



Energy Performance of Buildings - Energy Performance Certificates and Display Energy Certificates

Key issues

EPCs required for all social rented and private rented buildings by 1st October
DECs required for public buildings by 1st October 2008
EPCs must be produced by an accredited assessor
Measure introduced for public buildings, air conditioning systems and boiler and heating systems
APSE survey attached on capacity to manage EPCs/DECs

1. Introduction

The European Directive on the Energy Performance of Buildings (EPBD) is a key part of strategies for tackling climate change and Energy Performance Certificates and Display Energy Certificates have emerged from this directive. They have been introduced as part of the government's aim to address climate change by promoting the improvement of the energy performance of buildings. Nearly 50% of all carbon emissions come from buildings and non-dwellings are responsible for almost 20 per cent of the UK's energy consumption and carbon emissions.

The way a building is constructed, insulated, heated, ventilated and the type of fuel used, contribute to its energy consumption and carbon emissions. The government is introducing a range of initiatives aimed at helping the UK improve energy efficiency and meet its carbon emission reduction targets, including:

- Energy Performance Certificates (EPCs) for homes and buildings
- Display Energy Certificates (DECs) for public buildings
- inspections for air conditioning systems; and
- advice and guidance for boiler users.

The laws will only apply in England and Wales. Scotland and Northern Ireland are both introducing their own regulations.

The certificates must be provided by law for rented homes and public buildings by 1st October 2008 and there is an impact on local authorities workload up to and following that date. Air conditioning systems will need certificates in 2009 and 2011 depending on capacity.

2. Timetable for introduction of energy performance measures for buildings

Table 1. Timetable for introduction

What is affected?	What is required?	When will it be required by law?
Homes – when sold (marketed sales only)	EPC	Phased from 1 Aug 2007
All remaining Homes – when sold (non marketed sales)	EPC	From 1 Oct 2008
Homes – when built	EPC	From 6 Apr 2008
Homes – when rented	EPC	From 1 Oct 2008
Commercial buildings > 10,000m ² – when built, sold or rented	EPC	From 6 Apr 2008
Commercial buildings > 2,500m ² – when built, sold or rented	EPC	From 1 Jul 2008
All remaining commercial buildings – when built, sold or rented	EPC	From 1 Oct 2008
Public buildings > 1000m ²	DEC – displayed at all times	By 1 Oct 2008
Air conditioning systems > 250kW	First inspection	By 4 Jan 2009
Air conditioning systems > 12kW	First inspection	By 4 Jan 2011

3. Energy Performance Certificates

EPCs are intended to inform potential buyers or tenants about the energy performance of a building, providing an energy rating for a building based on the performance potential of the building itself and its services (such as heating, ventilation and lighting). The ratings are standard so they can be compared between buildings. A recommendations report is attached to the certificate, providing information about ways to improve the energy efficiency of the building and a rating if all recommendations are implemented, together with an indication of the payback period. Examples of improvements could be the uses of low energy light bulbs, loft insulation and cavity wall insulation. However there is no obligation to implement the recommendations.

EPCs rate the energy efficiency and carbon emissions of a property on a scale of A to G where A is best. The certificate provides information to enable the potential buyer or tenant to consider energy efficiency as part of their decision to occupy or buy that building.

It is the responsibility of the person selling or renting to have an EPC to show prospective buyers and tenants and to give to the eventual buyer or tenant. There is no requirement to provide an EPC unless a building is being sold or let.

An EPC is only required for a building when constructed, sold or let with a building defined as “a roofed construction having walls, for which energy is used to condition the indoor climate, and a reference to a building includes a reference to a part of a building which has been designed or altered to be used separately”. Heating, mechanical ventilation or air-conditioning condition the indoor climate, but hot water services and electric lighting do not.

An EPC must include the asset rating, a recommendations report, reference information (such as a unique certificate reference number and date of issue), the energy assessor details and information on how to complain or how to confirm the certificate is genuine.

EPCs must be produced by an accredited assessor. To be accredited, an assessor must be registered with an accreditation scheme. It is the scheme’s responsibility to ensure the assessor is competent and that periodic quality checks are carried out on the assessor’s work. They can only be produced using government approved software that uses standard energy rating methods. The assessor will visit a property to collect relevant information. They may provide EPCs based on information gained from a sample survey of similar buildings. Assessors who are employees of the landlord must act in an independent manner and be a member of a government approved accredited scheme.

There are 3 main steps to performing an assessment

- data collection – including looking at plans, dimensions, its uses, the number of floors, the amount and type of glazing, the heating systems and the fuel used
- analysing the information and identifying different zones of a building
- entering the information into an approved software programme.

