Department of Energy & Climate Change

Exploring the use of Display Energy Certificates

July 2013

Contents

Summary

Background

Since October 2008 there has been an obligation to display a Display Energy Certificate (DEC) in a prominent place in buildings occupied by public authorities and institutions providing public services where the total useful floor area of the building exceeds 1000m^2 and the building is frequently visited by the public. Since the research was undertaken changes have been made to The Energy Performance of Buildings (England and Wales) Regulations 2012 (as amended) which came into force in January 2013[1] which reduced the size threshold to 500m² and removed the requirement for institutions providing public services to large numbers of people that are not public authorities. There is no statutory requirement on private sector organisations to have a DEC but they may voluntarily choose to have one.

The purpose of introducing DECs was to raise public awareness of energy use and to inform visitors to public buildings about the energy use of a building. It is the responsibility of the occupier of a building to display a valid DEC which must be renewed every 12 months for buildings over 1,000m^2. DECs provide an energy rating of the building from A to G, where A is very efficient and G is the least efficient (and are based on the ***actual*** amount of metered energy used by the building over a period of 12 months). The DEC is accompanied by an advisory[2] report that may contain a range of possible improvements, including cost-effective measures that may be implemented to improve the energy performance of the property. Advisory reports are required every seven years for buildings over 1,000m^2.

Research objectives

The overall objective of the research is to explore how the various elements of DECs influence energy management and decision-making. Within this over-arching aim there are six key objectives. These are to explore:

- the costs involved in obtaining a DEC for the first time and for their subsequent renewal;

[1] The Energy Performance of Buildings (England and Wales) Regulations 2012 came into force on 9th January 2013 and brought with it additional requirements in relation to Display Energy Certificates and Energy Performance Certificates. The amended regulations made two fundamental changes to DECs: 1) the size threshold for buildings was reduced from over 1000m² to over 500m². The size threshold will be reduced further to 250m² on 9th July 2015; 2) the requirement no longer applies to institutions providing public services to large numbers of people that are not public authorities. While the DEC must be renewed annually for buildings over 1000m², for smaller buildings DECs will be valid for 10 years.

[2] Referred to as a 'Recommendation Report' in The Energy Performance of Buildings (England and Wales) Regulations 2012 (as amended).

- how DECs can help an organisation to better understand its level of carbon emissions and energy usage;
- how the information collected when obtaining or renewing a DEC can help to improve energy efficiency;
- how organisations use DECs to help reduce their energy consumption;
- the effect of publically displaying a DEC on decision-making within the organisation; and
- the impact of the DECs benchmarking and letter rating on energy consumption behaviour.

Research method

The research is small-scale and wholly qualitative in nature comprising 19 public sector buildings that had a private sector equivalent[3] and four local authorities (representing eight buildings), seven private sector businesses that had a DEC and eight private sector businesses that did not have a DEC. Buildings were selected to provide a broad spread in terms of: floor space, DEC letter rating, whether the DEC letter rating had improved or deteriorated, whether the building was listed, had more than one DEC, or had air conditioning. The public sector organisations were sourced through a database made available by DECC; the private sector organisations with a DEC were primarily sourced via the British Property Federation; the private sector organisations without a DEC were recruited using 'free-find' methods.

The majority of the interviews were conducted face-to-face, with a small number by telephone, over the period 1st October 2012 to 30th November 2012.

Obtaining a DEC

Organisations varied considerably in their engagement with energy management. Those least engaged were characterised by the responsibility for energy management falling to a single individual in the organisation, a lack of senior management engagement, no specific energy management budget and no involvement in any green initiatives.

Public sector organisations thought that the costs of an individual DEC, both the initial time-costs (ranging from £50 to £500 plus some direct costs per DEC) and the subsequent renewal (ranging from £25 to £280 plus some

[3] The public sector sample was designed to allow for some comparability with commercial buildings. Consequently there was greater coverage of offices and local government buildings than schools or fire stations (which will be less common – and may not have – a private sector equivalent).

direct expenses)[4] were inexpensive. Organisations that used an external assessor to carry out the assessment generally had lower time costs. However, the direct costs ranged from £100-£600 for the initial DEC and £100-£350 for renewals. Private sector organisations that did not have a DEC and expressed little interest in energy management and could not see themselves paying these sorts of amounts for a DEC.

There did not appear to be any link between the costs of a DEC and the quality of assessment or follow-up advisory report. In this respect organisations said they found it difficult to distinguish between assessors, other than on cost.

How a DEC increases knowledge and informs changes in behaviour about energy management

For organisations that are not particularly engaged in energy management, collecting the information required for a DEC can lead to a better understanding of energy usage and can indicate buildings in a portfolio that are particularly energy efficient, or inefficient. The DEC can also promote a reduction in energy usage by providing building managers with evidence to help make a case to senior managers for making changes resulting in greater energy efficiency. For organisations that are engaged in energy reduction initiatives, the DEC helps to confirm which buildings are inefficient or those buildings that are not operating according to their design predictions.

While the advisory report should provide detailed recommendations with a range of timescales, organisations did not consider that in their experience this was the case. They wanted information and guidance that was more readily useable: with advice that was tailored to the building and the budget available; recommendations that were achievable according to the level of investment the organisation was willing to make; and an explicit and an accurate discussion of the costs and benefits of the recommended changes. A face to face discussion with a qualified engineer or assessor would also considerably enhance the value of the DEC, although organisations recognised that this would increase the cost of the DEC.

If combined with a promotional campaign, the value of the DEC was thought to be considerably enhanced. For example, the more progressive organisations used the DEC in conjunction with competitions between buildings; myth busting, such as a public sector organisation that would display an energy myth in a staff rest room together with a ‘fact’; and live dashboards, that are accessible to all staff; and display energy consumption information either ‘live’ or on a daily or weekly basis.

[4] VOA data suggests a range of £300 – 750 as being typical costs for a DEC. It is difficult to make comparisons as the VOA data covers all government buildings whereas the costs presented here reflect a small sample of public sector buildings (including government buildings) and break the costs down in different ways.

The role of the DEC in promoting energy conservation

As a promotional device, the DEC was highly regarded for its ability to provide a clear indication of actual energy usage over the year as well as trend information. It was said to be very easy to include in business reports, marketing materials and in their corporate social responsibility (CSR) documents. The private sector organisations had mainly obtained a DEC in order to fully understand how the process of obtaining a DEC worked and to explore its value in presenting energy usage information. Some decided not to renew the DEC as they found other initiatives more useful. Some commercial landlords believed that DECs could help them to command higher rental prices if take-up increased across the commercial sector because DECs, unlike Energy Performance Certificates (EPC), are based on energy usage and therefore could be used to demonstrate low operational costs for tenants.

However, DECs are said to have a limited effect on energy use because, in the view of public and private sector organisations: neither the public nor staff are aware of it; the benchmarking was often poorly understood or considered to be inappropriate for the organisation; the letter rating is potentially de-motivating as it is too coarse; and the G rating has a very long tail which makes it difficult for energy inefficient organisations to demonstrate improvement. A further limitation is that it reflects a building but as there is no requirement for DECs to reflect the organisation as a whole, some respondents commented that it was not possible to use their DECs to enhance organisational reputation.

Conclusions

Where energy management was of interest to organisations, the DEC was seen as one of many drivers of change and led in some instances to changes in their energy management practices, although cost savings, the Carbon Reduction Commitment (CRC), and other ‘green’ initiatives often played a greater part. Despite this, the DEC was seen as useful because: the process of information gathering had a positive impact on knowledge and could act as a stimulus to change; the advisory report can help with negotiating energy management budgets and raise the internal profile of energy consumption; the format of the DEC can provide positive messages in terms of trend information; benchmarking can provide both a target and instigate competition between buildings and organisations; and it is seen as relatively inexpensive to undertake.

Organisations varied considerably in the value they placed on a DEC. While there were some organisations that considered that obtaining a DEC was a formality and of little value to them, others indicated that the DEC could be used in many ways to promote energy management. These include: helping to develop a culture of energy management in an organisation; promoting change through competition; enhancing the reputation of an organisation; and identifying the costs and benefits of making changes. The motivation to

take energy efficiency seriously and not having a budget available were often barriers to change.

Organisations that valued the DEC suggested that it can help to change the energy management culture by being part of a promotional campaign within an organisation. In this respect, the value of the DEC can be enhanced if it is combined with support materials that enable staff to promote energy management in their organisation.

As a mechanism for promoting change, the DEC was seen as fairly limited. Considerable enhancement of the DEC could occur through: reviewing the letter rating and considering a finer grain approach to the rating; raising awareness of the benchmarking aspects of the DEC; ensuring that the benchmarks are appropriate for the organisation; promoting trust in the benchmarks; and the development of league tables, either at a national level, or 'organisational type' level, such as a league table for museums, universities, theatres, etc.

As a reputational driver the DEC was thought to be lacking in impact, with many organisations claiming that they did not think that the public, nor their staff, were aware of the DEC, or what it meant. Organisations with multiple DECs thought that a 'super DEC' that reflected the organisation as a whole, rather than individual buildings would be much easier to use when promoting their organisation.

Many organisations reflected on the lack of detail in the advisory report. By making the advisory report more practical, organisations are likely to consider the recommendations more seriously and provide the cost-benefit arguments that senior managers require when making decisions. They require an advisory report that is less generic in the information that is provided. While the advisory report should provide tiered information over different timescales, organisations do not consider this is useful because the actual costs of the recommendations are not provided. They require tailored information that takes into account the budgetary constraints of the organisation; a set of recommendations with clear costs and benefits; the 'quick wins' identified and longer term recommendations suitably prioritised in terms of pay-back times; and practical information about further sources of information and grant-funding.

Organisations are particularly keen on receiving face-to-face tailored advice from a suitably qualified assessor or engineer, recognising that this would cost more than the standard advisory report, but which would considerably enhance its value.

1. Introduction

1.1 Background

Since October 2008 there has been an obligation to display a Display Energy Certificate (DEC) in a prominent place in buildings occupied by public authorities and institutions providing public services and that occupy buildings where the total useful floor area of the building exceeds 1000m^2 and the building is frequently visited by the public. Since the research was undertaken changes have been made to The Energy Performance of Buildings (England and Wales) Regulations 2012 (as amended) which came into force in January 2013[5] which reduced the size threshold to 500m² and removed the requirement for institutions providing public services to large numbers of people that are not public authorities. There is no statutory requirement on private sector organisations to have a DEC but they may voluntarily choose to have one.

The purpose of introducing DECs was to raise public awareness of energy use, to inform visitors to public buildings about the energy use of a building and to comply with the requirements of EU Energy Performance of Buildings Directive. It is the responsibility of the occupier of a building to display a valid DEC, which must be renewed every 12 months for a building over 1,000m^2.

