ADVANCED METERING

HOW TO...

Usually, the decision to adopt advanced metering is instructed by the asset manager and the process of installing and managing advanced meters is coordinated by the property manager with input from the facilities manager.

Advanced metering follows four general steps.

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STEP 1: FORMULATE A METERING PLAN

A metering plan should include a property's metering schedule and strategy.

Metering schedule

A metering schedule involves identifying the main and sub-metering arrangement on-site, and documenting the location and function of each meter in tabular and diagrammatic forms. It is important that meters listed on a metering schedule are also illustrated in the building's low voltage distribution schematic.

One way to do identify meters is to review existing billing arrangements to determine relevant main meters and to document the findings. Where there is no reliable information to identify the level of metering present within a property, a metering survey can be undertaken by a competent individual, for example, an energy specialist.

A metering schedule should provide:

- A list of all the meters in a building.
- Meter names/references.
- The areas served by each meter, and whether they are fed from or feed to other meters.

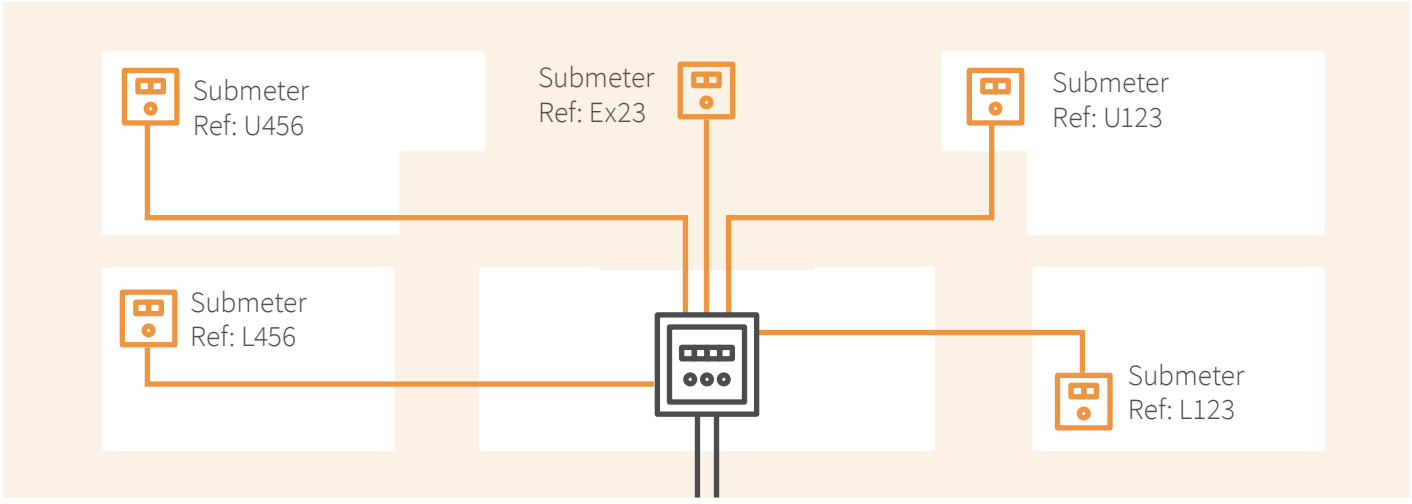
Metering strategy

A metering strategy can help to develop an understand of how to align a property's metering with the utilities goals of the asset manager and, potentially, occupants.

As most properties have meters on the incoming supply for billing purposes, these meters cannot indicate, on their own, the reasons for a property's utilities consumption profile.

A well-considered sub-meter strategy will define where submeters will be installed, what they will monitor and how information from the meters will be captured and used to enable performance improvement through the identification of inefficiency and/or more accurate billing.

A metering strategy should also consider the cost, practicality of installation, and value of the information gained by detailed metering against potential future savings.



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STEP 2: INSTALL METERS

It is important that the installation of meters reflects the details specified in the metering plan, and that the installation, commissioning and handover stages are carefully considered.

All new meters used for billing purposes must conform with EU Measuring Instruments Directive, and, following the installation of meters, calibration certificates should be retained and renewed every 12 months.

A metering specialist should be engaged to:

- Install and commission meters in line with the manufacturer's instruction, which will ensure accuracy of readings and effective operation.
- Check the installation against the metering schedule and design drawings, with spot checks undertaken to determine if meter readings are in the range of expected values.
- Check that the aggregate of all sub-meters equates to the main meter reading.

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STEP 3: CONNECT DATA FROM METERS TO A PROPERTY'S DATA ANALYTICS PLATFORM

It is important to be able to visualise and interpret the utilities consumption data captured through advanced metering. This can be done through connecting the data from advanced meters to a building energy management system (BEMS) or web or digital based data analytics platform

Web portals or automatic metering systems provide real-time analysis where consumption data can be downloaded or be built with energy dashboards demonstrating energy operating patterns of the buildings.

A competent energy specialist should be consulted for technical advice regarding the suitability of various data visualisation and analytics platforms which are available in the market.

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STEP 4: CONTINUOUS MONITORING FOR PERFORMANCE IMPROVEMENT

It is important to establish a continuous monitoring process of the data captured from advanced meters.

This process will allow for specific interventions and initiatives to be identified to drive utilities savings and contribute towards an overall positive performance of a building.

There are numerous benefits of continuous monitoring which include tracking towards utilities targets and aligning building services with actual use requirements.