

## *Are You Paying Too Much Trying to Save Money on Your Electricity Bill?*

It is well known that you can't fix a problem until you know what the problem is. But, in some cases it just costs too much to determine where the power is being used at a facility. Advanced metering initiative (AMI), smart meters, sub-metering, smart-buildings, building automation systems, and smart-grid are just a few of the "buzz-words" swirling around the technology options you might consider to help you get a better handle on the important question "where are my electricity dollars going?"

### *What Can I Do?*

Make intelligent choices about the type of power monitoring that is most appropriate for your needs. **One size does not fit all.**

Should you be monitoring all of the power used in your plant or measure the power used by some key power-hungry pieces of equipment with a portable tool?

#### **Permanent or Portable Installation.**

Should you use a permanently installed solution or a mobile solution that can be easily moved around to various power distribution

panels or pieces of equipment. Permanent installations frequently require a more involved (and expensive) installation that requires power interruption, new wiring in conduit and often a more expensive set of hardware to complete the solution. Permanent solutions can be more accurate than portable solutions. Portable solutions can provide a "quick view" of power consumption status, may require much less expensive installation and less expensive hardware and may be 95% accurate compared to permanent solutions that may be "revenue grade" 99.8% accurate.

#### **Determine your goal and stick to it.**

Are you trying to verify the accuracy of your electric bill from your utility or are you trying to reduce electricity consumption in your facility by understanding where the power is going and then developing a plan to reduce your usage?

This issue will help you determine what level of accuracy you need for your situation.

Concerns about the accuracy of your utility provided electric meter (which is used to determine your monthly "electric bill") can be handled by a call directly to your utility. Either they will replace your meter or explain their quality control processes about when your meter was last calibrated.

**Select the accuracy you need for your goal.**

The world is full of trade-offs that we make all of the time. Measuring power use is subject to similar engineering trade-offs that you apply to other parts of your job. No magic here - just common sense.

Trade-off monitoring system cost for accuracy of the results.

Do you really need "revenue grade" measurements that are accurate to 0.2 % of the "actual value" or can you settle for a +/- 3% accuracy for 1/10 the cost?

For example, when making a measurement of a recently manufactured part, you do not put every part under an electron microscope to verify that the finish is sufficiently smooth and within product specifications. No, you use an appropriate monitoring tool that is just accurate enough to tell you that your product is within the required specifications -- Typically, you just use the tool needed to get the job done -- and nothing more sophisticated or expensive.

**Stay focused on the goal - saving money on your electric bill.**

Don't get distracted by other issues that can hugely inflate the price of a power-use monitoring solution!

Building automation systems can provide much information about electricity use at your facility in addition to controlling lights, heating, ventilation, and air conditioning. But at a price! It is a rare situation in which a building automation system can return enough dollars from electricity savings within the first 5 years to pay for the acquisition and maintenance costs of the system (ROI). Under many situations, a monitoring system that only tracks electric power use, can pay for itself in less than 3 months!

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