All EPCs are stored in a national register, lodged by assessors after production with the register split into dwellings and non-dwellings.

EPCs are not required for

- temporary buildings with a planned time of use of less than 2 years
- stand alone buildings with a total useful floor area of less than 50m² that are not dwellings
- buildings for sale or rent to be demolished
- industrial sites, workshops and non-residential agricultural buildings with low energy demand

Transactions not considered to be a sale or let include lease renewals or extensions, compulsory purchase orders, sales of shares in a company where buildings remain in the company ownership and lease surrenders.

4.1 Requirements for landlords

The landlord must commission an EPC and ensure a copy of it, including the recommendation report, is available free of charge to prospective tenants. As a minimum, this should be when prospective tenants are first given written

information about a dwelling or are arranging to view it, and before any rental contract is entered into with a copy being given free of charge to the person who ultimately becomes the tenant. There is no obligation on the landlord to implement the recommendations.

The landlord is not required to produce an EPC when an existing lease is renewed, only when the tenant changes. EPCs are valid for 10 years and can be reused for new tenants as many times as required within that period. If a new EPC is commissioned, this becomes the only valid one.

4.2 Methodology

The energy performance of existing dwellings is determined using a government approved domestic energy model known as Reduced data Standard Assessment Procedure (RdSAP), a streamlined version of the Standard Assessment Procedure (SAP) into which data for new build dwellings is entered from drawings and specifications. The RdSAP model has been incorporated into several government approved software packages which also generate the certificates and recommendations report.

As a general rule an assessor should visit a dwelling before issuing an EPC. However existing data can be used to create EPCs provided that the assessor is satisfied it is accurate and current, so reducing the time spent on site gathering data. In some cases existing data may provide more accurate data than could be acquired from a site survey. We envisage three main sets of circumstances in which this might operate:

- where cloning techniques are used for large amounts of similar stock. Here the assessor would be expected to visit a sample of dwellings: EPCs would be issued on the basis of the similarity of dwellings to the sampled dwellings (see below)
- where a landlord already holds extensive and up-to-date data about the energy efficiency performance of the stock. This data can be used to create EPCs, although the assessor would be expected to visit a sample of dwellings to verify the data or
- where the assessor has already issued an EPC for the dwelling and is now issuing an updated version to take account of evidence of improvement works

4.3 Cost of certificates

The cost of certificates will be set by the market

4.4 Penalties

Local authorities, usually via their Trading Standards Officers are responsible for enforcement. If asked for a copy of the certificate it must be provided within 7 days or be liable for a penalty charge notice. A copy of an EPC can be requested at any time up to 6 months after the last day for compliance with when the duty was to make it available.

The penalty for failing to make an EPC available to any prospective buyer or tenant when selling or letting non-dwellings is fixed in most cases at 12.5% of the rateable value of the building.

There is a defence if you have a proper request for an EPC to an appropriate person at least 14 days before it was required or where you rent to a tenant in an emergency requiring urgent relocation.

4.5 Producing multiple EPCs

There are options available for social landlords who have large housing stocks but for whom individual certificates would be impractical. The 2 alternatives – common values approach and sampling and multiple certification – are described below.

4.5.1 A common values approach

The common values approach for producing EPCs is appropriate for dwellings that share some similar characteristics for example, where similar properties differ in build type, glazing type or heating type. The process for this option follows:

Step 1 – divide the stock into groups of dwellings that share similar characteristics from the asset management database

Step 2 – identify elements which are common to all dwellings, e.g. age band, build type or heating system

Step 3 – identify elements which are different and customise the database on the basis of these, e.g. different types of glazing, a top floor flat from a ground floor flat within a block or different levels of insulation. It is suggested that where more than 6 differences exist between dwellings the common values approach is not suitable

Step 4 – the assessor will visit a number of dwellings to confirm the differences noted. Once confirmed the assessor will enter a number of dwellings to produce an EPC. The number of properties to be visited depends on the size of the group (see Table 2 below)

Case study 1 - Two flats in a block are identical in all respects except one is on the top floor and one is on the middle floor. The top floor flat has been surveyed and the dataset for the middle floor flat is created from this, by removing reference to a heat loss roof.

Case study 2 - The end of terrace dwellings have been surveyed and EPCs for mid terrace properties are created by adjusting the area of the external walls.

Case study 3 - Tenants have been given a choice of whether to have a traditional or combination gas boiler. EPCs based on a sample of surveyed dwellings are created by entering the correct form of heating system for each dwelling where centrally held records exist which accurately denote the boiler type in each property.

Where the landlord has invested in creating a comprehensive database of the energy characteristics of the stock this may lead to streamlined EPC production. However the assessor should be satisfied that the data is accurate by visiting a sample of the dwellings (see Table 2 below).

