificate data itself. Therefore, we have made some general assumptions.
34. We have not estimated the cost of organisations wishing to write to households. Although likely to be an additional cost, it is likely to be less than if the data was not available in which case organisations would need to use a blanket approach rather than writing to properties with directly relevant information. Individuals may need to spend time dealing with unwanted direct mail e.g. informing of their wish to opt out from having the Energy Performance Certificate at their current address/property disclosed. This will be higher in option 2 than option 1. Alternatively, some individuals may wish to opt in. We will provide a central point for them to contact so that they can request the appropriate action.
35. If building owners decide to install other energy efficiency measures (e.g. energy efficient light bulbs or double glazing) as a result of being targeted by commercial companies who have identified them on the Register, they may incur a cost which has not been quantified here. However, there is no obligation to implement recommendations. In addition, they may qualify for Green Deal finance, which takes repayments from savings in fuel bills.

## Benefits

36. The Registers represent a potentially useful source of information about the energy efficiency of buildings in England & Wales. The benefits of making use of the data, subject to rules on careful handling, make it desirable to widen access. For options 2, these benefits have been identified as:
- providing organisations which market or promote energy efficiency measures with a better understanding of the market;
  - enabling them to market their services more precisely and effectively - by targeting those households and businesses with the most to gain by investing in remedial measures and offering solutions that are directly relevant to their needs;
  - better understanding of the energy performance profile of a locality may also help to resolve any logistical and supply problems;

- helping to meet statutory targets on climate change;
- facilitating research and analysis from a wider pool of research and statisticians which may be used to inform Government and local policy;
- improving opportunities for monitoring carbon reduction in the UK; and
- better understanding of demand for energy efficiency products and services at a local and national level;
- better targeting of policies and programmes to improve the energy efficiency of the stock;
- supporting the Government's transparency agenda
- mapping and predicting local demand leading to efficiency savings relating to the manufacture, storage and transport of energy efficiency products
- facilitates compliance monitoring and enforcement; and
- less need for individual handling of Freedom of Information requests making for a more cost effective service.

37. Under Option 2, making EPCs, DECAs and ACRs publicly available would have the following added benefits:

- increasing access for the general public to useful environmental data and the energy efficiency of homes and commercial buildings;
- enabling individuals to check and compare the energy efficiency of any building in which they have an interest;
- motivating individuals to take action to keep up with other, better performing properties in their community;
- easier access for organisations in that they will not have to make a new request each time;
- reducing the department's administrative costs in that the Secretary of State will not have to consider and make a decision on each request.

#### *Estimate of monetised benefits for options 2*

38. It is difficult to monetise the benefits of these proposals because there has been little analysis to date of the monetary value of the Energy Performance Certificate data itself. Therefore, we have made some assumptions.

39. Organisations in receipt of multiple Energy Performance Certificate data records will not be charged for the data (although it may be necessary to recover costs in a situation where to do otherwise would lead to an increase in the lodgement fee) but it will have value to them. For example private Green Deal providers (who sell and install energy efficiency measures) will value the data if it leads to an increase in their sales. We have attributed a value to a data record based on the normal cost of buying data records in the market place. Address level customer data in the market place has a value range of about £0.20 (e.g. basic address) to £4.00 (e.g. a title register comprising a property history, price paid and rights of way from the Land Registry) per record depending on the type of data available. Therefore, there would be an immediate benefit to those organisations that are permitted to access the address-level Energy Performance Certificate data in that we are not proposing to charge for it (albeit keeping the option of recovering costs). As EPC data contains other data than just a basic address (e.g. a property's recommended energy efficiency measures), we have assumed a value of between £0.01-0.10 per record. Based on the likely traffic resulting from the scenario set out in paragraph 21, we calculate a total market value of data at £12.5M over 10 years.