DECs provide an energy rating of the building ranging from A to G (where A is very efficient and G is the least efficient) and are based on the ***actual*** amount of metered energy used by the building over a period of 12 months. The letter rating is based on the amount of energy consumed during the occupation of the building over a period of 12 months from meter readings and is compared to a hypothetical building with performance equal to one typical of its type (the benchmark).For buildings over 1,000m^2 the DEC also shows the Operational Rating (OR) for the previous two years. The OR is an assessment of how effectively the building is being managed.

Organisations must display a DEC in a prominent place that is clearly visible to the public and have a valid advisory report[6]. The advisory report may contain a range of possible improvements, including cost-effective measures

[5] The Energy Performance of Buildings (England and Wales) Regulations 2012 came into force on the 9th January 2013 and brought with it additional requirements in relation to Display Energy Certificates and Energy Performance Certificates. The amended regulations made two fundamental changes to DECs: 1) the size threshold for buildings was reduced from over 1000m² to over 500m². The size threshold will be reduced further to 250m² on 9th July 2015; 2) the requirement no longer applies to institutions providing public services to large numbers of people that are not public authorities. While the DEC must be renewed annually for buildings over 1000m², for smaller buildings DECs will be valid for 10 years.

[6] The penalty for failing to display a DEC where required is £500 and the penalty for not being in possession or control of an advisory report at all times is £1,000.

that may be implemented to improve the energy performance of the property. The report includes zero and low-cost operational and management improvements, possible upgrades to the building fabric or services, and opportunities for the installation of Low and Zero Carbon (LZC) technologies. An advisory report is valid for seven years for buildings over 1,000m^2.

The Department of Energy and Climate Change (DECC) commissioned this research to inform the implementation of Article 8 of the European Energy Efficiency Directive, which mandates energy audits for all non-SMEs. By exploring the effectiveness of the various components of a DEC, including the audit process and the requirement to display a certificate, the research will inform the UKs approach to meeting the Directive.

1.2 Research objectives

The overall objective of the research is to explore how the various elements of DECs can influence energy management and decision-making. Within this over-arching aim there are six key objectives. These are to explore:

- the costs involved in obtaining a DEC for the first time and for their subsequent renewal;
- how DECs can help an organisation to better understand its level of carbon emissions and energy usage;
- how the information collected when obtaining or renewing a DEC can help to improve energy efficiency;
- how organisations use DECs to help reduce their energy consumption;
- the effect of publicly displaying a DEC on decision-making within the organisation; and
- the impact of the DEC benchmarking and letter rating on energy consumption behaviour.

1.3 Research method

1.3.1 Design, sampling and recruitment

The research is small-scale and wholly qualitative in nature and designed to provide an understanding of whether and how public sector organisations in England and Wales, for which the DEC is mandatory[7], have used the DEC to increase their knowledge about energy management and change their energy consumption. In addition, two groups of private sector organisations were included, for whom the DEC is not mandatory. One group of private sector businesses had obtained a DEC, the other group had not. These

[7] As the research was conducted before recent changes to The Energy Performance of Buildings Regulations 2012 (as amended), the sample was based on the previous requirements, which exempted building where the floor space is less than 1000m^2.

businesses are included in order to explore the former group's reasons for obtaining a DEC and for the latter group their views about the potential value of a DEC to their business.

For each public sector building the intention had been to undertake a face-to-face interview with the person, or persons, most concerned with energy management and energy conservation decision-making. This would often be a Building Manager, Energy Manager, or a Carbon Reduction Officer. However, during the recruitment process it was found that local authorities had often centralised their energy management facilities, with the manager of individual buildings having a smaller role with respect to energy management. Consequently, in these cases a face-to-face interview was undertaken with the local authority Carbon Reduction Officer together with short telephone interviews with individual building managers.

The study comprised 19 public sector buildings and four local authorities (representing eight buildings). The public sector buildings were selected to have some comparability with commercial buildings. For example, the study included offices and local government buildings rather than schools or fire stations (which are less common, or do not exist, in the private sector). Buildings were selected according to the following criteria:

- Floor space;
- DEC letter rating;
- Whether the DEC letter rating had improved or deteriorated over time;
- Whether the building was listed;
- Whether the organisation had one or more buildings with a DEC;
- Whether the building has air conditioning.

The sample of public sector organisations specifically excluded schools and emergency services.

In addition, seven private sector businesses that had a DEC were included in the study as well as eight private sector businesses that did not have a DEC.

The public sector organisations were sourced through a database made available by DECC. As it was not possible to identify private sector organisations with a DEC from the database, they were primarily sourced via the British Property Federation; the private sector organisations without a DEC were recruited using 'free-find' methods. The selection criteria for the private sector organisations without a DEC were:

- Floor space;

- Whether the building was listed;
- Whether the building had air conditioning.

In addition, the private sector organisations were required to have some interest in energy management in order that the interviews could explore how the DEC might enhance their knowledge and / or ability to make changes.

Further details of the research design may be found in Appendix A.

It is important to note that the methods used in this research are qualitative in nature. This approach has been adopted to allow for individual experiences and views to be explored in detail. Qualitative methods do not allow data to be given on the numbers of people holding a particular view nor having a particular set of experiences. The aim of qualitative methods is to define and describe the range of emergent issues, rather than to measure their extent.

1.3.2 Fieldwork and analysis

All of the interviews were exploratory and interactive in form and were based on topic guides which allowed questioning that was responsive to the issues which arose during the course of the interview. Copies of the topic guides may be found in Appendix B.

The overall research approach and the topic guides were piloted with six public sector interviews during the week commencing 1st October 2012, with the main fieldwork being undertaken between the weeks commencing 18th October and 30th November 2012.

The face to face interviews lasted approximately 60 minutes and the telephone interviews up to 20 minutes. They were digitally recorded, with permission, and transcribed verbatim to allow detailed analysis. The transcribed interviews were subject to a rigorous content analysis (Matrix Mapping), which involved systematically sifting, summarising and sorting the verbatim material according to key issues and themes within a thematic framework. Further details of the analytical process used may be found in Appendix A.

The findings have been illustrated with the use of verbatim quotations. The quotations have been edited for clarity but care has been taken not to change the respondents' meaning in any way - alterations are shown using parenthesis and ellipses. Quotation attributions indicate whether the organisation is public or private sector and whether they have a DEC.

1.4 Report outline

Following this overview of the objectives, design and conduct of the research, the next four chapters discuss the research findings in detail:

Chapter 2 focuses on how public and private sector organisations engage in energy management and the initial and subsequent renewal costs of obtaining a DEC;

Chapter 3 considers how a DEC increases knowledge and informs changes in behaviour about energy management, discussing how DECs aid understanding of energy usage, help to improve energy efficiency and can lead to a reduction in energy usage;

Chapter 4 explores the role of displaying a DEC in promoting energy conservation by its public display, as a means of promoting energy conservation, and a tool for informing the public about energy management through the use of the letter rating and benchmarking information;

Chapter 5 draws the findings together and presents a set of conclusions.

2. Obtaining a DEC

Organisations varied considerably in their engagement with energy management, those least engaged being characterised by the responsibility for energy management falling to a single individual in the organisation, a lack of senior management engagement and no specific energy management budget. Public sector organisations thought that the costs of an individual DEC, both the initial costs and the subsequent renewal were inexpensive.

This chapter provides an overview of the organisations and businesses participating in the research. It provides a context for their views about how the DEC is used to increase knowledge about energy management and promote changes in energy consumption. The chapter also covers an estimate of the time and costs involved in obtaining the initial DEC and its subsequent renewal.

2.1 Engagement in energy management

2.1.1 Public sector organisations

Organisations tended to operate along a spectrum of engagement in energy management with some organisations being totally un-engaged and others very engaged in energy management. The characteristics of the two ends of the spectrum tended to be very different and are shown below in Table 1.

Table 1: Public sector engagement in energy management

No engagement in energy management	Engaged in energy management
• Limited focus on energy management • Limited energy reduction activities • Energy reduction measures are usually reactive and coupled with repair or refurbishment • Energy management may be the responsibility of one individual, often with multiple roles • No senior management focus, or buy-in for energy	• Specific focus on energy management • Actively undertakes energy reduction activities • Proactive about energy management; high level of monitoring; active staff engagement in energy reduction activities • Energy management is usually the responsibility of a carbon reduction team, often reporting to an estates management team

reduction. The primary focus is usually on the function of the organisation, rather than issues such as energy • Not involved in any 'green' initiatives • No specific budget for energy monitoring and management	• Senior management buy-in and active discussion of energy management • Often involved in 'green' initiatives; these may be generic, such as the Carbon Trust, Green Dragon Environmental Standard, ISO 50001, or industry specific schemes such as the Higher Education Green Gown Initiative • Allocated budgets for energy monitoring and management

The following are examples of the two approaches to energy management:

Engaged in energy management

'I think it is quite ingrained now. We know what we are doing. And as I say it is an important issue, and it is also I think from a Chief Executive's perspective a good news story at a time when there are lots of cons. The fact that we have reduced our carbon footprint by 23% or whatever we have done up to date is something good for him to talk about……..' (Public sector with DEC)

'It [energy management] has always been something that has traditionally been done. We have used systems software. I have been here about 6 years now as an Energy Officer, and it had always been traditionally done before that.' (Local Authority with DEC)

Not engaged in energy management

'It [energy management] just wasn't of real interest to them. They [management] didn't see the connection between a building that was poorly rated, and they were too busy on other things to really worry about it.' (Public sector with DEC)

'Not really [any interest in energy management]. If they were, it was mainly token….There was not a person who, in all the time that had it as one of their performance measures or anything like that.' (Public sector with DEC)

'He was trying, but he didn't get far because the upper management wasn't keen on energy.' (Public sector with a DEC)

Organisations that lay between the two ends of the spectrum tended to be characterised by either an interested individual or senior management buy-in but with a lack of budget. For example:

'We had been thinking of energy savings for years. We had done little bits and pieces, it was very piecemeal. Again it has been an issue of finding the finance to do the works, and occasionally bits of money have come up and we have done little bits here, there and everywhere, but nothing sort of joined up.' (Public sector with DEC)

It was also clear that some organisations had changed the level of their energy management activities over time. This was particularly so for the local authorities in the study that had been very active in the past, but with budgetary cuts and the loss of key personnel had down-graded their energy management activities.

2.1.2 Private sector organisations

Organisations engaged with energy consumption

The private sector companies with a DEC in this study were very engaged with energy management. This was to be expected as they had voluntarily obtained a DEC, or were involved in other schemes which helped them reduce energy consumption. Like the public sector, private sector organisations also said that, as a result of rising energy prices, senior management and tenants (in the case of landlords) were increasingly concerned about energy efficiency as this was a way of reducing costs.

Organisations recruited via the British Property Federation were generally commercial landlords or property managers. The reputational impact of having a DEC, or demonstrating their energy efficiency to the public was a 'nice to have' although these organisations were not always convinced that many people cared about how energy efficient companies were for this to affect where they chose to shop or what services they used.

