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A new approach to metering

Tim Hooper believes a new approach is needed to sub metering. We need to sweep away the assumption that it is a fit-and-forget item but focus on a long-term strategy

Like many existing energy management technologies and techniques, sub-metering is not new or particularly cutting edge. Yet there is still a frustrating number of large organisations not reaping the benefits that metering data can provide and smaller companies simply not utilising their data at all.

There are many reasons why metering data is under-utilised, these range from poorly specified systems to systems designed to a price without due consideration to how the data must be used. Also, the lack of knowledge in both operating metering and using metering data often results in degradation and neglect of the metering data. And it's a bad assumption to think metering is 'simple' or 'fit and forget'.

It's inconceivable to think that data for energy and carbon consumption will not need to be collected and used for the whole net zero journey. Metering data is just a small part of the full data set needed, but it is a critical one.

Metering is a key requirement for tracking, quantifying and identification of energy and carbon reduction and is essential for all organisations embarking on a plan to net zero.

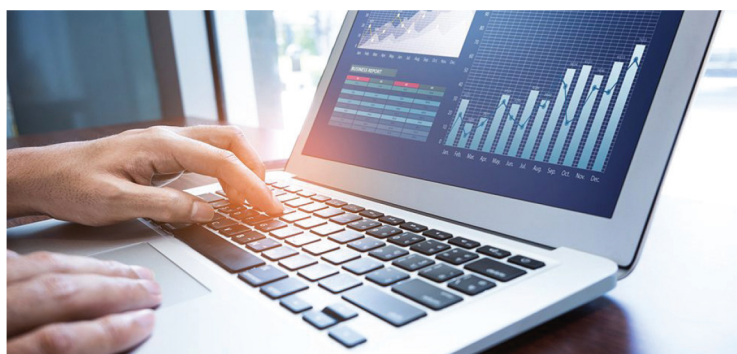
Managing metering data

Realising that the data is needed also requires acknowledgement that metering data must be well managed and maintained.

Fig. 1 shows a typical waterfall graph showing emissions and the abatement opportunities to reach net zero. In all cases data (metering data and other data) will be required for accurate reporting and progress tracking.

It is time that energy managers, sustainability managers and specifiers accept and embrace the need for metering data. Turning a blind eye, stating it is too difficult, or ticking compliance boxes should no longer be an acceptable approach. Metering and metering data needs to be understood and used. Whether that is in house capability or by using expert third party providers.

Metering (and this will apply to many other forms of other necessary data) needs to be considered as a long-term foundation of the net zero



plan, and therefore, its importance is escalated. It won't be acceptable to assume meters can be easily fitted and will provide an everlasting river of good quality data.

In reality, it's not the metering or system itself that is important but the data it provides. Organisations must recognise this and consider three issues that may have been ignored previously:

- it's all about the data – and the data must be reliable and useable for the

next 15-25 years;

- metering and systems, therefore, need to operate for the full 15–25-year duration, if the data is to be complete, accurate and up to date. To allow this to happen, the metering technology must be designed to read existing meters from any manufacturer and use standard protocols for reading future meter types;

- future-proofing the data – this relates to the accessibility of the data, the system must be capable

of working today but also have data sharing capabilities to work tomorrow.

Based on current behaviours, adoption, and operation of metering systems, it's still the case that organisations are still fitting proprietary systems and locking themselves into a technology that may not last 25 years. Locking data into proprietary systems is restrictive and over the medium to long term, likely to result in both sub-standard data and higher costs. Additionally, many systems claiming to be metering systems do not allow full portability of data.

With this in mind, metering systems now need to be considered quite differently from the past.

Three major components

A metering system comprises of three major components (see Fig. 2):

- the meters (typically electricity, water, gas and heat). There are many meter manufacturers, so a new system must be agnostic to the existing meters but also agnostic to new metering available over the coming years. Proprietary equipment at this level should be avoided and new systems should utilise as much of the existing meters as possible;

- the data collection system. This is an area where energy and sustainability managers must consider the data. Fundamentally, the data collection system is just a conduit to read and store the data and to pass it to another system for analysis. Data collection will need to perform a lot of operational functions (reading/storing/data checking etc) but most importantly the data collection system should be agnostic to the meters it is reading and similarly agnostic to the data analytics platform it is feeding; and

- data analytics. There are many analytic options available and there will be even more choices in the future. It is critical that any platform can easily receive data from various sources and formats (most already do). It is very likely that the analytics tools you have today may be replaced three or four times over the journey to net zero as will the number of specialists, consultants and analysts.

This approach has not yet been fully adopted by specifiers and energy professionals. Rather, metering and metering systems have been engineered to meet minimum compliance standards rather than underpin a strategic plan. ■

Fig. 1 The abatement opportunities to reach net zero

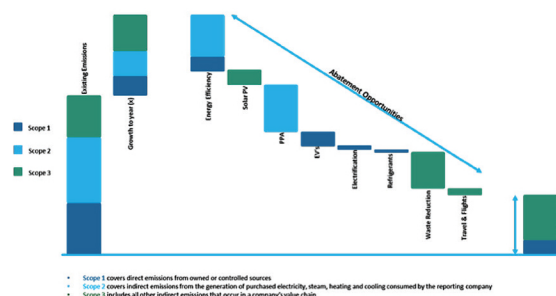


Fig. 2 The three major components of an energy metering system

