

What do I do with all that data?

Talk about Energy Data collection, AMR Meters and the Carbon Reduction Commitment Scheme has become a staple part of a Facilities Manager's working diet. What does all this data collection actually achieve and how can it assist a Facilities Manager when it comes to energy efficiency and energy procurement asks **Steve Andre**, of Pulse Commercial Utilities.

DATA collection and data collection techniques are evolving and more sophisticated collection models constantly appearing on the market. Even the basic data collection models, which have been around for some time (certainly since the advent of HH meters) can create better working practice opportunities for Facilities Managers if utilised correctly. Energy data even in its simplest form can be a powerful tool for cutting costs and developing efficiency.

A major benefit of energy data analysis is that it can be used to research more suitable electricity tariffs. We have all probably heard of the Economy 7 Tariff and Economy 10 electricity tariff which offers cheaper electricity during 7 off peak hours and 10 off peak hours respectively. The economy tariff user would try to maximise their electricity usage during these off peak periods. These have been seen as a cost effective solution for the residential market for many years and equipment such as night storage heaters were developed to maximise the benefits of these the Day rate.

However, use of preferential time/seasonal tariffs has become a forgotten art in the commercial sector. Most business are set up on a standard Day and Night tariff and usually only use up to 10% of their electricity at night. So in effect these businesses only receive a single rate tariff. Data collection can allow you to understand what parts of the year and what of the day you use your electricity. This can subsequently provide a valuable insight

when negotiating Electricity Tariffs.

HH Electricity Meters, which most large users will have, are able to support a multitude of tariff rates that vary month to month and during different parts of the day. So a standard Day and Night tariff can easily be split into combinations of Winter Day, Summer Day, Evening, Weekend and Night Tariffs. The most inventive Suppliers have realised that by offering a multi-rate tariff they can potentially attract a wealth of new business and compete against suppliers who they were previously uncompetitive against.

Through the correct data collection and understanding of that data, businesses can see patterns to that lend themselves to more suitable electricity tariffs. For instance, in the Leisure industry usage is typically greater

during the evenings and weekends.

Below is a projected annual usage summary of major cinema chain based on their last 12 months consumption at all their sites. There is a distinct usage increase in the summer when equipment such as air conditioning units are demanding more power.

The table below shows the same cinema chains daily average daily usage for each day in the year. What is striking about the usage is consistent each day of the week with slightly increased usage during the weekends. Usage begins to peak at around 12.30pm and continues at its peak until 21.30pm.

The question now is how can we exploit the results when it comes to negotiating electricity tariffs? Table 1 shows that there may be a benefit in applying a Winter/Summer Tariff.