'There are so many different markers for wanting to have greener buildings… from investment, public relations, corporate responsibility. The industry wants to be seen in a good light. There are just so many different markers for wanting to improve your building stock.' (Private sector with a DEC, but not renewed)

Organisations not engaged with energy consumption

The study included private sector organisations that did not have a DEC. In order to be able to draw some comparisons with private sector organisations that did have a DEC – and were very engaged with energy management - those without a DEC were selected on the basis of their interest in managing their energy consumption.

'Yes it's [energy management] very important….Because it's so expensive to run. (Private sector, no DEC)

Their reasons for not having a DEC were generally threefold:

- A lack of awareness about DECs;
- A view that it was too expensive to have a DEC;

  'I would have to convince somebody that it's worthwhile [obtaining a DEC] …And I can't see, without showing that we're not being as energy-efficient as we can, the need to produce it and pay for it…….Because to me it's probably £250 a year wasted money.' (Private sector, no DEC)

- A view that as a tenant, they were not in a position to obtain a DEC.

  'As we have got little or no control because it is rented property, I think it would be more useful for a landlord who is renting out the property to say "Oh, and by the way, you are going to be very energy efficient"…….For the tenant I don't think there is a huge relevance.' (Private sector, no DEC)

2.2 The costs involved in obtaining a DEC

The costs involved in obtaining and renewing a DEC are only discussed in relation to public sector organisations. This is because there were only a handful of private sector organisations taking part in the research and few could recall the costs, primarily because most of them had not renewed their DEC. Obtaining a DEC for these organisations was a way to research the DEC scheme and look at the technical detail. Because of this they could not separate their research time from the time spent doing the DEC.

It should be noted that the cost of a DEC is market driven and will vary according to the type of building being assessed and the pricing policy of the assessor.

2.2.1 The initial DEC costs

In discussing the costs of obtaining a DEC for the first time with public sector organisations, information could not be obtained for all the organisations participating in the study. This was in part because the respondent had not been part of the organisation when the DEC was first obtained and did not know what the processes were in obtaining a DEC or where to find the information. Some of the organisations were able to provide very accurate costs, based on invoices and recorded time; others estimated the initial cost of obtaining a DEC.

Some of the organisations undertook the DEC in-house. For these organisations there were a number of fixed costs (such as training, software, etc.) as well the time costs of undertaking the DEC. Other organisations contracted out the process, their costs comprising the cost of the contractor plus some internal time for showing the contractor around the property and collecting energy consumption figures. When estimating time costs,

organisations generally indicated that the person most involved in collecting the information required to set up the DEC and providing the energy consumption figures was a facilities manager or energy manager quoting salaries ranging between £18,000 and £23,000 per annum and used this to estimate the time costs.

Costs for obtaining an initial DEC varied considerably, and are shown in Table 2 below. In this small, purposively selected sample, the cost estimates tended to cluster more towards the lower end of the range, with only a small number reflecting higher costs. The costs shown in Table 2 were the costs for an individual DEC for the organisations participating in this study[8]. The total costs for an organisation could therefore vary considerably, ranging from around £150 for an organisation that required a single DEC and contracted out the service, to £90,000 for an organisation that required nearly 200 DECs and undertook them all in-house.

Table 2: Initial costs of obtaining a DEC

<table>
<tr><th colspan="4">DEC undertaken in-house</th></tr>
<tr><td colspan="2">In-house time</td><td colspan="2">In-house time costs</td><td>Direct costs</td></tr>
<tr><td>Minimum</td><td>Maximum</td><td>Minimum</td><td>Maximum</td><td></td></tr>
<tr><td>Energy manager – 1 day
Facilities manager (1 per building) – 0.5 days</td><td>Energy manager - 4 days
Facilities manager (1 per building) – 0.5 days</td><td rowspan="2">£150</td><td rowspan="2">£500</td><td rowspan="2">Training costs / Assessor registration fee: £300 (Training ranged from 2 to 16 days with most between 1 and 3 days. The 16-day training course included training on energy management and energy reduction.
Training</td></tr>
<tr><td colspan="2">Depends on size of building and existing record keeping. Also chasing facilities managers for energy bills and floor plans etc.</td></tr>
</table>

[8] We are aware that other research indicates different costs. The VOA data suggests a range of £300 – 750 as being typical costs for a DEC and accompanying Advisory Report. It is difficult to make comparisons as the VOA data covers all government buildings whereas the costs presented here reflect a small sample of public sector buildings (including government buildings) and break the costs down in different ways.

				time: £300 Software: ranged from Nil to £1500 Travel: variable DEC registration: £15.35 Printing / framing: £10 - £15
DEC contracted out				
In-house time		In-house time costs		Direct costs
Energy manager - 2 hours	Energy manager - 1 day	£50	£200	Ranged from £100 to £600

The costs of obtaining an initial DEC varied widely for a number of reasons:

- The number of buildings and the amount of travel time required;
- The complexity of the monitoring requirements. For example, the number and location of the meters that needed to be included in the energy monitoring. Some organisations already had a system for recording energy consumption, others became more organised with the introduction of the DEC, with the time for setting up monitoring systems being reflected in the costs;
- Where the initial DEC was contracted out, the costs seemed to vary according to whether it was a specialist assessor that undertook the service or an existing general contractor, with the latter generally being cheaper;
- It was also clear that organisations did not have a clear view of how much it should cost to set up an initial DEC, nor how to choose between assessors and the services they offered. There appeared to be very little shopping around and providing the cost looked 'reasonable' it was accepted.

One public sector organisation also paid £4000 for their DEC and a full energy survey and audit, although it was evident that they were not clear about the cost of the DEC and the cost of the energy audit, assuming that the energy audit was part of the DEC process.

2.2.2 DEC renewal costs

The costs of annually renewing a DEC for the public sector organisations participating in this research are shown in Table 3. Organisations were more likely to be able to provide actual costs for DEC renewal, although time costs were usually estimated. As with obtaining an initial DEC, the costs for renewing a DEC also varied considerably. In this small, purposively selected sample, the cost estimates tended to cluster more towards the lower end of the range, with only a small number reflecting higher costs. The costs shown in Table 3 were the costs for an individual DEC. The total costs for an organisation varied considerably, ranging from around £33 for an organisation that required a single DEC and contracted out the service, to £40,000 for an organisation that required nearly 200 DECs and undertook them all in-house.

As with the initial DEC, the same cost assumptions apply.

Table 3: DEC renewal costs

DEC undertaken in-house				
In-house time		In-house time costs		Direct costs
Minimum	Maximum	Minimum	Maximum	
Energy manager - 1.5 hours Facilities manager (1 per building) – 0.5 hrs	Energy manager - 3.5 hours Facilities manager (1 per building) – 0.5 hrs	£25	£280	Training time (where required): £300 DEC registration: £15.35 Printing: £5
DEC contracted out				
In-house time		In-house time costs		Direct costs
Energy manager - 1 hour	Energy manager - 2 hours	£33	£160	Ranged from £100 to £350

While the costs of renewing a DEC varied widely there was no clear link between the amount paid and the quality of the report or advice they

received. Despite this, public and private sector organisations that had a DEC thought that the costs were generally reasonable. Private sector organisations that did not have a DEC were much more concerned about the costs involved of obtaining a DEC.

'As I said, for the price that we pay now they are very cheap. We don't lose anything by doing it because now [the] process is streamline, it's really straightforward, it's really easy, and it's fine.' (Public sector with a DEC)

'We haven't seen the actual cost of producing this DEC to be that expensive.' (Public sector with a DEC)

'There is no way on earth I would do it [get a DEC]…..My accounts lady would not spend half a day doing that, she is too busy. And if it costs £1 I may consider it; if it is £250 to £300, no……As our energy providers have already done this free of charge.' (Private sector, no DEC)

3. How a DEC increases knowledge and informs changes in behaviour about energy management

Collecting information required for a DEC can lead to a better understanding of energy usage and indicates how effectively a building is used. DECs can also promote a reduction in energy usage by providing evidence to building managers that can be used to influence senior managers and decision makers. Although DECs provide recommended actions for short, medium and longer time scales, overall, organisations considered that DECs would be enhanced if the advisory report provided less generic information.

3.1 How DECs lead to a better understanding of carbon emissions and energy usage

As discussed in chapter 2 there was a very wide variation in energy monitoring across the public sector organisations. It was clear, however, that those organisations that had a history of closely monitoring their energy consumption and were systematic about employing frequent and accurate methods of measurement had a clearer picture of how efficiently they used energy. A summary of how DECs helped organisations understand energy management may be found in table 4, below.

Table 4: Summary of how DECs helped organisations understand energy management

Organisations that are *not* engaged in energy management	Organisations that are engaged in energy management
• Collecting energy consumption information as preparation for obtaining a DEC • Starting the process of monitoring energy consumption • Refining their process of monitoring energy consumption • Promotion of a centralised approach to collecting and managing energy consumption information • Recognition of unusual peaks in a building's energy consumption • A picture of energy use across the organisations' property portfolio	• The DEC reaffirmed which buildings in the organisations' portfolio required attention to reduce energy consumption • The DEC provided evidence of which buildings to target for energy reduction measures • The DEC acted as a useful communication tool for managers to get 'buy in' from senior management

None of the organisations interviewed tended to think about carbon emissions; their focus was on energy management and cost reduction.

'I don't understand CO_2 emissions so I don't think that many other people would care.' (Private sector, no DEC)

The lack of energy consumption records was a major hindrance for some organisations in understanding their energy consumption. This tended to be a reflection of how they were organised and whether there was senior level buy-in for energy management. Consequently, at one end of the spectrum there were organisations that simply filed their energy bills and apart from providing a cost line in an annual financial report, little else was done to monitor energy consumption. By contrast, at the other end of the spectrum there were organisations that were very actively monitoring their energy consumption, providing information in dashboard form to senior managers. Others provided regular energy management information in the form of reports and consumption figures to senior managers on a regular basis.

'I get the bill in every quarter. So long as it doesn't look outrageous I send it to the finance department and they pay it... I file them then... No, I don't do anything with it. As I said before, senior management aren't interested. They are more interested in the work of the [organisation].' (Public sector with a DEC)

'We have an online system... which has got half hourly data on our electricity consumption. We can put automated systems in so none of our electricity or gas jumps at a certain point or goes beyond a certain threshold.' (Public sector with a DEC)

Public sector organisations with a DEC that were not engaged in energy management

Despite the lack of active energy management on the part of some organisations – the reasons for which are discussed in section 2.1 – the DEC had helped these organisations to better understand their energy usage. It had achieved this in five key ways:

- Collecting the information required for the initial DEC and the repeated monitoring of energy consumption had provided a useful introduction to the subject of energy management, especially for those individuals for whom energy management had never been of interest. In some cases, this additional information had been taken to senior management or to board level but little else had been achieved either because of a lack of senior management interest or a lack of money to make any changes;

  'One thing we could never understand is finance would just pay an energy bill no matter what. It didn't matter what the reading said on it. So [we started to read meters] every month and by doing that we … [They'd never read the meters before?] Never done it; just got paid it.

