Gathering The Perfect Storm For Soaring Electricity Costs

By Bob Zak

Industrial manufacturers consume roughly one-third of the power utilized in the US. This fact is not lost on utilities and energy service providers.

Lucrative programs and new incentives exist today for industrial companies as power providers try to find ways to tap into the demand side and create more capacity. With new control technology solutions available and good strategies for implementation, it is now possible for industrial manufacturers to take advantage of these opportunities to improve their bottom line.
Utilities have traditionally operated on a "give the donkey a carrot and the stick" type of mentality; and now is no exception. The "carrot" is emerging as incentive programs like Demand Response in which power providers offer to pay an end user to curtail power during brief capacity-constrained hours.
With usually 10-minute, 1-hour or 24-hour notices, the user is asked to reduce his or her electrical load for a few hours and is paid handsomely for every kilowatt of reduction he or she delivers. The "stick" is appearing as painful increases in peak demand-based charges on the monthly bill. It may be very expensive in the future to operate at high levels of demand during times when utilities need power the most.
The opportunities in front of manufacturers center on how to minimize the impact of increasing demand charges, while at the same time positioning themselves to take advantage of lucrative earning incentives for Demand Response. What before was a risky and difficult prospect can now be a true operating advantage to those using the right technology.

Intelligent Energy Management

Manufacturing plants are not the same as commercial buildings. Limiting electrical demand without the right controls in a typical office building may result in a room getting a little warm, but it certainly cannot be called a critical event, whereas curtailing equipment on the plant floor without the proper automated controls in place can be devastating to the process and, therefore, to the business.
Many industrial facilities use automation to control their processes, and increase their manufacturing efficiency and reliability. In most cases, these same facilities use only manual procedures, if anything at all, to control how power is used. It is a surprising number, but less than 1 percent of all commercial and industrial companies use automated technology to measure and manage their use of power.
The reason companies do not currently participate in energy management to reduce peak demand most often is risk. Many site managers are not confident the actions taken will produce benefit that outweighs the risk being taken.
Now, intelligent industrial energy management can remove that risk and provide

great efficiency, much as when modern factories automated many of their manufacturing processes.With intelligent energy management systems:

- High-level calculations determine the exact action needed; only the exact power needed to meet goals is shed, no more.
- Facilities receive instant access to energy data to make more informed decisions and gauge program success.
- The user predefines how the system is to act under certain production situations, moving the decision to a financial one instead of emotional.

- Payback is usually less than 18 months, and results are very measurable.

The type of energy automation utilized in manufacturing plants, especially high-usage facilities, should be a type suited to their environment and needs. The construction of the solution from the controller to the I/O devices to the interface should be industrial grade and specific for demanding plant floor applications.
New technologies for reducing installation costs, such as wireless I/O and standard interfacing protocols (for communicating with existing automation), can keep the payback very enticing. The system itself, and the company providing it, should be integrated not only with expertise on utility billing and rate scenarios, but also the specific needs presented to a manufacturer. One of the best ways to evaluate this is to look for experience in your type of application, and talk to the folks who have used it.

Turning Electrical Loads Into Revenue Generators

For an industrial manufacturer, energy is one of the top costs of doing business. It only makes sense that managing this cost is a good business decision. In addition to creating savings on their bills, there are now ways for factories to earn money by making strategic load adjustments.
Demand Response is the concept of end-use customers modifying their electric energy usage in response to changes in rates or incentives provided by utility companies. The goal is to lower system-wide demand during peak times through controlled loads, rather than building additional power generation infrastructures.
Demand Response, although around for years in the form of curtailable rates, is emerging now as utilities' most promising method of dealing with increased pressure on their supply during high-usage times, such as summer peak hours. It is less expensive for utilities to create incentives for industrial and commercial users to lower their energy demand during peak times than it is for utilities to produce additional electricity, and sell it to those who cannot alter their energy-consuming behavior.
Programs and rate schedule adjustments are being designed to promote participation in Demand Response. Joining these Demand Response incentive programs and taking advantage of the payments offered is a good opportunity to generate significant revenue.
Again, using automated technology available today to carefully manage these activities can balance the desire to achieve the benefits with controlling the risk to an acceptable level, providing a significant advantage over those companies that

pass by these opportunities. Many utilities also offer innovative financing and grant programs that pay for some or all of the necessary technology investment, preserving valuable cash.

We have entered a perfect storm for investing in these types of energy opportunities. In a market in which uncontrollable costs, such as energy, fuel and raw materials, continue to escalate, technology has once again risen to the occasion, offering a chance to pick up some well-needed ground.

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