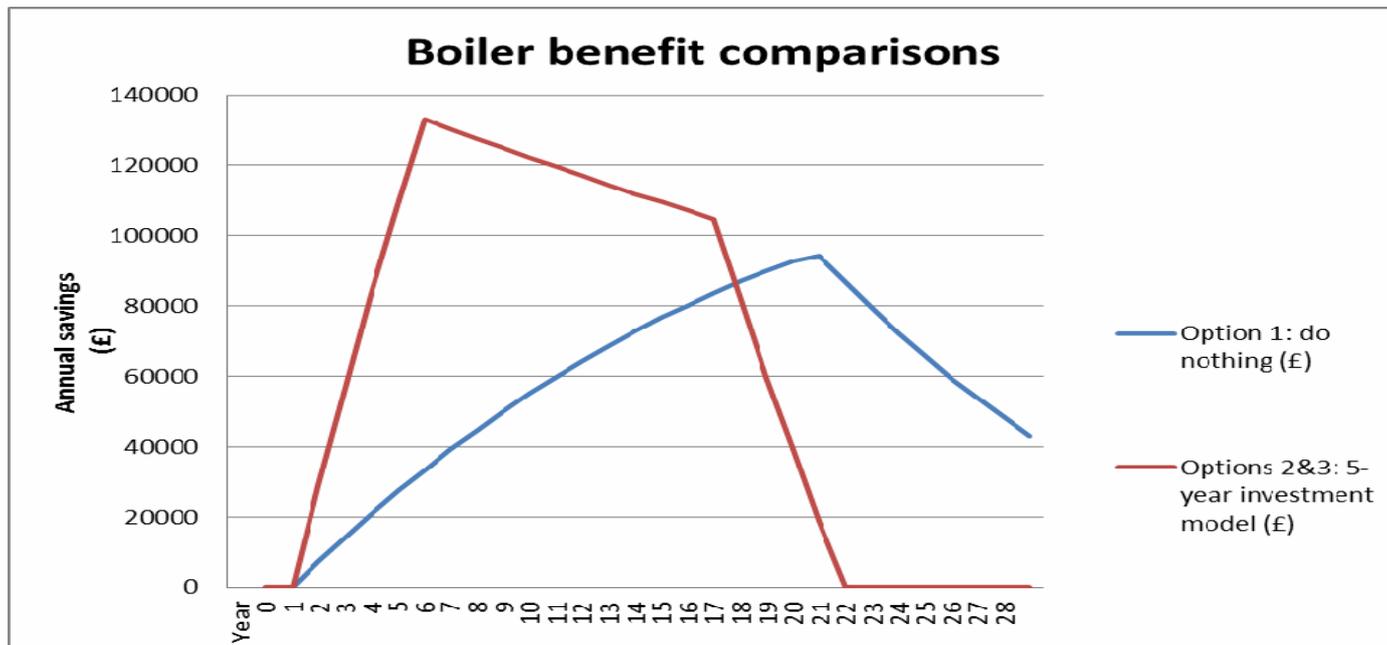
40. For energy savings from implementing measures as a result of Green Deal providers having access to data, our best estimate assumes that 1% of all households targeted by

mailshots will implement energy efficiency measures as a result. This sits in a range from 0% (ie no effect) to 12% or even 20% (ie estimated effect on turnover as a result of using Tesco's rewards card data to send relevant vouchers to card holders). How this might work is that a Green Deal provider would be able to create a list of properties that would benefit from remedial measures such as upgrading insulation or boiler. They could then write to those addresses and expect a proportion to respond positively (1% is considered to be a reasonable rate of return in the direct marketing industry). We have calculated the energy cost saving and carbon savings from implementing measures for this proportion of F and G rated properties that would benefit from either insulation or boiler upgrading. The estimated saving in fuel bills (which under the Green Deal would be offset against costs) is estimated at £5.0 over 45 years.

- 41. Packaging the raw data in the form of a report or other data product would generally enhance market value. It is possible that commercial organisations could use the data to create such products which could be sold to or licensed for use by others.

*Carbon saving benefits*

- 42. The scale of the carbon saving benefits will be dependent on how the data is used and the effect of incentives and advice schemes such as those run by Green Deal providers. We do not currently have an estimate of the potential size of the Green Deal market (we have based our calculations on F and G rated properties only); however we have estimated that the 'data effect' will deliver an additional 1% on the market. The estimated saving in carbon over 45 years is estimated at 65,000 tonnes with an estimated value of £3.1 M over 45 years.
- 43. Condensing boilers can have a product life of 15 years if well maintained. A benefit of using the data to target properties with inefficient boilers is that remedial measures such as upgrading of boilers will be carried out earlier and not just when the product reaches the end of its life and would have to be replaced anyway (see fig below).