And within six months of doing that we saved like thirty thousand pounds almost which was ridiculous.' (Public sector with a DEC)

- The process of obtaining a DEC had been a step in the direction of better monitoring of their energy consumption;

- Energy monitoring had flagged up unusual peaks in a building's energy consumption;

- The need to collect information about energy consumption on a regular basis and across a number of buildings or sites had promoted a more centralised approach to energy monitoring;

  'I think so far because it [DEC] gave us an opportunity go around [all the buildings], because we don't always go to every single building to have a look around. And it has been of benefit to see it from an energy point of view as well.' (Local Authority with a DEC)

- Where an organisation had a number of buildings the regular collection of energy consumption figures meant that a picture began to emerge of how buildings across the portfolio varied. While some of the variation could be accounted for by different types of usage or machinery, it became easier to identify buildings that were less energy efficient and to take corrective action should that be possible.

  'It [energy consumption] varied quite a lot; there was no consistency and the buildings that we thought were good weren't as good as we thought. There are a lot of Victorian buildings that turned out better than we thought and newer buildings that weren't as good.' (Local Authority with a DEC)

Public and private sector organisations with a DEC that were engaged in energy management

For organisations that were already engaged in energy management – and were often involved in other initiatives – the DEC also served a useful purpose in two distinct ways:

- By compiling the energy consumption figures on an annual basis for the DEC renewal, this re-affirmed to them which buildings in their portfolio required further attention. By way of example, a University regularly monitored all its halls of residence. By instigating competitions between the student halls they had seen energy consumption reduce across most of the buildings, but not all. By targeting those buildings that had limited or no reduction in energy consumption they were able to identify actions that would lead to reductions in energy in the future;

'It [DEC] just reinforced what we really already knew about the site and things that we needed to do. It [DEC] highlighted basically all the things that we had been saying for a long time…' (Public sector with a DEC)

- The DEC provided a useful communications tool. For the public sector, the DEC could be used with senior management to reinforce the views of the facilities manager about any changes that were required. For the private sector, the DEC could play some part in demonstrating the efficiency of the building for prospective buyers or tenants.

3.2 How the DEC advisory report can help organisations improve their energy efficiency

The advisory report that accompanies the DEC contains recommendations for improving the energy performance of the building. The advisory report may contain a range of possible improvements, including cost effective measures that may be implemented to improve the energy performance of the property. The report includes zero and low cost operational and management improvements, possible upgrades to the building fabric or services, and opportunities for the installation of low and zero carbon (LZC) technologies.

Views about the usefulness of the DEC varied considerably and depended to a large extent on the quality of advice provided and whether any further discussion about the report was available from the assessor.

Public and private sector organisations that had a DEC generally received the advisory report by post a week or two after the assessment. Very few organisations, however, received any follow-up from the assessor, leaving them to interpret the report themselves.

In a small number of cases, the assessor followed up the production of the advisory report with a second site visit to discuss the report's contents. For these organisations, the value of the report was considerably enhanced. This was because the assessor was able to take the findings of the assessment and discuss a range of options with the costs and benefits attached. Where these diagnostic sessions took place, the assessor tended to be a specialist and trained in engineering, energy management or a related discipline.

'I think it was useful to have the advisory report... because I think the guy that did it was quite experienced, a surveyor I think he is. I remember a useful discussion about insulation and the different types of cavity insulation we could use and where we could use one type or another within the building. So I think having that contact with the guy who did it was quite useful. I am not sure you always get that with the DEC assessors you know, if it is like energy performance certificates, you are probably lucky to get someone with that level of knowledge really.' (Public sector with a DEC)

On its own however, the advisory report was said to have very limited use. While the advisory report could be used by facilities managers to reinforce their views about how to manage their energy more efficiently, the 'quick wins' had usually already been implemented (such as keeping public access doors closed, or installing energy efficient lighting) or it confirmed changes that were already being planned. Overall, the report was described as being of a 'tick box' style with some fairly generic advice about energy management and reduction and a limited set of potential options for change, such as 'change to energy saving light bulbs', 'install a more energy efficient boiler', or 'install cavity wall insulation'.

'Like I said, the advisory reports are very generic with... I am very loathe to say this being as it's produced in-house, but they are extremely wishy washy; there is nothing specific; it is all very general; to save energy you do this and you do that. It is what people know already.' (Local authority with a DEC)

'I keep avoiding that question about the recommendations and the advisory report. They are so rudimentary. So, we talk about other things in our surveys and in our building evaluation. They're rather basic, the recommendations.' (Private sector with a DEC)

Some of the organisations also commented on how the assessment itself was flawed

'It's a look-see inspection. It makes no technical insight. So, I could look in the loft to see what the insulation is, but the DEC [assessment] does not call me to do that... a DEC is a rudimentary analysis of a building. It is only the beginning. It isn't the solution.' (Private sector with a DEC. Respondent was a DEC assessor)

While the advisory report has a recommended format and content[9] it was clear that it was not working sufficiently well for organisations, both public and private sector, to use it. This was said to be for a combination of three reasons: poor quality assessments; the provision of generic information; and a report structure that was of a tick-box style. Organisations universally wanted a report that they considered was tailored to their building with actionable recommendations. For them, they wanted a report that included:

- Targeted recommendations and 'quick wins'. These should take into account the organisation's budget and provide information about the likely benefits and cost-savings to enable building managers to 'sell' the changes to senior management; ;

- A recognition that organisations do not necessarily have large budgets to spend on energy reduction and reflects the practicalities of making

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/51164/A_guide_to_display_energy_certificates_and_advisory_reports_for_public_buildings.pdf

changes in the light of building constraints (e.g. listed buildings) and the budget available;

'So there were recommendations in there, and we did review them but a lot of them were just completely like in an ideal world we'd love to do those things but we just knew we could not. So the reports are there, we do have the advisories, we do look at them but a lot of the things were beyond what we could realistically achieve.' (Public sector with a DEC)

- An explicit and accurate discussion of the costs and benefits (short- and long-term) of each option;

  *'I don't think there was anything there that actually said, okay, if you carry all of this out, we feel that you're going to be an E. I can't remember seeing anything like tha*t.' (Public sector with a DEC)

  Because they [Carbon Trust] are more specific. They actually give "If you change this, spend this much money, you will save that"… And that is the only way we are going to get things done…. To present that to the Board, to get that finance in place, you have got to have the numbers.' (Public sector with a DEC)

- Ideally a face-to-face discussion about the various options proposed with a knowledgeable assessor.

3.3 How DECs can lead to a reduction in energy usage

Overall, it was considered that a DEC could lead to a reduction of energy use, summarised in table 5 and discussed below.

Table 5: Summary of how DECs can lead to a reduction in energy usage

Organisations that are *not* engaged / limited interest in energy management	Organisations that are engaged in energy management
• Obtaining a DEC had led to an increased interest in energy management • Public display of a DEC *may* lead to staff and the public taking an interest in energy management • Increased engagement of senior management through the DEC certificate and advisory report	• DEC used as a staff engagement tool, coupled with energy reduction competitions, 'energy myth busting', and live energy consumption dashboards accessible to staff • DEC used as a communication tool in the private sector to demonstrate how the building has been used.

However, there was also the view, even amongst organisations that were enthusiastic about the DEC, that despite the role that the DEC can play in raising the profile of energy management in an organisation and lead to a

reduction in energy usage, its value can be limited. This is for the following reasons:

- Some lack of trust in the letter ratings as a result of inaccurate energy consumption information being collected by the assessor. For example, there were a number of examples amongst the public sector organisations that indicated that assessors did not always collect all the information that was relevant to the DEC, particularly energy consumption figures based on meter readings. This led to unexplained changes in the DEC letter rating as well as some lack of trust in the DEC overall;

  'Some time ago now we had an instance where our energy rating got worse from one year to the next and we couldn't understand why... we then found that the contractor hadn't read some of the meters one year...our DEC looked bad and it looked like we had got worse, when in fact we had stayed the same.' (Public sector with a DEC)

- As discussed earlier, the perception that there is a lack of useful and actionable advice in the advisory report, especially where the report is delivered without any further discussion with the assessor;

- A general lack of awareness on the part of staff about the existence of the DEC, or what it meant. In this respect, none of the public and private sector organisations said that any member of staff had ever commented on the DEC;

  'I think there is probably a lack of understanding amongst the public in terms of what it is, so I doubt many people notice it. I think maybe some do.' (Public sector with a DEC)

- The front page of the DEC states the next renewal date. Despite this, many of the public sector organisations in the study had renewed their DEC up to six months late and some of the private sector organisations had failed to renew altogether, yet this had never been pointed out to them. Organisations had either not noticed, or had forgotten, the renewal date. In addition, as there was no 'policing' of organisations that had failed to renew on time, this added to their view that the DEC had limited value. This was particularly so where organisations had achieved ISO 50001 which was said to be much more highly regarded because it was renewed on an active basis;

- There were perceived to be no penalties for ignoring, or late renewal of, a DEC, whereas the fines attached to missing CRC targets were highly motivating.

  'With the CRC we have got consequences, we have got fines.' (Public sector with a DEC)

Organisations not engaged / limited interest in energy management

Both public and private sector organisations that had some interest in reducing their energy consumption had found that initially obtaining a DEC had stimulated some interest in energy management. The degree to which this was sustained depended a great deal on how the DEC was used and whether it was combined with other energy saving initiatives.

'We've changed the data collection. We changed our energy management procedures completely. We've now actually adopted a proper energy policy and strategy. We've expanded the sub metering; generally we've done things like improve lighting in galleries and more efficient lighting; insulation in some areas. Like I say we've replaced the boilers in a few areas, things like the staff briefings we've introduced so we relay the data about how we're performing to our staff. We're just getting to the point now where we're actually advising staff on what sort of equipment to buy.' (Public sector with a DEC)

Some organisations simply chose to display the DEC in a public entrance way and do little else with it. The initial advisory report may have been shown to senior management. If there was little engagement at this level, then the perceived value of the DEC was limited to providing a degree of transparency about the organisations' energy consumption and demonstrating that they cared about how public money was being spent.

'I don't think having a Display Energy Certificate has actually prompted us to do anything directly.' (Local authority with a DEC)

Organisations engaged in energy management

Some of the more energy conscious public sector organisations used the DEC as part of a staff engagement campaign to reduce energy consumption. Organisations found that by using the DEC to highlight buildings that had unusually high (or low) energy consumption they could begin to engage staff in reducing energy consumption. This was usually by setting up communications events and campaigns, such as 'Switch Off' (lights, computers, etc. especially at night and weekends). As a tool however, while the DEC was felt to have merit in highlighting overall energy consumption it was seen as a rather blunt tool, especially where the organisations were already engaged in other energy reduction activities. These included:

- Competitions, such as between an organisations' floors or buildings, or in the case of a University between student halls;

- Myth busting, such as a public sector organisation that would display an energy myth in a staff rest room (such as 'turning down the thermostat has no effect on energy consumption') together with a 'fact' (such as, 'turning the thermostat down by one degree could save £X a year');

- Live dashboards, that are accessible to all staff and display energy consumption information either 'live' or on a daily or weekly basis;

- Private sector organisations used the DEC as a communications tool. To existing tenants they could highlight where there were inefficiencies due to how the tenant was using the building by contrasting a buildings' EPC[10] rating (which reflects the building's theoretical energy efficiency) with the letter rating provided by a DEC. Building managers and landlords could then identify whether the building was being used in the most efficient way. For example, it was mentioned that coffee shops often consume more energy (as shown by the DEC) than the EPC might suggest because of the way the building has been fitted out. While much of the shop-fitting is due to aesthetics and branding, landlords felt that there was scope to work with these types of businesses to help them reduce their energy consumption.

