

Building knowledge and solutions to increase workplace performance.

Controlling Business Costs with Energy Intelligence

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By Jim Williams

For commercial property owners and managers, much of their operating budgets are tied to energy use. In fact, energy accounts for 25 to 35 percent of building operating costs, making it among the largest operating expenses for a commercial office building. Although it was once considered a fixed cost, energy use is quickly becoming a top management concern, as building owners and managers begin to discover opportunities to control costs and improve the bottom line without jeopardizing tenant satisfaction.

When energy is managed efficiently, facility managers can allocate costs, drive energy conservation, and reduce operational expenses. By developing a detailed understanding of how, when, and where energy is being used, facility managers can negotiate better energy rates and evaluate potential investments in new capital equipment, energy conservation equipment, and energy-efficient infrastructure. Advanced metering systems, which combine metering hardware either with energy intelligence software or Web-based access to the energy data, are key to developing a comprehensive energy management strategy for lower operating costs.

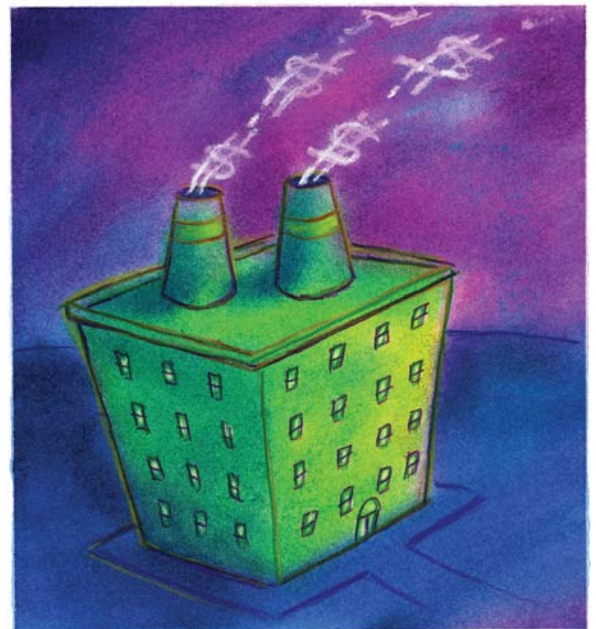
Cost-Saving Opportunities

One of the primary cost-saving measures in an advanced metering system is the ability to bill tenants for their actual energy use. U.S. Department of Energy studies have found a 15 to 20 percent reduction in energy use when a space is being metered, demonstrating that tenants are proactive in conserving energy when they know they must pay for their actual use. Advanced metering enables more accurate tenant billing, which in turn allows building owners and managers to recover the true cost of energy. With the onset of deregulation, building owners have experienced significant fluctuations in

rates and mostly upward pressures. Without advanced metering, managers must rely on the fixed energy cost allocation detailed in a tenant lease, which prevents buildings from recovering rising electrical costs. Additionally, properties with these systems can more accurately measure and recover common area energy usage, further increasing cash flow by shifting true energy costs to tenants.

An advanced metering system also can help identify specific processes and equipment that are not energy-efficient. Once these inefficiencies have been identified, managers can prioritize new capital equipment and infrastructure investments, directing resources to the areas that offer the largest return on investment. The savings from initial improvements can then be reinvested to address other inefficiencies. Once investments have been made, the system can be used to verify effectiveness of performance contracts promising energy efficiency. Additionally, advanced

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metering helps alert building managers to potential equipment maintenance problems and thus helps reduce associated excess expense and downtime.

Another potential cost-saving opportunity associated with advanced metering and a comprehensive energy intelligence system is participation in utilities' regional demand response programs. These programs frequently provide rebates to properties that reduce high-energy loads during peak regional demand periods. Advanced metering allows property managers to compare actual on-site energy load reductions with a predetermined baseline to ensure compliance with the demand response program. Advanced meters can be used to identify the loads driving peak demands. Management can then evaluate which loads can be shifted or reduced with negligible impact to building operations, thus allowing demand response program participation while minimizing impact on tenant comfort.

In favorable regulatory environments, energy intelligence is critical for building owners and managers who want to negotiate more competitive utility rates. Some property managers can aggregate their energy loads across multiple properties to make themselves more attractive to the utilities during these negotiations. In addition to enabling managers to reduce energy costs, an advanced metering system also helps them avoid what are known as "peak demand charges" by reducing the rate at which energy is being used. Peak demand charges, often overlooked, can be very costly to a property if they are not minimized.

Other Energy Management Benefits

Beyond helping property owners and managers control energy operating expenses, an energy intelligence system can provide other competitive advantages. For example, an advanced metering system can assist managers in attracting marquee tenants and building long-term relationships with existing tenants by facilitating value-added services. For an older building, these services can be critical in helping the building compete with newer buildings. Energy intelligence systems also help attract and maintain tenants by enabling building managers to provide those tenants with periodic or instant access to their energy data, which can help tenants themselves achieve greater

operational efficiencies. Lastly, an advanced metering system allows property managers to market a building as individually metered and, because the projected cost of energy does not have to be factored into lease rates, managers can offer lower lease rates than non-metered buildings.

Getting Started

Energy needs differ dramatically depending on the type, size, and age of any particular property. Because of these variances, it is important to select an advanced metering system vendor who understands the unique energy usage needs and challenges of a particular type of facility. An experienced provider will be able to design a comprehensive and flexible advanced metering program that ensures success of the overall energy-usage strategy and cost-savings plan. A well-designed advanced metering system will encompass aspects of cost reduction, cost allocation, and energy conservation (including electricity, gas, and water resources, as appropriate), while at the same time allowing for future system modifications as energy needs grow and change.

Key components of a comprehensive advanced metering system include:

- Utility data recorders, which track the total load within an enterprise to benchmark energy usage patterns and to uncover "out-of-tolerance energy use."
- Advanced meters, which measure actual energy use behind the main utility meter and are critical to proactively managing energy costs and determining the drivers of excess use.
- Energy intelligence software, which makes information available in a timely manner to individuals across the enterprise. Data can be communicated through dial-up, cellular, Ethernet, and Internet connections and enables decision makers to manage both energy usage and cost overruns.
- A building management system, which allows managers to initiate load-shedding strategies based on information they glean from advanced metering technology. ■

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