*Non-monetised benefits*

- 44. Data transparency has an intrinsic value in that it often creates the opportunity for new applications.

45. Ultimately, it is hoped that the effect of widening access to data on Energy Performance Certificates will result in more building owners improving the energy efficiency of their buildings, reducing fuel costs and carbon emissions. The English House Condition Survey<sup>5</sup> (EHCS) concludes that one or more recommendations covered by the Energy Performance Certificate could benefit some 20.2 million homes (91% of the housing stock). It was also estimated that the average home could achieve savings of £300 per year from implementing energy saving measures.
46. Although the proposal does not have a direct impact on innovation, it could support the development of a market for innovative energy efficiency products.
47. Ultimately, it is expected that these effects of enabling wider and easier access to Energy Performance Certificates and data will result in more building owners improving the energy efficiency of their buildings, more quickly. This could indirectly lead to reduced fuel costs and carbon emissions and contributing to energy security, thermal comfort and health.

## Risks

48. We have considered whether there is a risk that making Energy Performance Certificate data publicly available would impact on the privacy of individuals, the result of which could be increased scope (e.g. through data mining) for direct marketing of products and services.
49. These risks will be mitigated through:
- completion of a regulatory stage privacy impact assessment and equality impact screening assessment;
  - applying the principles of the DPA; and
  - incorporating safeguards into regulations, technical and administrative arrangements governing how data will be handled and for what purposes.
50. To minimise the risk of the policy impacting on the privacy of individuals, we intend to put in place the following safeguards to ensure that the ability to access the data is not misused:
- Making it a condition of accessing the data that the user agrees to comply with the DPA and other statutory regimes; and removing access from anyone who has misused the data. They could also be subject to enforcement action by the Information Commissioner's Office.
  - Introducing safeguards through software design to prevent data mining, (that is, collection of large amounts of data from individual records). The software will allow access to one EPC at a time limiting the number that can be accessed by a user over a short period of time. Alternative arrangements for secure access will be made for those who are permitted access to multiple data records for approved purposes (e.g. to support the Green Deal, government policy or academic research).
  - Advising consumers of potential use of data and/or enabling them to opt out via:
    - public announcement via Press Notice to inform holders of new and existing EPCs how their data will be used by research organisations, Government, and by commercial organisations to promote their services and informing them how they can opt out of having the EPC and underlying data disclosed
    - a notice on the Department for Communities and Local Government (DCLG) website explaining what data would be made publicly available and advising how people can opt out of having the EPC and underlying data disclosed;
    - a 'privacy notice' (previously known as a 'fair processing notice') on Energy Performance Certificates in the future which informs people with whom and for what purpose EPC and underlying data would be shared.

- It is expected that individuals who wish opt out from having the Energy Performance Certificate at their current address/property disclosed, would be able to do so by informing a central point so that the appropriate action is not onerous for them.
  - Conditions placed on the use to which the data can be put by Green Deal Providers and others, including the following:
    - make clear in any marketing material that the recipient can request their details are removed from the Green Deal Provider's marketing list;
    - remove from their marketing list the details of anyone whose data was obtained from the Registers where that person or organisation has opted out or failed to respond to marketing offers after a specified number of offers have been dispatched;
    - make it a condition of receiving the data that it is only used to inform householders or small businesses about the energy efficiency improvements they could make;
    - inform the consumer how their address details were obtained.
  - Accreditation and quality assurance arrangements for Green Deal providers are being developed by the Department for Energy and Climate Change. In addition to any enforcement action by the Information Commissioner's Office, failure to adhere to these conditions could result in sanctions including suspension or revocation of their access to address-level data.
51. We considered including an opt-out on the Energy Performance Certificate itself. We have not pursued this option because the person commissioning the Energy Performance Certificate at the point of sale or rent (which is the trigger for requiring an EPC) will be the seller or landlord. That individual is unlikely to be the occupant at the time the data is disclosed and therefore are unlikely to have any interest in whether or not the data is made publicly available.

## **Competition**

52. We also considered whether there is a risk to competition. Option 2 would permit access to Energy Performance Certificates to be available to all but limits would be put on the amount of data which could be accessed by individuals or organisations which do not satisfy the requirements to safeguard personal data in line with the DPA. We believe that the proposals achieve the best balance between making data more widely available to help support building owners to implement energy efficiency measures, whilst protecting their privacy and minimising exposure to unsolicited mailings. The availability of Energy Performance Certificate data should encourage competition and innovation within industry. This intervention will therefore not favour the position of certain companies over others but rather improve the information about the market and thereby has the potential to promote competition and productive efficiency.