[10] Energy Performance Certificates (EPCs) provide a rating of the energy efficiency of a building, ranging from A (very efficient) to G (inefficient).

4. The role of the DEC in promoting energy conservation

As a promotional device, the DEC provides a clear indication of energy usage over the year as well as trend information. Some participants in this research felt that their DEC had a limited effect because neither the public nor staff are aware of it; the benchmarking is poorly understood or considered to be inappropriate for the organisation; the letter rating is potentially de-motivating as it is too coarse; and the G rating has a very long tail which makes it difficult for energy inefficient organisations to demonstrate improvement.

4.1 The role of publicly displaying a DEC

It is a requirement for a public sector organisation, providing they meet certain criteria, to display a DEC in a prominent place that is clearly visible to the public. All of the public sector organisations in this study were displaying a DEC in their relevant buildings, although some organisations that had a G letter rating and had been unable to reduce their energy consumption admitted to 'hiding' the DEC and displaying it in a place that was less likely to be seen.

'Because it's a public space, you don't want it too visible, especially when it's a G…..So it was having it in a prominent place but not so prominent that everybody can actually see it.' (Public sector with a DEC)

The notion of publicly displaying a DEC was generally seen in a positive light as it provided a transparent way of demonstrating that the organisation was conscious of its energy bill and of minimising its costs, especially where these were from the public purse.

'...in the public sector we've got an important role in being open and transparent. And we're meant to serve the public and in doing so I think we should be open about what we're doing and where we are and that's what the DEC can do. It tells not just us how we're doing, but it also tells the people that are our customers how we're doing as well.' (Public sector with a DEC)

However, there was a universally held view that the DEC was hardly recognised by staff or public alike; none of the organisations had received any comments from their staff and no more than a handful of comments from the public since its inception.

'People do pay attention to it [DEC], we do get some positive comments or we do get the occasional question about what we do to achieve this ... it's

only about ten a year out of eight hundred thousand [visitors]; it's not a lot. (Public sector with a DEC)

'No one's ever passed a comment about the certificate to me. In all those years, no one has ever passed a comment, looking at it and saying, oh, you're a G, or anything like that.' (Public sector with a DEC)

'We do get a lot of members of the public [here], I don't think they'd care…..I mean they are coming in here to meet people; they are coming in here to work; they are not really interested in how energy efficient we are.' (Private sector, no DEC)

The lack of comment, of course, does not necessarily mean that the DEC has not been noticed and that the message about energy management has not been taken on board – the message the DEC conveys may be at a subliminal level. Respondents in the study were sceptical though that the DEC was ever noticed because it was considered to be small in size[11] and only changed once a year. From their perspective, the way to enhance the value of a DEC was to use it in engagement and promotional activities, which forms the subject of the next section.

4.2 Promoting energy conservation using the DEC

It was only the most 'energy-engaged' organisations, both public and private sector that promoted themselves as being energy efficient. They did this in a number of ways, which included:

- Adhering to the ISO 50001 Energy Management System (Private sector only);
- Adhering to the Green Dragon Environmental Standard (Wales);
- Carbon Trust 'Footprint Certification';
- Energy Savings Trust Assessment;
- Good Campus certification (Higher education)

Organisations also agreed that the DEC was very easy to include in business reports, marketing materials and in their corporate social responsibility (CSR) documents. Commercial landlords indicated that the DEC could be useful in demonstrating low operation costs and some said how they were being increasingly used in the sale or letting of buildings[12], with buildings with a letter rating of A-C commanding higher sale prices or rental values.

[11] The building occupier can choose to produce a larger DEC for display purposes if required.
[12] There is no requirement for a DEC to be produced in the sale or let of a building (an EPC must be produced for this purpose).

As an indication of overall energy consumption the DEC worked well as a promotional device and could enhance the reputation of the organisation. However, a limitation of the DEC is that it reflects a building and there is no requirement for DECs to reflect the organisation as a whole. While this is not a problem for organisations with a single DEC, or a single building with a single DEC that is being sold or let, it becomes much more problematic as a promotional tool where the organisation comprises a number of buildings. As one public sector organisation said:

'We have over fifty buildings. They range from [letter rating] A to G. How can we use that to say how good we are at managing our energy consumption? We also have ISO 50001. That is internationally recognisable and indicates for the organisation as a whole that we are keen to manage our energy consumption and do so in a way that is constantly being monitored. The DEC can't do that.' (Public sector with a DEC)

Organisations recognised that the DEC could be seen as one component of how their business is seen by others – a reputational driver – but commented that the static nature of the DEC limits its usefulness in this way. Commenting on the display element of the DEC one public sector organisation said:

'The thing that I would say about it is it is like any sign. It becomes invisible after a few sightings.' (Public sector with a DEC)

In this respect, the more engaged organisations indicated that the value of the DEC increases considerably when it is combined with awareness raising and educational events.

'*Actually what we really need to do is when a new DEC comes out, for a week or two or whatever put a poster here saying - with big arrows - look at your new DEC, or something*.' (Public sector with a DEC)

'It's a starting point. That's all it is. It's a starting point. And if it were promoted as an educational tool to people: "we need to think about our energy". Here is our starting point. (Private sector with a DEC)

4.3 How benchmarking and the letter rating can inform public knowledge about an organisation's energy management

Overall, the DEC was thought to have become a familiar format; it was potentially eye-catching through its use of colour as well as being informative. Organisations also thought that, in principle, it provided a useful indication of annual energy consumption although there were aspects that were said to limit its use.

4.3.1 Letter rating

The operational rating (OR) is a numerical indicator of the actual annual carbon dioxide emissions from the building. This rating is shown on a scale from A to G, where A is the lowest CO_2 emissions (best) and G is the highest CO_2 emissions (worst). 'A' ratings represent an OR of 0 – 25; a 'G' rating represents an OR of over 150. It is therefore possible for a G rating to represent an OR of 151 to 1000+.

The letter rating was a familiar format, being identical to that used by the EPC. It was well recognised and easily understood.

'*I think obviously the key bit is the A to G score.....Well that's obviously the measure of how well we are doing and it is very clear that that is the case and it is a scheme that is quite widely used now isn't it, on your refrigerators, cars and whatever…*' (Public sector with a DEC)

However, there was a strongly held view amongst organisations with letter ratings of F and G that the letter rating was insufficiently fine grained and that it was very difficult to move between letter ratings because of their large numerical range.

'It's a G……..It's still a G-rating...No. It's never gone up from a G, but it's improved within the G-band……What I think about it is that I don't think I'm ever going to get out of the G, and nothing anyone has ever told me has given me any confidence that there's anything that could be done to get it out of the G.' (Public sector with a DEC)

Organisations that had a G rating felt that the 'tail' was too long as it could range from 151 to 1000 or more. For organisations that were very limited in their ability to make changes to the building (such as listed buildings) this was very de-motivating. Indeed, picking up the same issue, one private sector organisation thought that the letter rating should be considerably extended.

'...it's far too constrained. Make it A to R, or whatever. But make G into smaller units so that it becomes more motivating to make changes.' (Private sector with a DEC)

4.3.2 Benchmarking

In principle, the idea of benchmarking was seen as a positive idea as it enabled an organisation to compare itself with other buildings.

'So in terms of benchmarking against other institutions, then yes that's quite useful…….Because people can easily turn round and say "You are not doing a great job" ... "You are doing terrible, you are doing x, y, z" but if you can actually say "We are benchmarked against the norm; we are actually better than the norm, then obviously we are not doing that badly. We are not perfect; there are other things that we can do.' (Public sector with a DEC)

Overall, however, the building managers and sustainability managers of the organisations taking part in the research either did not realise that the DEC comprised a benchmark, or recognised it but did not know whether the benchmark was correct for their building.

'Oh, that's a benchmark is it? I've never noticed it before. What does it benchmark to?' (Public sector with a DEC)

Of the small number of organisations in the study that recognised that the DEC contained a benchmark, some thought that it was a national benchmark, others were aware that it was linked to a type of building.

'You're comparing against the kind of national benchmark, which is as close as you can get, which might not really be that accurate for your building or that applicable category.' (Public sector with a DEC)

Organisations that were aware of the benchmark were concerned that it was not necessarily applicable to all public or private sector buildings because they considered that the benchmarks were based on government buildings and did not necessarily correspond to their organisation.

'...the benchmark was actually developed way, way back, and using public sector buildings so it doesn't apply to private sector buildings and probably not those that are quasi-public sector... like museums.' (Private sector with a DEC)

Very few were aware of the benchmarks for their buildings (only two organisations recognised that the benchmarks were based on CIBSE Guide F 'Energy Efficiency in Buildings' and CIBSE TM46 'Energy Benchmarking') or how they were compared; those that were aware thought that the benchmarks needed to be updated to reflect a wider range of building types. For example:

'We want to use these things [DECs] to benchmark where we are and what we put in place. And we can't do that at the moment because there isn't [a benchmark for our organisation]. The nearest two compatible [benchmark] buildings are a department store and a train station, which clearly are not [like this organisation]. [Private sector with an out of date DEC]

4.3.3 CO_2 emissions

Very few of the organisations in the research mentioned the CO_2 emissions rating when discussing the DEC. Equally, they did not spontaneously make the link between energy usage and CO_2 emissions. Consequently, this aspect of the DEC was not considered to be particularly useful as few respondents understood how to use this information.

4.3.4 Trend information

The trend information was well liked by both public and private sector organisations. Even those that had made little use of the DEC thought that the trend information was motivational as it showed changes over time.

'I would find it important to see how it [energy consumption] has progressed over the last three years. Has there been a steady improvement? Is there a trend? (Public sector with a DEC)

There was a strongly held view that the trend information was more useful than the letter rating as it was able to show more fine grained improvements. In this respect, there was some call for reversing the position and size of the trend information with the letter rating as the former was thought to be a better indicator of how the organisation was improving its energy management.

4.3.5 Other aspects of the DEC design

The guidance provided by the Department for Communities and Local Government specifies a minimum A3 size for a DEC. However, many of the organisations were displaying the DEC in either A4 or A5 formats and did not recognise that this was contrary to the guidance. Many organisations in the research thought that the DEC wasted a lot of space with information that was not relevant to its public display. For example, there was considered to be *'too much writing'* at both the top and bottom of the DEC that wasted space that could be used to display more useful and eye-catching information. While it was recognised that there is probably a need for this information it was thought that it could be kept elsewhere, perhaps with the documentation that accompanied the DEC.

