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Energy data represents 'big data' that offers a huge opportunity for facilities managers to improve a building's energy use. Analysis of this data can deliver greater value to the building maintainer, occupier and owner.

ESOS compliance

The government's Energy Savings Opportunities Scheme (ESOS) requires all large businesses to undertake energy audits to identify energy efficiency opportunities. ESOS phase one closed in January and ESOS phase two has now started, with a compliance deadline of December 5, 2019.

ESOS data is useful in several ways, particularly for continual energy monitoring. First, phase one reports will offer FMs details of energy savings opportunities that could identify more energy-

saving projects. Second, FMs can assist re-compliance by keeping good records of building and transport energy use, along with further energy audits undertaken to BS EN 16247. Third, the data might offer managers insights into alternative compliance routes to ESOS – such as ISO50001.

MEES compliance

The 2011 Energy Act requires the government to set minimum energy performance standards in the domestic and non-domestic rented (leased) property market.

The 2015 Energy Efficiency Regulations defined the Minimum Energy Efficiency Standards (MEES), which have been set at an 'E' EPC rating, and made 'F' and 'G' rated

▼ All landlords and/or tenants must meet minimum standard of 'E' EPC by 1st April 2018 – or have submitted a claim for exemption

buildings unlawful. Key dates for MEES are:

- 01 April 2018 – Minimum 'E' EPC for new leases and renewals/extensions
- 01 April 2023 – Minimum 'E' EPC for all leases

So, by 1st April 2018 all landlords and/or tenants will need to have met minimum standard of 'E' EPC, or have registered an exemption.

The schedule of lease renewal dates along with corresponding building Energy Performance Certificates (EPCs) provides the data needed to assess compliance. The schedule will identify buildings that are F and G-rated and/or document buildings where the owners have challenged the accuracy and validity of the EPC. The industry often highlights inaccuracies in the EPC data so the schedule should include the calculation methodology


used (date and version) and the name of the consultant.

Closing the gaps

In theory, new buildings are designed to be energy-efficient, but 'low-energy' buildings can actually use far more energy than expected. FM teams are well placed to compare actual performance with the designer's predictions. The manager should request a copy of the designers Simplified Building Energy Model or approved software model and compare this with the building's real energy use. The designer's model may only consider the legislative boundary, so additional loads (equipment and/or processes that are not considered by Building Regulations) may be required.

Delivering energy-efficient asset replacements

Asset replacement is normally driven by breakdown trending or CIBSE guide M economic age criteria, but energy efficiencies and performance data can add a different dimension to this strategic decision-making.

All new buildings have sub-metering and this data can be analysed to assess plant performance. In older buildings, temporary energy monitoring equipment can be used. This allows comparisons of energy use to be made per plant item across daily/weekly/seasonal use. If the FM holds data for similar building types they can compare benchmark performance between the boilers and chillers from one building to another. They can also make a simple payback (or more complex net present value) analysis to decide when inefficient assets should be replaced. 

ENERGY STRATEGY

USING BIG DATA TO DELIVER STRATEGIC ENERGY SAVINGS

Are we blinded by an abundance of energy data? Perhaps we are, given that (evidence suggests) all too often we are not actually using it, says **Paul Bennett**, of building services sustainability and environmental consultancy BSSEC