## **One In, One Out rule**

53. The proposed measure will not impose any additional cost to business and therefore its impact is neutral for the purposes of the One In, One Out Rule. As noted at paragraph 38, the cost of maintaining and developing the Register is currently met from the lodgement fee. Making Energy Performance Certificate data publicly available will require some modifications to the Registers, currently estimated at around £0.3M for the first year and £0.03M thereafter. Some of this will be offset by reductions in the current level of Freedom of Information requests. Making Energy Performance Certificate data publicly available is regarded as forming part of the maintenance and development of the Register. Initial business costs analysis data provided by Landmark suggests that there will not be an increase in the lodgement fee for implementing this proposal to cover the cost of modifications necessary to make Energy Performance Certificate data publicly available.

## **Enforcement and compliance**

54. The proposals do not envisage any major new enforcement or compliance regime. Sanctions will include:

- Anyone found to have misused the data or not having adhered to the DPA or any other conditions/requirements in respect of access could be precluded from access to the Register in future.
- The sanction for breach of conditions imposed (e.g. using the data for purposes other than permitted) would be suspension or revocation of their access agreement.

## **Monitoring and review**

55. We will be seeking feedback on the impact of the policy from those with whom we share the data (see Annex 1 for more detail).

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

A PIR should be undertaken, usually three to five years after implementation of the policy, but exceptionally a longer period may be more appropriate. A PIR should examine the extent to which the implemented regulations have achieved their objectives, assess their costs and benefits and identify whether they are having any unintended consequences. Please set out the PIR Plan as detailed below and provide reasons if there is no plan to do a PIR.

<p><b>Basis of the review</b> The Climate Change Act 2008 requires an adaptation report to be completed every 5 years. Departments will have to submit reports to Defra Secretary of State in 2014/15 for publication of the Second UK Climate Change Risk Assessment in 2016. Three main criteria embedding the principles for good adaptation are proposed: effectiveness – the ability of an instrument to correct for the existing market or non-market failure; economic efficiency – the ability of an instrument to achieve the greatest social benefits at the lowest cost; and equity – the distributional impacts of an instrument.</p>
<p><b>Review objective:</b> The review will have the following objectives:</p> <ol style="list-style-type: none"><li>(1) To ensure the system is working properly in that it provides easy but secure access to Energy Performance Certificate data</li><li>(2) To confirm costs and savings</li><li>(3) To confirm carbon savings</li></ol>
<p><b>Review approach and rationale:</b> To be confirmed but ideally, would commission research into the effectiveness of the system to test that the system is working as it should. Key outputs would be the number of households that implement one or more recommendations as a result of Energy Performance Certificate data being made available; carbon emissions savings; and impact on fuel bills. This is also likely to form part of the evidence for the Climate Change Committee's progress report and Defra's adaptation report. It will be necessary to ensure that there is no double counting in relation to other initiatives.</p>
<p><b>Baseline:</b> Energy Performance Certificates are currently valid for 10 years. The baseline is likely to be average ratings at the date of implementation. The baseline for carbon savings for the purposes of the Second UK Climate Change Risk Assessment is 1990 data.</p>
<p><b>Success criteria:</b> An increase in the take-up of recommendations on Energy Performance Certificates leading to reductions in fuel bills and carbon emissions. The scale of the benefits will be dependent on how the data is used and the effect of incentives and advice schemes such as those run by Green Deal providers. The data is being used innovatively to inform interested parties (e.g. the public, government departments, local authorities and universities). The system and safeguards are operating effectively and efficiently.</p>
<p><b>Monitoring information arrangements:</b> Data is held on the England and Wales domestic and non-domestic Registers. It is proposed to develop the Registers to include the new rating following remedial energy efficiency measures as a result of accessing the Green Deal.</p>
<p><b>Reasons for not planning a PIR:</b> Not applicable</p>

## Annex 2: Specific Impact Tests

**Privacy impact:** We have performed a Privacy Impact Assessment<sup>viii</sup> (x) in accordance with the guidance from the Information Commissioners Office<sup>12</sup>. Taking into consideration the responses to the consultation, we will undertake a final Privacy Impact Assessment at the regulatory stage to consider and manage the risks of sharing potentially personal data.