Overall, respondents considered that the most important pieces of information were the trend and letter rating. As discussed earlier, the link between energy usage and carbon emissions was not generally recognised. Consequently, this graph and the written material at the top and bottom of the DEC were seen to be superfluous to its public display.

'If I was to design it I would get rid of the carbon emissions graph because no one knows what it means, get rid of the writing top and bottom, except for the organisation name and address, and swop round the trend and letter ratings. What more do you need? What more will anyone look at?' (Public sector with a DEC)

'I think that the most important pieces of information are the letter rating and the trend data. Keep just that.' (Private sector with a DEC)

5. Conclusions

In discussing the DEC with public and private sector organisations it is clear that obtaining the original DEC and its subsequent renewal raised the profile of energy management amongst those organisations that had not previously taken much interest in the subject. It also led in some instances to changes in their energy management practices. For those that were more engaged in energy management, the DEC often reaffirmed some of their plans and helped to raise the profile of energy management with their senior managers.

Where energy management was of interest to organisations, the DEC was seen as one of many drivers of change, although cost savings, the CRC, and other 'green' initiatives often played a greater part in an organisations' approach to energy management. Despite this, the DEC was seen as useful because: the process of information gathering had a positive impact on knowledge and could act as a stimulus to change; the advisory report can help with negotiating energy management budgets and raise the internal profile of energy consumption; the format of the DEC can provide positive messages in terms of trend information and benchmarking can provide both a target and instigate competition between buildings and organisations; and it is seen as relatively inexpensive to undertake.

The DEC can be used in many ways to promote energy management. These include: helping to develop a culture of energy management in an organisation; promoting change through competition; enhancing the reputation of an organisation; and identifying the costs and benefits of making changes. These are discussed in turn in the next sections.

5.1 Developing a culture of energy management

The initial work required in obtaining a DEC, and to a lesser extent, DEC renewal provides a way of initially engaging staff and the organisation in the concept of energy management. The advisory report can provide additional support for a facilities manager or energy manager to argue their case with senior management; the appearance of the DEC provides a useful visual indicator that can engage busy senior managers.

However, the organisations participating in the research considered that the DEC alone remains very limited in what it can achieve in terms of raising the profile of energy management in the longer term. This is especially so for an organisation that has a history of limited, or no, engagement in conserving energy. As the more engaged organisations have indicated, the DEC is a static device. If it is noticed by anyone, interest wanes very quickly because it does not change until the following year. The fact that there is perceived to be no penalty[13], or even follow-up,

[13] The penalty for failing to display a DEC where required is £500 and the penalty for not having an advisory report available is £1,000.

of DECs that are renewed late also reduces their effectiveness in engaging interest and promoting energy efficiency.

The research demonstrated that using the DEC as part of a wider promotional campaign within an organisation can enhance the value of the DEC in changing energy management culture.

5.2 Promoting change

There is a requirement for the occupier, in collaboration with the energy assessor, to obtain actual meter readings or consignment notes for all fuels used in the buildings which are in scope of the DECs requirements. However, some respondents were concerned about the accuracy of the meter readings and energy consumption figures that were used in the DEC calculations, the thoroughness of the building assessments and the skill level of the assessors.

In terms of the DEC itself, the fact that it is based on actual energy usage provides a level playing field to allow comparison between buildings and between organisations. However, the benchmarking aspect of the DEC was often not recognised, misunderstood, or said to provide benchmarks that were inappropriate. One difficulty with the letter rating, which indicates consumption, is that that letter categories are not very fine grain and the G rating contains a long 'tail' that can make it very de-motivating for organisations that can only make small changes or are caught at the less efficient end of the G rating.

Even the least engaged organisations liked the idea of benchmarking and saw this as both a way of engaging their organisation in energy management and promoting change within the organisation – a 'healthy competition' attitude.

5.3 Enhancing reputation

One of the most applauded aspects of the DEC is that it provides a very clear indication of energy usage and changes over time (through the trend data), with the trend data often being seen as more important than the letter rating.

As a reputational driver organisations often thought that the DEC was lacking in impact. They thought that neither staff nor the public were aware of DECs, or what they meant, basing their view on the fact that so few people (staff and public) had commented on it.

Promotion of the DEC through activities such as competitions between an organisations' floors or buildings, part of an energy 'myth busting' exercise, live dashboards, and as a general communication tool may enhance the value of the DEC, amongst staff and the general public.

Organisations with multiple DECs also commented on how it was not possible to use the DEC in their promotional activities because the DEC

referred to a building rather than the organisation. If there was a 'super DEC' that reflected the organisation it would be much easier to use when promoting their organisation, although this would go beyond the minimum requirements of the Directive.

5.4 Identifying costs and benefits

The advisory report was, overall, considered to be of a generic nature and lacking in sufficient detail to be of use to organisations. While there is a recommended structure and content for the advisory report, it was clear that they are not being completed in a manner that meets the organisations' needs. The key problems identified with the way in which the advisory reports were completed were:

- A 'one size fits all' approach to the advisory report;
- Advice that is generic or not appropriate to the building;
- A lack of tailored advice with associated costs and benefits;
- A lack of pay-back times;
- A lack of practical information about where to source materials (such as LED lighting) or how to obtain funding for alternative energy sources (such as the Energy savings Trust for grants).

By ensuring that the advisory report is compiled to provide more practical and usable recommendations, organisations said that they were more likely to consider the report and provide the cost benefit arguments that senior managers require when making decisions. To this end, the following would considerably enhance the value of the advisory report:

- Tailored recommendations, taking into account the budgetary constraints of the organisation;
- A tiered set of recommendations with clear costs and benefits, with the 'quick wins' identified and longer term recommendations suitably prioritised in terms of pay-back times; and
- Practical information about further sources of information and grant funding.

Organisations were particularly keen on receiving face-to-face tailored advice from a suitably qualified assessor or engineer, recognising that this would cost more than the standard advisory report, but which would considerably enhance its value.

Appendix A: Research design and analysis

The research was qualitative in design, adopting in-depth interviews in order to examine organisations' approach to energy management and the role of the DEC in this. The in-depth interviews were carried out by qualitative researchers who have extensive experience and have been trained in the techniques of non-directive interviewing. Each interview was exploratory and interactive in form so that questioning could be responsive to the experiences and circumstances of the organisation. Interviews were based on a topic guide, which listed the key themes and sub topics to be addressed and the specific issues for coverage within each. Although topic guides help to ensure systematic coverage of key points across interviews, they are used flexibly to allow issues of relevance for individual respondents to be covered through detailed follow-up questioning.

All members of the research team took part in a briefing to ensure the interviewing approach was consistent across the interviews. The interviews were conducted at the respondent's place of work. All interviews were digitally recorded and transcribed verbatim.

Material collected through qualitative methods is invariably rich but unstructured. The primary aim of any analytical method is to provide a means of exploring coherence and structure within a cumbersome data set whilst retaining a hold on the original accounts and observations from which it is derived. The analysis of the in-depth interviews was undertaken using a qualitative content analysis method called 'Matrix Mapping', which involves a systematic process of sifting, summarising and sorting the material according to key issues and themes. Information from each interview transcript was summarised and a map was produced which identified the range and nature of views, experiences, and issues for development and form the basis of this report.

Appendix B: Topic guides

The role and impact of Display Energy Certificates (DECs)

Discussion Guide (Public organisations)

Summary of overall objectives:

- What are the key drivers to improving energy performance in public buildings?
- Does a DEC play any part in the decision-making around improving energy performance, and if so, what part does it play?
- Do the following act as drivers of behaviour change and to improve energy performance?
    - gathering information required for a DEC
    - benchmarking information
    - publicly displaying a DEC – is there a reputational driver?
- Does getting a DEC lead to better understanding of energy usage and carbon emissions?
- How is the information about improving energy performance used?
- What is the non-monetary cost of obtaining a DEC and what are the related benefits?
- What are the drivers and barriers to change; and what role can DECs play in encouraging a change in energy performance?
- What else needs to be in place to encourage changes in energy performance behaviour / enhance the value of a DEC?

Stimulus:

- DEC timeline (for journey mapping)
- A full size DEC
- DEC components

1. Introductions – 2 minutes

- Thank you for agreeing to take part in this research exploring views and experiences of obtaining a DEC and how it has been used by the organisation
- About TNS-BMRB – independent research agency
- Confidentiality / anonymity
- Following MRS guidelines
- Agreement to record the interview
- Length of interview: up to 60 minutes

2. Contextual exploration - 5 minutes (Briefly)

- What is your role
  - Generally
  - With regards to minimising the amount of energy used
- How important is it to minimise the amount of energy used in this building? Why?
  - Does everyone share this view
  - How do views differ across the organisation Probe: Facilities manager, Caretaker, Senior Management, Finance, Other? (Please specify). Do they differ? If so, how
- Are you signed up to any plans/initiatives/pledges to reduce your energy consumption?
  - What? (Ask respondent to describe the key elements of the initiative)
  - When did you sign up
  - What has your organisation done as a result?

  PROBE ON:

    - Behaviour / how the organisation operates
    - Minor works – changing fixtures and fittings
    - Major works – replacing boilers etc.

- How are decisions around energy performance in this organisation made?
  - Who is involved in decisions around energy performance? Probe: Facilities manager, Caretaker, Senior Management, Finance, Other? (Please specify)
  - Note to researcher: check who makes decisions compared to the information collected at recruitment stage. Probe for any others
- How easy is it to get agreement to make changes in energy management
  - What are the difficulties (if any)
- Have you ever sought advice about energy management? If so, from where? How useful and actionable was it? If not, why not? Are there any information gaps that exist?

3. The process of obtaining a DEC - journey mapping – 15 minutes

The purpose of this section is to explore the extent to which getting a DEC prompted organisations to change their energy use in comparison to other factors. The journey map is used to understand the process that organisations went through in order to get the DEC and explore what the costs were to them (in terms of time and out of pocket costs); what measures the organisation took to reduce their energy consumption, what motivated them to do this; what were the triggers to make changes; what element of the DEC triggered change; and how engaged the organisation was with the process of obtaining and renewing the DEC, as well as energy management
MODERATOR: Explain to respondent that we are going to map out the process of getting a DEC or renewing the DEC (the first time they were involved).