4.5.2 Sampling and multiple certification

The process for this option is as follows

Step 1 – divide the stock into a number of groups of similar dwellings to which sampling can be applied with the main grouping principle being that the grouped

properties are likely to have the same energy efficiency characteristics. The following selection criteria may be used as a suggestion

It is suggested that the following selection criteria are applied in sequence:

- a. Divide the portfolio into properties to be included/excluded from the assessment – exclude those with a low tenant turnover or those known to be unique or unusual
- b. Divide the properties which are to be included into geographically distinct groups – to ensure they are in the same degree day region⁴ and that travel times will be minimised
- c. Divide each group from the previous step into properties with the same age and built-form
- d. Divide each group from the previous step into properties of the same size /number of bedrooms
- e. Divide each group from the previous step into properties with the same space and water heating fuel
- f. Divide each group from the previous step into properties with the same space and water heating system – take the age of the system into consideration if available
- g. Divide each group from the previous step into properties with the same glazing type, loft and wall insulation

At each stage there will be properties that can be taken forward to the next stage and also properties which will be subject to individual inspection to produce an EPC for that property if one is required.

Step 2 – On receiving a list of the properties and a definition the DEA should visually inspect each property externally, to check there are no non-standard properties that should be removed from the group. The size of sample selected should follow the table below

Table 2. Dataset sample size

Size of Group	Sample Size	Example
10 properties or fewer	50%	If there are 6 dwellings in a group, at least 3 would need to be surveyed
11 – 50 properties	5 plus (30% of group minus 10)	If there are 37 dwellings in a group, at least 14 would need to be surveyed (5 plus 30% of 27)
Over 50 properties	15 plus (10% of group minus 50)	If there were 250 dwellings in a group, at least 35 would need to be surveyed (15 plus 10% of 200)

Once the sample size is known, the actual selection of properties can take place with a built in contingency to take account of potential non access. The sample should include both a geographical spread and a selection of different designs of property. Issues to be considered when arranging visits include:

- notification of visits for tenants

- accompanied visits
- a history of access problems
- void properties – these should be included

Once the selection is agreed the assessor will carry out the surveys, enter data into suitable software and produce the EPCs and recommendations reports.

Step 3 – the next step is to analyse the data collected and confirm that the group is coherent. The principle being followed is to identify the ‘typical’ result from the sampled properties. If the variation is sufficiently small it will be reasonable to use the typical result as the basis for providing EPCs for those properties that were not inspected. The typical record is considered to be the median record when ranked by

- increasing energy efficiency (SAP) rating, then
- increasing environmental impact rating, then
- decreasing floor area

If following the analysis of the initial sample the results are outside set tolerance limits there is a process to follow to identify exceptions and traits and possibly undertaking further samples. It is the landlord who decides whether to extend the sampling.

After this process there should be one of two outcomes. It will be either a set of EPCs for the surveyed properties, a dataset for a median EPC (if tolerance levels are met), EPCs created from the median for other dwellings in the group and EPCs for exceptional properties surveyed but falling outside the tolerances. Alternatively the outcome will be EPCs for the surveyed properties only because access difficulties prevented sufficient samples being carried out or results varying too widely to enable an acceptable median value to be generated.

Using the process outlined here, EPCs produced for the sample dwellings cannot be used to create EPCs for the whole stock.

4. Display Energy Certificates

Public buildings will need to show a valid DEC at all times from 1st October 2008. DECs show the actual energy usage of a building and help everyone to see whether public authorities are running to high standards of energy efficiency. Public authorities, and institutions providing public services to a large number of persons, who occupy space in a building with a total useful floor area greater than 1000m², must display a valid DEC and have a valid advisory report in their possession. The certificate is valid for 1 year and the advisory report is valid for 7 years. The certificate will show an operational rating which conveys the actual energy used by the building (as opposed to an EPC which conveys an asset rating showing the intrinsic performance of the building).

Only public authorities or public institutions (those providing services traditionally associated with local or national government) occupying a building must display a DEC. Other private occupants of the same building are not required to display a DEC. If the building is sold or let, it will additionally require an EPC. If the building has an EPC, the asset rating will need to be included on the DEC.

To make it easier for public authorities with multiple buildings on one site to comply with the legislation, a site-based approach for the first year is to be allowed where it is not possible to produce individual DEC's. This means that only one DEC will need to be produced based on the total energy consumption of the buildings on the site. Public bodies most likely to be affected by this approach are NHS Trusts, universities and schools.

5. Air conditioning Inspections

As the number of buildings with air conditioning systems increases, the government is requiring mandatory inspections to ensure air conditioning systems are carefully managed and maintained in order that they do not consume too much energy.