**Competition assessment:** Some respondents to previous consultations on data sharing have raised concern about unfair competition as a result of granting access to personal data only to selected organisations. The intention now is for access to Energy Performance Certificates to be available to all but with limits on the amount of data which can be accessed by the public or organisations which do not satisfy the requirements to safeguard personal data in line with the DPA. We believe that the proposals achieve the best balance between making data more widely available to help support building owners to implement energy efficiency measures, whilst protecting privacy and minimising exposure to unsolicited mailings and contact. The availability of Energy Performance Certificate data should encourage competition within industry. This intervention will therefore not favour the position of certain companies over others but rather improve the information about the market and thereby has the potential to promote competition and productive efficiency.

**Small Firms Impact:** These proposals do not impose or reduce costs on small business because they already have a duty to safeguard personal information in accordance with the DPA.

**Legal Aid:** These proposals do not have any implications for Legal Aid.

**Environmental impact:** (Incorporating sustainable development; carbon assessment and other environment): The aim of these proposals is to support delivery of Government's climate change commitments. In that the data sharing proposals will open up the energy efficiency market, leading to targeted advice and the implementation of energy efficiency measures, there would be a reduction in carbon, calculated here at approximately 78,000 T over a 45 year period.

**Health Impact:** Whilst the data sharing proposals will have no direct impact on health, they do support plans to improve the energy efficiency of the housing stock which will provide for increased thermal comfort and this can help to improved health outcomes.

**Equalities and social impact:** The data sharing proposals do not raise any equalities or social impact.

**Human Rights:** The proposal does not interfere with rights under the European Convention on Human Rights (ECHR) in a way which would be disproportionate to the achievement of any legitimate aim and unnecessary in a democratic society. We have considered the possible impacts on an individual's human rights in terms of the right to enjoy home life, the right to a fair hearing, the right not to be deprived of property and the right to equal treatment and also the common law obligations of confidence and our view is that these proposals do not have a detrimental effect provided that we put in safeguards to ensure that the data owner and data users adhere to the principles set out in the DPA.

**Rural proofing:** Whilst the data sharing proposals will have no direct impact on rural communities, rural properties' energy performance is lower than other areas<sup>ix</sup>, so greater uptake of energy efficiency measures may benefit rural communities more.

## References

---

- <sup>i</sup> <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2003:001:0065:0071:EN:PDF>
- <sup>ii</sup> <http://www.legislation.gov.uk/uksi/2007/991/contents/made>
- <sup>iii</sup> [http://www.publications.parliament.uk/pa/bills/cbill/2010-2012/0206/cbill\\_2010-20120206\\_en\\_1.htm](http://www.publications.parliament.uk/pa/bills/cbill/2010-2012/0206/cbill_2010-20120206_en_1.htm)
- <sup>iv</sup> For a summary of the Green Deal see <http://www.decc.gov.uk/assets/decc/legislation/energybill/1010-green-deal-summary-proposals.pdf>
- <sup>v</sup> <http://www.energysavingtrust.org.uk/Publication-Download/?oid=1650348&cg=corporatedocs&ci=energyst>
- <sup>vi</sup> <http://www.decc.gov.uk/assets/decc/legislation/energybill/1002-energy-bill-2011-ia-green-deal.pdf>
- <sup>vii</sup> [http://www.decc.gov.uk/assets/decc/Statistics/analysis\\_group/81-iaq-toolkit-tables-1-29.xls](http://www.decc.gov.uk/assets/decc/Statistics/analysis_group/81-iaq-toolkit-tables-1-29.xls)
- <sup>viii</sup> <http://www.communities.gov.uk/documents/planningandbuilding/pdf/1820140.pdf>
- <sup>ix</sup> 19.4% rural dwellings failed on thermal comfort standards, as opposed to 18% all city and urban areas, and 13% of suburban areas (Summary Statistics Table SST3.3: Decent homes – area); the SAP rating of rural homes is 43.2, compared to 51.3 in city and urban areas; and 35.6% rural homes have an F or G energy efficiency rating, compared to only 16.1% in city and urban areas (EHCS 2007 Report).