

A utility management system enables intelligent analysis of power data to minimize electrical system problems and leverage utility energy data to save money. The major points in achieving these goals are:

- Provides a dashboard-like (graphic user interface) status of entire electrical system and piped utility system
- Helps reduce utility bills by avoiding peaks
- Provides early detection of power quality problems
- Tracks and allocates energy usage
- Enables facility capacity planning and maintenance
- Logs, trends, and records events for quick troubleshooting

## Key Benefits of Utility Management Systems

### ***Unify Management of All Utilities***

Utility management system capabilities range from operational-level software to enterprise solutions that can consolidate and analyze all consumed energy types across all geographical locations through a single, unified interface. For example, you can integrate metering of electricity, water, air, gas and steam that can correlate electrical and piped utility data, and combine with temperature and humidity readings to calculate and optimize system efficiency automatically convert measurements for each utility type to common units (such as BTUs) to allow accurate comparisons.

### ***Identify Root Causes and Opportunities***

Isolate and reveal the drivers behind inefficiencies or changes in energy consumption, relating them to everyday business processes. "Drill down" to more levels of detail in order to understand what is driving the behavior of the defined performance metric.

### ***Uncover Hidden Trends and Patterns***

View energy use and costs by organizing and aggregating consumption data by time of use, production volume or other driver. Aggregating energy consumption by shifts may uncover differences in efficiency from one shift to the next. Detect and analyze sudden spikes in energy that could indicate pending equipment failure, or sustained changes that may be the result of equipment replacement.

The biggest benefit of utility-metering and -monitoring equipment is that it puts users in a proactive position by increasing their knowledge and giving them the information they need to increase the reliability of their systems. Today's meters and power monitors have the capability to capture events, provide historical trending data, and even provide control functions. This information can be used to help reduce energy demand during peak power-consumption periods, as well as assist in analyzing harmonic-distortion levels needed to determine and implement corrective measures.

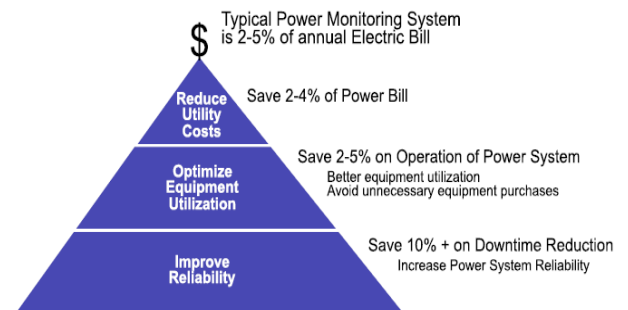
Long-term metering provides facility owners with a "map" of load changes, allowing the owner to track daily, weekly and seasonal variations, as well as discern long-term trends. This capability aids in planning for maintenance outages, increasing loads and capital expenditures for system upgrades and improvements. In addition, owner metering gives users a comparison base for determining how reasonable utility billing is, and for identifying money-saving opportunities on electric bills.

### ***Avoid Risks to Uptime & Reduce Operational Costs***

Your business depends on continuity of power. Affecting everything from computers to controls and motors, the aggregate cost of power quality events is estimated at \$300 million each year for continuous-process manufacturers. Monitor elements like run-time, voltage, frequency, fuel levels, pressures and temperatures to determine stresses on generators, transformers and other components throughout your facility infrastructure.

## Savings Opportunities

Utility costs are a major business expense. In today's competitive climate, treating these costs like other raw materials and continually looking for ways to increase quality will cut expenditures. In order to manage these costs, they must first be measured. In fact, a study by the Energy Cost Savings Council revealed meters and



monitors have an average payback period of less than six months and an average return on investment (ROI) of 200%!

One utility management system vendor<sup>1</sup> uses the iceberg analogy to illustrate utility cost savings. When people view an iceberg, the only thing they see are huge peaks rising above the water. In reality, the majority of an iceberg is actually under the water, out of view. Utility costs savings can be thought of in much the same way.

Think of your utility bills as being the peak, easy to see every month. By simply installing and leveraging your utility management system, you can realize a 2-4% savings – but that's just the "tip of the iceberg" in terms of your potential savings.

The majority of savings can be derived by looking beyond a utility bill – or below the surface. An additional 2-5% can be saved through better equipment utilization and avoiding unnecessary capital purchases. Another 10% can be found by improving power system reliability.

### **Recommended Steps to Implementation**

The following steps illustrate how a facility manager can get started on implementing a utility management system. The steps assume that your company has multiple facilities; however, the plan is very applicable to owners with simply one building.

1. Perform a Site Assessment of a "typical" facility in order to determine:
  - a. Existing metering capabilities
  - b. Power distribution system complexity
  - c. Communications interface
  - d. Distances for interconnection of equipment.
  
2. Work with site assessment team to Determine Guidelines, based on review of typical facility and on future organizational strategy, that should be leveraged across the organization, such as:
  - a. Automation vendor and products
  - b. Metering/monitoring system vendor and products
  - c. Communication protocol for interconnecting the meters and devices within each facility
  - d. Network infrastructure for interconnecting the various facilities

3. Report from consultants should include:
  - a. Summary of site assessment findings.
  - b. Recommendation of utility and reliability management system based on site assessment results and the guidelines that the team has established.
  - c. Budget Estimate and Implementation Plan for installing the management system in the "typical" facility that was assessed, with guidelines and criteria for how your organization can leverage this plan across all facilities.

Reference:

1. <http://www.powerlogic.com/index2.cfm>

### **For more information...**

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