The first inspection of all existing air-conditioning systems over 250 kW must have occurred by 4 January 2009. The first inspection of all remaining air-conditioning systems over 12 kW must have occurred by 4 January 2011. The inspection will include an assessment of the efficiency of the system with advice on improvements or replacements, as well as alternative solutions.

6. Advice and guidance for boiler users

More than 50 per cent of the total energy consumption and CO₂ emissions for buildings come from heating and hot water use. To help to reduce this, a new energy advice programme for heating and hot water systems in partnership with the heating and hot water industry is being launched. This programme encourages heating and boiler installers to provide basic energy advice to users about the energy efficiency of their heating and hot water systems. This advice is given in the form of a checklist and also includes recommendations.

7. Comment

The ability of councils as landlords to issue EPCs will be dependent upon both the resources they have at hand, the scale of the stock, the currency and scope of the existing asset management database and whether they wish to take a proactive or reactive approach.

The guidance notes that a proactive approach may be more appropriate for a landlord with a higher turnover of tenants and reduce any potential impact on void turnaround times. Equally it would be less cost effective when tenant turnover is low. A reactive approach means producing EPCs as and when needed with the accompanying requirement to have them produced quickly.

The process is a further issue for councils to consider as part of their voids management procedures. Keeping this process to as short a timescale as possible has impacts on costs as well as rental income. Although there may be occasions when it is possible to offer a dwelling for rent before an EPC is available, this is not expected to be norm. It would therefore appear that each council is expected to take a proactive approach unless there is a good reason not to do so.

The quality of data found on asset management databases will impact upon the requirements of visits made by assessors and landlords should bear in mind that this is an opportunity to update their records as well as gaining data for EPCs. It may be

cost effective to use the visit to collect data in addition to that needed for an EPC. Landlords will have to negotiate this with assessors as part of contract negotiations.

There is no doubt that councils will want to put arrangements in place to ensure EPCs can be produced quickly, accurately and as cost effectively as possible. It may be that they decide to put existing staff through the assessor training. For those authorities with large numbers of council houses, public buildings and air conditioning systems, producing certificates will be a significant undertaking and they may wish to use external support.

The common values approach or sampling and multiple certification will offer significant cost savings but this will be dependent upon the types of property in the housing stock as well as the existing approach to stock condition surveys.

Needless to say these certificates are not an end in themselves. Councils and other public service providers own and manage large numbers of buildings and must be seen to set a relevant example in addressing reductions in energy use and emissions. Incorporating this certification process into existing asset management plans is an important step for councils and they should build any recommendations into planned improvement works.

8. APSE survey

APSE is interested to know to what extent councils feel issuing these certificates will be a drain on existing resources, whether they have the capacity to carry out surveys, produce and issue certificates and what arrangements they expect to put in place to meet this duty.

We have put a survey together to collect this information and would be grateful if you could complete it via the following web connection. It will take less than 2 minutes to complete but will provide some important information to be shared amongst councils.

If you wish to complete the survey, click on the weblink below

http://www.surveymonkey.com/s.aspx?sm=VROJvUhVpHrfzN60JIIOJw_3d_3d

APSE best value consultancy is able to support councils to provide this function as the consultancy has a number of qualified and accredited energy assessors.

For more information on the APSE best value consultancy click on the weblink below

www.apse.org.uk/consultancy.html

9. Further information

Further information on EPCs, DEC's and other measures is available at www.communities.gov.uk/epbd

Documentation

Improving the energy efficiency of our homes and buildings
Available at

<http://www.communities.gov.uk/documents/planningandbuilding/pdf/714826.pdf>

Energy performance certificates for dwellings in the social and private rented sectors: a guide for landlords

Available at

<http://www.communities.gov.uk/publications/planningandbuilding/epclandlordguide>

Energy performance certificates for dwellings in the social and private rented sectors: a guide to generating Energy Performance Certificates for similar dwellings owned by the same landlord

Available at

<http://www.communities.gov.uk/documents/planningandbuilding/pdf/epcsforlandlord.pdf>

Improving the energy efficiency of our buildings: a guide to energy performance certificates for the construction, sale and let of non-dwellings (2nd edition)

Available at

<http://www.communities.gov.uk/publications/planningandbuilding/nondwelling>

Improving the energy efficiency of our buildings: a guide to display energy certificates and advisory reports for public buildings

Available at

<http://www.communities.gov.uk/publications/planningandbuilding/displayenergycertificates>

Energy Performance Certificates (EPCs) and new homes; a buyer's guide

Available at

<http://www.communities.gov.uk/publications/planningandbuilding/epcsbuildersguide>

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