

Energy Performance Certificates for Buildings – a two-part certificate?

In the recently closed consultation on the introduction of a national performance-based framework for assessing energy use and carbon emissions in commercial and industrial buildings above 1,000m² in England and Wales, in other words a requirement for Display Energy Certificates for all non-domestic buildings, the Government actually asked this question.

“Should the Government allow owners of buildings above 1,000m² to use their annual performance-based rating (DEC) to satisfy their existing regulatory obligation to present a valid EPC before a building is sold or let? Where prospective buyers or tenants want information about the building fabric and services, EPCs can be obtained on a voluntary basis”.

That someone involved in producing the consultation document in 2021 doesn't know the difference between a DEC and an EPC is staggering. With others I can be more forgiving, there is a lot of “fake news” out there and the EPB Regulations themselves imply that EPCs and DECs are either/or. So, for the avoidance of doubt, I thought I would briefly but hopefully clearly, explain energy performance certificates and how they should be used in the hope that it might be read one day in the corridors of power. To make it even more interesting if that were possible, and on the strength of the explanation I am also going to speculate on the missing consultation or whether we need government intervention for this one at all – performance-based data for domestic buildings.

Energy Performance Certificates and Display Energy Certificates explained.

In the context of the EU Directive that drove the initial Energy Performance of Buildings Regulations, EPCs and DECs were both types of Energy Performance Certificate, so perhaps this is why people get confused. In the context of the UK legislation they are not the same thing. The EPC is an asset rating. It is an assessment of the energy performance of a building, independent of its occupants. This allows a fair comparison between buildings which is what a prospective renter or buyer needs. This is achieved by providing a calculation model using standardised occupancy information. The more familiar concept is the mpg figures for a car. Here, the same test is applied to all cars so it is a reliable comparator. The EPC is providing mpg information on the building. **It is not predicting the performance of the building with real occupants.** In energy management terms it is the starting point, if you are trying to manage your energy use, the better the asset, the better chance you have. This is Part One of your energy certificate. Part Two is your operational rating, the DEC which is retrospective, using the actual metered energy consumption for the building including energy not involved in operating the asset, so not just the energy considered for the EPC, fabric and services, but everything you plug in as well. Again, in energy management terms, this was traditionally referred to as an energy performance indicator, or if weather corrected, a normalised energy performance indicator, terminology still used in operating Energy Management Systems (ISO 50001). It is a much simpler calculation than the EPC, being total energy consumption divided by floor area, despite numerous commercial attempts to make it seem more complicated. It is important to remember that this is retrospective analysis and is therefore reliable, based on recorded data. There are theoretical models that, starting with the standardised EPC calculation, try to predict actual performance using statistical modelling. There may be some situations where this is useful and worth the expense, but it is never going to be as accurate as the DEC based on actual data. For most

energy management purposes this is what you want, actual data. It is such a simple concept but it has three different uses.

Knowing how much energy your building uses per m² tells you:

1. How well you are managing your building, say a school, compared to what is typical for a school.
2. Whether you have improved the building or how well you managed it compared to last year.
3. If you have made a specific improvement, say a new boiler, how much it has improved your energy performance.

So, there it is, Part Two of your energy certificate. It is worth stressing that when you are considering improving the building, the DEC calculation cannot be used to quantify the likely benefit of that improvement, you have to go back to your Part One, EPC calculation for that. For investment purposes, this is where you might want to adjust the answer to account for how the building is actually used.

So, to summarise, it is NEVER a question of EPC or DEC, they are part one and part two of the energy information package that every organisation needs to effectively manage and reduce their energy use in their buildings.

So, what about a domestic DEC? Too much red tape? Too expensive? A house or flat doesn't use enough energy to be worth the trouble? Well, firstly homes are responsible for as much carbon as commercial buildings, but much more difficult to manage as there are so many of them and their energy use is individually managed. Most homes already have Part One, the EPC and perhaps the Part Two just needs to be facilitated rather than regulated, it is a very simple calculation. It is certainly well recognised that you can only manage what you can measure, and everyone likes to do better, has an inbuilt competitive streak, so if provided I think many would use it voluntarily.

So, let's say there is an App, and it allows you to enter your house details including floor area, and energy data for the previous 12 months. It has been set up with all the weather data to do that correction for you and it can tell you over time what your figure was last year, the year before and even monthly, and based on all the data collected what is typical for that 3 bed semi in Manchester. This would be easy to use, easy to understand and would motivate everyone using it to improve their energy performance. No legislation required, no red tape, it just needs someone to develop the App. There is a challenge perhaps for the Part One industry, the domestic EPC schemes or maybe their association – PEPA.