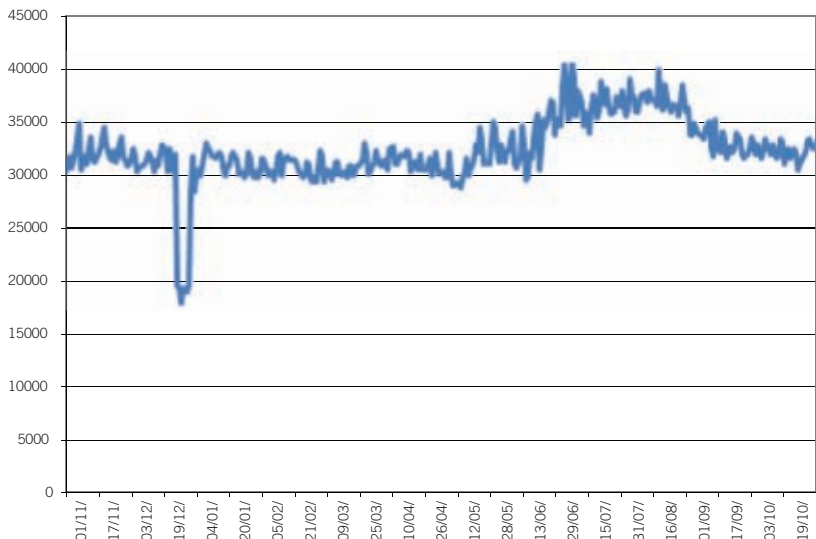


Table 1

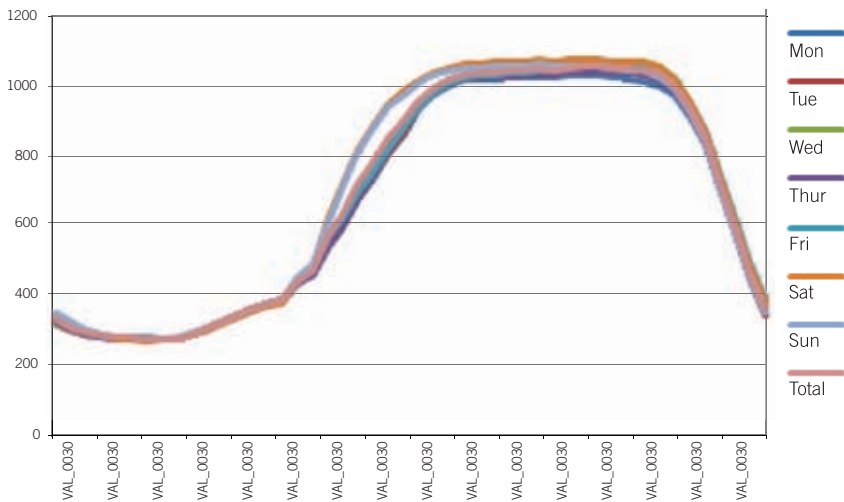


Table 2

A Winter Tariff will entail a slight premium but the Summer Tariff will entail a discount. Table 2 shows us that the cinema chain will benefit from a discounted Evening and Weekend Tariff that provides a cheaper unit rate in the Evenings when the majority of the consumption occurs.

By reviewing the Data Collection we were able to negotiate a 4 Rate Tariff that provided cheaper electricity during Summer Days, Evenings and each Weekends in the year. When this bespoke 4 Rate Tariff was compared to the same supplier's standard Day and Night Tariff the 4 Rate Tariff offered a 7% saving across the entire group.

As mentioned, whilst HH Meters can be manipulated to offer a variety of Tariffs not all suppliers will entertain deviations from the Day/Night norm and certainly all suppliers would want to ensure that they can still commercially benefit from the bespoke Tariffs so the process will take longer than a standard renewal negotiation due to the give and take negotiation process. Another benefit, in addition to the cost, is also the opportunities that such tariffs create in relation to energy efficiency drives such as the DECC Carbon Commitment Scheme.

For instance the cinema chain based on their previous usage patterns know that their Winter Day Rate will have a premium attached to it to compensate for the cheaper Summer Day Rate. By looking into ways to reduce their electricity consumption during the more expensive winter days the cinema chain will benefit financially as they strive

meet their energy efficiency targets. Thus creating an added incentive to strive for Energy Efficiency.

Maximum Demand Data Collection (KVA)

Most large energy users are allotted a maximum demand by the Distribution Network Operator (DNO). In theory if you switched on every single piece of electrical equipment you would reach your maximum demand (the most amount of electricity that you would use at a single time). The DNO, therefore, needs to allot all large energy users an Available Capacity Level (seen on invoices as KVA).

In extreme cases when the maximum demand exceeds the KVA level this can cause power outages and load shedding which can have costly implications.

The DNO network charge a rental fee based on the KVA level set for that energy user. This is passed onto the consumer by the energy supplier in the bill. The higher the KVA is set, the higher the KVA cost per annum.

In many instances there is no science behind the KVA levels that large energy users are given. Most KVA levels are based on historical estimations and over the years the site may have encountered changes that affect its KVA such as the introduction of more energy efficient equipment, changes in occupancy and changes in trading/working/production patterns.

In our experience most new builds have their KVA set by the building contractor or quantity surveyors who tend to set the KVA level high

initially to cope with any what is effectively untested demand. The KVA level is never then audited post completion often leaving the KVA at an inflated level for years to follow.

By collecting KVA usage over a 12 month period an analysis can be undertaken to identify if your KVA is set at the correct level.

The onus is on the energy user to review their KVA Level as the DNO will not review them and rely solely on the historical setting, although they may ask you to increase the KVA level if it is set too low.

An analysis of the KVA levels is another example of how large energy users can benefit from Data Collection and Analysis. The added benefit is that the KVA level once adjusted can eliminate what may currently be a wasted cost. 🏠

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