USE STIMULUS 1 (DEC timeline)

The time 'pre-DEC'

- When did you first hear about DECs (note rough date on JM)

- How did you hear about DECs
- What were your first thoughts about DECs
- How would you describe your/your organisations views about obtaining a DEC?
- Was the organisation already considering energy consumption issues?
  - What were you doing to manage your energy use
  - Was your energy use being monitored or audited? How and who by
  - Did a DEC help / hinder in any way?
  - How involved were you in the planning process
  - Note: interviewee may not have been involved with obtaining the DEC – if not involved probe on what they know about the process

- Before you heard about DECs, what was your business doing to reduce energy consumption
  - What was happening at the time which triggered that change

The process of obtaining a DEC

- What did you have to do when first applying / renewing the DEC
- (Ask respondent to describe in as much detail as they can the process of obtaining a DEC and note on the journey map)
  - What you had to do
  - Who was involved in the process of obtaining a DEC
  - What advice you sought and where from
  - How easy / difficult was it to engage the organisation
  - How much did it cost to get the DEC
  - Staff time (get costs if possible)
  - Cost of advice / consultancy
  - Cost of new equipment
- When collecting the information required for a DEC (i.e. just before their first DEC), how did this effect your views about energy efficiency (Note on practices and costs line)
  - what (if anything) did you do to try to reduce your energy consumption
  - Was it as a result of collecting the information required for a DEC or something else that triggered the change
  - If DEC, probe fully on what happened when applying for the DEC that triggered them to make that change
  - If something else note on Background Events
  - What were the costs
  - Staff time (and costs if possible)
  - Advice / consultancy
  - Equipment

'Post DEC'

- What happened when you received the DEC (note on process of DEC)
  - How did you go about publicly displaying the DEC? Where was it displayed?
  - What was the reaction of the organisation
  - What was the reaction of staff
  - Do you think all your staff know that this organisation has a DEC

- Why / why not
- What did you do with the information / advisory report
- Who else was involved

Renewal

- Has the organisation renewed its DEC
  - Reasons why / why not
- If renewed, what happened when you renewed
  - What were the costs
  - Staff time
  - Advice / consultancy
  - Equipment
- Has easy / difficult was it to engage the organisation?

4. Changes triggered by the DEC or other initiatives – 5 minutes

- Since obtaining the DEC what (if anything) did you do to try to reduce your energy consumption
  - Probe on minor works and repairs; major works; behaviour / how the business operates
- Was the change a result of applying for a DEC or something else that triggered the change
  - If DEC, probe on what about the DEC which made them decide to make that change
    - The letter rating (i.e. a letter A-G): Why? Probe on effectiveness of letter rating:
      - As a communication tool (e.g. clear and accessible)
      - As a mechanism for monitoring changes to your own building/organisation
      - Because it rates you relative to other similar buildings
    - Displaying the certificate
    - The process of collecting the information required
    - The advisory report
    - Being compared to others (benchmarking)
      - If something else
        - What
        - Why was it more effective than DEC in prompting change?
- How would you describe your / your organisations views about getting a DEC now?
- Has obtaining a DEC had an impact on views in your organisation about energy consumption?
- Where energy performance of the organisation has stayed the same
  - Reasons for this
  - Would it be possible to improve?
  - What would need to happen?
- Where energy performance of the organisation has deteriorated
  - Reasons for this

- What would need to happen in order to improve energy efficiency

5. Knowledge of energy performance management and sources of information - 5 minutes

Reassure interviewees that this is not a test, but we are interested in how people gain knowledge about energy performance management and whether a DEC plays a part in this

- When you were in the process of obtaining a DEC do you feel you learned anything new?
  - What?
  - From where?
  - What were the most important things you learned in the process of obtaining a DEC (if any)
- In hindsight what were your overall information requirements before obtaining the DEC?
- What are your current information requirements having obtained a DEC?

6. Costs and benefits of getting a DEC

Discuss the financial and time costs of getting a DEC, if not already covered when doing the Journey Map

- What were the financial costs of getting a DEC
  - Cost of an external contractor
  - Obtaining the necessary information
- What were the time costs of getting a DEC
  - Obtaining the information
  - Interpreting reports consultants
  - Interpreting advisory reports
  - Planning / discussing advisory reports
- What were the benefits of getting a DEC
  - Learning about energy consumption
  - Reducing energy bills
  - Making energy efficiency a greater priority in the business
- Was it worthwhile for your business to obtain a DEC
  - In what way
  - Why, what other benefits were there

- If a DEC was **not mandatory**, would they still choose to have a DEC?
  - If they would choose to have a DEC, why
  - What do they see as the value in obtaining a DEC
    - Spontaneous, then Probe
      - Helps establish energy performance within the organisation (at management level)
      - Helps establish energy performance issues amongst staff
      - Promotes energy performance amongst the visiting public

        - Feeds into organisations 'corporate image'
        - Etc.
      - Why? What is it about the DEC that has this effect

    - If they would not apply for a DEC
      - Why not?
      - Do they see any value in having a DEC?
      - Could a DEC have value to the organisation if it was different in some way? What way
- If organisations were offered some kind of incentive for implementing the recommendations in the advice report do you think they would be more likely to implement them. Do you think you/your organisation would have implemented some/more of the recommendations made if there was some kind of incentive to do this?
  - If examples are requested suggest:
    - A refund of the cost of the DEC
    - A financial incentive (like cash back) proportionate to the number and nature of the recommendations that they implement
- PROBE: If interviewees need more information here, suggest a hypothetical level of up to 30% of the energy-cost savings made by installing these measures
  - Is there anything else specifically that would incentivise you to implement recommendations?

7. The role of a DEC - 10 minutes

- Do you feel that stakeholders (employees, public) are aware of the DEC? Has it made any impact with them? Has anyone noticed the DEC, or made comment?
- What are the most important features of a DEC for your business?
- To what extent does the DEC have an impact on the reputation of your business?
  - In what ways - Ask for examples
- How important is that to your business? Why/not?
- Thinking of the certificate they display
  - How important is it to display a DEC
    - What effect does it have?
  - What are the most important aspects of a DEC?
    - Spontaneous and then show a DEC and ask what are the most important elements; and why

8. Bringing about change (8 minutes)

- Thinking about the management of energy performance in your organisation, how easy or difficult is it to bring about any changes?
  - Are there any difficulties you face?
    - What are they?
    - How do you manage these?
- How important was getting a DEC in helping to bring about change

  - What is it about a DEC that helps bring about changes in energy performance management attitudes /behaviour?
    - The process of collecting the information required
    - The Letter rating
    - Displaying the certificate
    - Being compared to others (benchmarking)
    - The advisory report
  - PROBE: why do they feel that certain factors make a difference
- How does a DEC help to ensure that these changes are continued over time
  - What information, advice and guidance (above what is provided by a DEC) would be required in order to enable change?
  - What additional ongoing support would be required to continue improving your energy performance?
- Is there a way that the DEC could be made more practically useful for organisations like yours?
  - If so, how?

9. Thank and close

The role and impact of Display Energy Certificates (DECs)

Discussion Guide (Private organisations with a DEC)

Summary of overall objectives:

- What are the key drivers to improving energy performance in public buildings?
- Does a DEC play any part in the decision-making around improving energy performance, and if so, what part does it play?
- Do the following act as drivers of behaviour change and to improve energy performance?
    - gathering information required for a DEC
    - benchmarking information
    - publicly displaying a DEC – is there a reputational driver?
- Does getting a DEC lead to better understanding of energy usage and carbon emissions?
- How is the information about improving energy performance used?
- What is the non-monetary cost of obtaining a DEC and what are the related benefits?
- What are the drivers and barriers to change; and what role can DECs play in encouraging a change in energy performance?
- What else needs to be in place to encourage changes in energy performance behaviour / enhance the value of a DEC?

Stimulus:

- DEC timeline (for journey mapping)
- A full size DEC
- DEC components

1. Introductions – 2 minutes

- Thank you for agreeing to take part in this research exploring views and experiences of obtaining a DEC and how it has been used by the organisation
- About TNS-BMRB – independent research agency
- Confidentiality / anonymity
- Following MRS guidelines
- Agreement to record the interview
- Length of interview: up to 60 minutes

2. Contextual exploration - 5 minutes (Briefly)

- What is your role
  - Generally
  - With regards to minimising the amount of energy used
- How important is it to minimise the amount of energy used in this building? Why?
  - Does everyone share this view
  - How do views differ across the organisation Probe: Facilities manager, Caretaker, Senior Management, Finance, Other? (Please specify). Do they differ? If so, how
- Are you signed up to any plans/initiatives/pledges to reduce your energy consumption?
  - What? (Ask respondent to describe the key elements of the initiative)
  - When did you sign up
  - What has your organisation done as a result?
  - PROBE ON:
    - Behaviour / how the organisation operates
    - Minor works – changing fixtures and fittings
    - Major works – replacing boilers etc
- How are decisions around energy performance in this organisation made?
  - Who is involved in decisions around energy performance? Probe: Facilities manager, Caretaker, Senior Management, Finance, Other? (Please specify)
  - Note to researcher: check who makes decisions compared to the information collected at recruitment stage. Probe for any others
- How easy is it to get agreement to make changes in energy management
  - What are the difficulties (if any)
- Have you ever sought advice about energy management? If so, from where? How useful and actionable was it? If not, why not? Are there any information gaps that exist?

3. The process of obtaining a DEC - journey mapping – 15 minutes

The purpose of this section is to explore the extent to which getting a DEC prompted organisations to change their energy use in comparison to other factors. The journey map is used to understand the process that organisations went through in order to get the DEC and explore what the costs were to them (in terms of time and out of pocket costs); what measures the organisation took to reduce their energy consumption, what motivated them to do this; what were the triggers to make changes; what element of the DEC triggered change; and how engaged the organisation was with the process of obtaining and renewing the DEC, as well as energy management
MODERATOR: Explain to respondent that we are going to map out the process of getting a DEC or renewing the DEC (the first time they were involved)..

USE STIMULUS 1 (DEC timeline)

The time 'pre-DEC'

- When did you first hear about DECs (note rough date on JM)
  - How did you hear about DECs
  - What were your first thoughts about DECs
- Why did you decide to get a DEC?

- How would you describe your/your organisations views about obtaining a DEC?
  - Was the organisation already considering energy consumption issues?
    - What were you doing to manage your energy use
    - Was your energy use being monitored or audited? How and who by
    - Did a DEC help / hinder in any way?
  - How involved were you in the planning process
  - Note: interviewee may not have been involved with obtaining the DEC – if not involved probe on what they know about the process
- Before you heard about DECs, what was your business doing to reduce energy consumption
  - What was happening at the time which triggered that change

The process of obtaining a DEC

- What did you have to do when first applying / renewing the DEC
- (*ask respondent to describe in as much detail as they can the process of obtaining a DEC and note on the journey map)*
  - What you had to do
  - Who was involved in the process of obtaining a DEC
  - What advice you sought and where from
  - How easy / difficult was it to engage the organisation
  - How much did it cost to get the DEC
  - Staff time (get costs if possible)
  - Cost of advice / consultancy
  - Cost of new equipment
- When collecting the information required for a DEC (i.e. just before their first DEC), how did this effect your views about energy efficiency (Note on practices and costs line)
- What did you learn about your energy usage and carbon emissions?
- what (if anything) did you do to try to reduce your energy consumption
  - Was it as a result of collecting the information required for a DEC or something else that triggered the change
  - If DEC, probe fully on what happened when applying for the DEC that triggered them to make that change
  - If something else note on Background Events
  - What were the costs
  - Staff time (and costs if possible)
  - Advice / consultancy
  - Equipment

'Post DEC'

- What happened when you received the DEC (*note on process of DEC*)
  - How did you go about publicly displaying the DEC? Where was it displayed?
  - What was the reaction of the organisation
  - What was the reaction of staff
  - Do you think all your staff know that this organisation has a DEC
  - Why / why not
  - What did you do with the information / advisory report
  - Who else was involved

Renewal

- Has the organisation renewed its DEC
  - Reasons why / why not
- If renewed, what happened when you renewed
  - What were the costs
  - Staff time
  - Advice / consultancy
  - Equipment
- Has easy / difficult was it to engage the organisation?

