

Campus Energy and Water Resource Metering

Energy and water managers have long known the value of metered data. With recent advances in energy and water metering and information systems resulting in increased functionality at lower costs, obtaining these data in a cost-effective manner is now a standard practice.

Whether energy and water resource managers are trying to comply with legislated and mandated metering requirements, or looking to apply accepted building management best practices, such as utility bill verification or benchmarking, today's metering technologies can provide the information needed to meet energy and water goals, save money, and improve building operations.



Metering of energy and water utilities has seen an increase in interest, application, and technology advancement in both the private and the public sectors. One significant driver of this heightened interest is the ongoing modernization of the nation's electric infrastructure with the move toward the smart grid and smart meters. Another significant driver, specific to the Federal sector, includes the legislative mandates for metering of Federal buildings.

The Business Case for Metering

The application of meters to individual buildings and energy-intensive equipment provides facility managers and operators with real-time information on how much energy has been or is being used. This type of information can be used to assist in optimizing building and equipment operations, in utility procurements, and in building energy budget planning and tracking.

It is important to keep in mind that meters are not an energy efficiency/energy conservation technology per se; instead, meters and their supporting systems are resources that provide building owners and operators with data that can be used to:

- Reduce energy and water use
- Reduce energy and water costs
- Improve overall building operations

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- Improve equipment operations

How the metered data are used is critical to a successful metering program. Depending on the type of data collected, these data can enable the following practices and functions:

- Verification of utility bills
- Comparison of utility rates
- Proper allocation of costs or billing of reimbursable tenants
- Demand response or load shedding when purchasing electricity under time-based rates
- Measurement and verification of energy project performance
- Benchmarking building energy use
- Identifying operational efficiency improvement opportunities and retrofit project opportunities
- Usage reporting and tracking in support of establishing and monitoring utility budgets and costs, and in developing annual energy reports.

Most of the metered data uses listed above will result in a reduction in energy and water costs. The degree of cost reduction realized will depend on the unit cost of the energy and water being saved and on the effectiveness with which the site analyzes the data and acts upon its findings and recommendations. Examples of additional metering benefits can include:

- Supporting efforts to attain ENERGY STAR and/or green building certifications
- Promoting tenant satisfaction by providing information that tenants find useful in managing their operations
- Prolonging equipment life (and reducing capital investment requirements) and improving its reliability by verifying the efficient operation of equipment
- Assessing the impact of utility price fluctuations prior to or as they happen, allowing sites/agencies to address budget shortfalls on a proactive basis.