4. Changes triggered by the DEC or other initiatives – 5 minutes

- Since obtaining the DEC what (if anything) did you do to try to reduce your energy consumption
  - Probe on minor works and repairs; major works; behaviour / how the business operates
- Was the change a result of applying for a DEC or something else that triggered the change
  - If DEC, probe on what about the DEC which made them decide to make that change
    - The letter rating (i.e. a letter A-G)
    - Why? Probe on effectiveness of letter rating:
      - As a communication tool (e.g. clear and accessible)
      - As a mechanism for monitoring changes to your own building/organisation
      - Because it rates you relative to other similar buildings
    - Displaying the certificate
    - The process of collecting the information required
    - The advisory report
    - Being compared to others (benchmarking)
    - If something else
      - What
      - Why was it more effective than DEC in prompting change?
- How would you describe your / your organisations views about getting a DEC now?
- Has obtaining a DEC had an impact on views in your organisation about energy consumption?
- Where energy performance of the organisation has **stayed the same**
  - Reasons for this
  - Would it be possible to improve?
  - What would need to happen?
- Where energy performance of the organisation has **deteriorated**
  - Reasons for this
  - What would need to happen in order to improve energy efficiency

5. Knowledge of energy performance management and sources of information - 5 minutes

Reassure interviewees that this is not a test, but we are interested in how people gain knowledge about energy performance management and whether a DEC plays a part in this

- When you were in the process of obtaining a DEC do you feel you learned anything new?
  - What?
  - From where?
  - What were the most important things you learned in the process of obtaining a DEC (if any)
- In hindsight what were your overall information requirements before obtaining the DEC?
- What are your current information requirements having obtained a DEC?

6. Costs and benefits of getting a DEC

Discuss the financial and time costs of getting a DEC, if not already covered when doing the Journey Map

- What were the financial costs of getting a DEC
  - Cost of an external contractor
  - Obtaining the necessary information

- What were the time costs of getting a DEC
  - Obtaining the information
  - Interpreting reports consultants
  - Interpreting advisory reports
  - Planning / discussing advisory reports
  - Probe on time spent by all involved and check their level of seniority

- What were the benefits of getting a DEC
  - Learning about energy consumption
  - Reducing energy bills
  - Making energy efficiency a greater priority in the business

- Was it worthwhile for your business to obtain a DEC
  - In what way
  - Why, what other benefits were there
  - Would you choose to have a DEC again? If they would choose to have a DEC, why
  - What do they see as the value in obtaining a DEC
    - Spontaneous, then Probe
  - Helps establish energy performance within the organisation (at management level)

- Helps establish energy performance issues amongst staff
- Promotes energy performance amongst the visiting public
- Feeds into organisations 'corporate image'
- Etc.
- Why? What is it about the DEC that has this effect

- If they **would not apply** for a DEC
  - Why not?
  - Do they see any value in having a DEC?
  - Could a DEC have value to the organisation if it was different in some way? What way

7. The role of a DEC - 10 minutes

- Do you feel that stakeholders (employees, public) are aware of the DEC? Has it made any impact with them? Has anyone noticed the DEC, or made comment?
- What are the most important features of a DEC for your business?
- To what extent does the DEC have an impact on the reputation of your business? In what ways - Ask for examples
- How important is that to your business? Why/not?
- Thinking of the certificate they display
  - How important is it to display a DEC
    - What effect does it have?
  - What are the most important aspects of a DEC?
    - Spontaneous and then show a DEC and ask what are the most important elements; and why

8. Bringing about change (8 minutes)

- Thinking about the management of energy performance in your organisation, how easy or difficult is it to bring about any changes?
  - Are there any difficulties you face?
    - What are they?
    - How do you manage these
- How important was getting a DEC in helping to bring about change
  - What is it about a DEC that helps bring about changes in energy performance /management attitudes /behaviour?
    - The process of collecting the information required
    - The Letter rating
    - Displaying the certificate
    - Being compared to others (benchmarking)
    - The advisory report
- If organisations were offered some kind of incentive for implementing the recommendations in the advice report do you think they would be more likely to implement them.?Do you think you/your organisation would have implemented some/more of the recommendations made if there was some kind of incentive to do this?

- If example are requested suggest:
  - A refund of the cost of the DEC
  - A financial incentive (like cash back) proportionate to the number and nature of the recommendations that they implement
- PROBE: If interviewees need more information here, suggest a hypothetical level of up to 30% of the energy-cost savings made by installing these measures
  - Is there anything else specifically that would incentivise you to implement recommendations?

- How does a DEC help to ensure that these changes are continued over time
  - What information, advice and guidance (above what is provided by a DEC) would be required in order to enable change?
  - What additional ongoing support would be required to continue improving your energy performance?
- Is there a way that the DEC could be made more practically useful for organisations like yours?
  - If so, how?

9. Thank and close

The role and impact of Display Energy Certificates (DECs)

Discussion Guide (Private organisations - no DEC)

Summary of overall objectives:

- What are the key drivers to improving energy performance in public buildings?
- Does a DEC play any part in the decision-making around improving energy performance, and if so, what part does it play?
- Do the following act as drivers of behaviour change and to improve energy performance?
  - gathering information required for a DEC
  - benchmarking information
  - publicly displaying a DEC – is there a reputational driver?
- Does getting a DEC lead to better understanding of energy usage and carbon emissions?
- How is the information about improving energy performance used?
- What is the non-monetary cost of obtaining a DEC and what are the related benefits?
- What are the drivers and barriers to change; and what role can DECs play in encouraging a change in energy performance?
- What else needs to be in place to encourage changes in energy performance behaviour / enhance the value of a DEC?

Stimulus (for researcher information only):

- DEC typical journey
- A full size DEC

1. Introductions – 2 minutes

- Thank you for agreeing to take part in this research exploring how you manage energy consumption in you building and your views about Display Energy Certificates
- About TNS-BMRB – independent research agency
- Confidentiality / anonymity
- Following MRS guidelines
- Agreement to record the interview
- Length of interview: up to 60 minutes

2. Contextual exploration - 5 minutes

- What is your role
  - Generally
  - With regards to minimising the amount of energy used

- How important is it to minimise the amount of energy used in this building? Why?
  - Does everyone share this view
  - How do views differ across the organisation Probe: Facilities manager, Caretaker, Senior Management, Finance, Other? (Please specify). Do they differ? If so, how

- What has your organisation done to reduce energy consumption?
  PROBE ON:
  - Behaviour / how the organisation operates
  - Minor works – changing fixtures and fittings
  - Major works – replacing boilers etc

- How are decisions around energy performance in this organisation made?
  - Who is involved in decisions around energy performance? Probe: Facilities manager, Caretaker, Senior Management, Finance, Other? (Please specify)

  - Note to researcher: check who makes decisions compared to the information collected at recruitment stage. Probe for any others

- How easy is it to get agreement to make changes in energy management
  - What are the difficulties (if any)

- Have you ever sought advice about energy management? If so, from where? How useful and actionable was it? If not, why not? Are there any information gaps that exist?

3. Views about Energy Saving Initiatives

- Are you signed up to any plans/initiatives/pledges to reduce your energy consumption?
  - What? When did you sign up?
- Why did you choose to sign up to these particular initiatives
  - Probe on key elements of the initiative
- What are the benefits of being part of the initiative
  - Spontaneous, then probe
  - Promoting energy efficiency to senior staff
  - Promoting energy efficiency to other employees
  - Learning about energy efficient behaviours
  - Promoting company as energy efficient
  - Monitoring their own use
    - For Each, probe on how it does this and why
- What (if any) are the drawbacks to being signed up to these initiatives
- How much does it cost to be part of the scheme
  - Fees

- Consultancy costs
- Time (probe for different levels of seniority)

4. Knowledge of DEC

- What have you heard about DECs before today?
- **If they have heard about DECs in some way continue with questions below. If not, show the interviewee the DEC and double check that they have not heard about DECs. If they have no knowledge move onto section 5.**

Note to researcher: ensure people do not confuse DECs with Energy Performance Certificates which display an energy rating for a building.

  - How long had you known about DECs for
  - Where had you heard about this
- Why did you decided not to participate
  - Spontaneous then probe:
    - The process of getting a DEC
      - What had you heard about the process and where from
    - Cost of getting a DEC
      - how much you thought this would be
      - What would be acceptable
    - What would encourage you to sign up to DEC

5. Response to DEC

Show the DEC certificate and double check they had not heard anything about DECs prior today

- How would you feel about displaying a DEC
  - What impact do you think this would this have on attitudes of staff; senior management; the public
- How effective do you think the DEC certificate would be in encouraging your business to become more energy efficient
  - Probe on:
    - Letter rating
    - Benchmarking
    - CO2 emissions
    - Previous Operational rating
    - Technical and administrative information

Note to researcher: as you probe on the elements of the DEC please ensure that the interviewee understands what each section means. If necessary, read the relevant sections on the DEC to the interviewee and double check they understand

Show typical DEC journey

- How doe this compare with what you expected the process of getting a DEC to involve?
  Probe on:
  - Cost
  - Time
- What would you expect to see in the Advisory report
  - What info would you want / need
  - PROBE to understand how they would like information communicated
- Collecting information
  - What would you expect this to involve
  - To what extent you already have the information required
  - Can you see any benefits of collecting this information

- How important is your company's reputation in prompting your organisation to improve energy efficiency
  - How effective do you think the DEC would be in demonstrating that your business is energy efficient.
  - How do you think you would use it (for example include in corporate social responsibility reports, display certificates in more than one place)
  - How do other initiatives your involved with demonstrate that the business is energy efficient

6. DEC versus other initiative

- How does DEC compare with other initiatives they are involved in
  - Cost
  - Time
  - Certificate as a way to demonstrate performance to the public
  - Providing information
- Would getting a DEC have any impact on the effectiveness of other initiatives you are involved in?
  - Why / in what ways
  - Why not?
- What elements are missing from the DEC, what needs to be included to make it valuable to your company
- Do you think that there is anything particular about your organisation which would mean that the DEC is particularly beneficial / disadvantageous to you
- Would you now consider taking up a DEC?
  - Why / why not?
    - What elements of the DEC would encourage you to take part
    - What elements of the DEC would discourage you

7. Thank and close

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URN 13D/168