

Competition spurs innovative energy management solutions for Illinois manufacturers

How taking advantage of load response programs can be good for the bottom line and the environment

Last quarter's Energy Issues column presented an overview of the new Illinois Power Agency Act which was signed into law in August. A significant component of the Act was the creation of competitive customer classes which will be required to work directly with competitive energy suppliers to meet future electricity needs. This is great news to Illinois manufacturers seeking to achieve both short and long-term economic and environmental objectives in a rapidly changing and volatile energy marketplace. No longer anchored to the utilities' regulated electricity prices, the state's manufacturers can now take full advantage of the wide range of products and services that competitive energy suppliers are positioned to deliver.

In addition to creating competitive customer classes, the Act also commits Illinois utilities, ComEd and Ameren, to overseeing the design, development and filing of a demand response plan with the Illinois Commerce Commission and to begin implementing a cost-effective demand response program in 2009. Introducing a comprehensive demand response program to the region will help reduce stress on the electricity grid and the need for additional generation sources, while also preventing blackouts during times of peak demand. So, how does demand response work and what are the benefits to an individual manufacturer for voluntarily enrolling load in the program?

In essence, demand response creates a "virtual" peaking plant which can be called upon to deliver load to the grid to meet demand during peak periods. In this way, the ISO (independent system operator) har-

nesses the energy conservation efforts of its customer base rather than bringing older gas, oil or coal plants on-line to meet demand. At the individual facility level, these conservation efforts often reflect dimming lights and raising the set point on thermostats, or changing production schedules in some cases.

In the PJM power pool (MISO is offering a somewhat different program), commercial and industrial customers including manufacturing facilities, which demonstrate an ability and commitment to curtailing at least 100 kilowatts of electricity, can sign up to participate in an ISO-directed

demand response program through a competitive energy supplier such as Constellation NewEnergy. For smaller manufacturers or facilities that cannot solely meet the 100 kilowatt minimum requirement, it is possible to aggregate load reductions across multiple locations. There is an annual deadline for enrolling load into the program and the minimum commitment is for one year. Getting started requires that a facility be equipped with an interval meter capable of reading consumption in hourly increments and communicating with the ISO or responsible utility.

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"There is an annual deadline for enrolling load into the demand response program and the minimum commitment is for one year. Getting started takes five easy steps."

5 easy steps to enrolling in the NewResponse program

- 1 | Contact your business development manager at Constellation NewEnergy (CNE). If you aren't a CNE customer yet, please call 866.237.POWER or email loadresponse@constellation.com.
- 2 | A CNE energy expert may evaluate your organization's curtailment capabilities to determine opportunities and optimal strategies. This may include analysis of usage and an on-site evaluation.
- 3 | CNE will then calculate the appropriate curtailment commitment to be performed during an event that maximizes program benefits while minimizing any risks to your organization.
- 4 | CNE will enroll your committed load reduction in the Regional Load Response Program sponsored by your Independent System Operator (ISO) or utility.
- 5 | Where appropriate, CNE will work with you to install meters, enhance your energy management capabilities and complement your building automation system through installation of software and/or hardware to allow your organization to analyze usage, curtailment potential, and energy prices in real time via the Internet.

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ILLINOIS ENERGY UPDATE: Illinois lawmakers and regulators place their trust in competitive electric markets.

The recent announcement by the Illinois Commerce Commission (ICC) that it was declaring ComEd's 100kW–400kW business customer class competitive confirms the fact that lawmakers and regulators believe a competitive electric marketplace is the best structure to serve the needs of Illinois' business customers. Pursuant to the ICC Order, all of ComEd's approximately 18,000 medium-sized non-residential customers were declared competitive as of November 11, 2007. These customers may continue to take ComEd's fixed price service through May 2010. Examples of customers in this group include small machine shops, fast food restaurants and small grocery stores. More than 50 percent of these medium-sized customers already have chosen alternative energy supply from one of 19 different suppliers. By law, all customers with peak demand from 100 to 400 kilowatts (kW) may be declared competitive once a minimum of 33 percent of this customer group is taking service from at least three competitive suppliers.

All of ComEd's large commercial customers with a peak demand of 400kW or greater were declared competitive in August with the passage of a settlement between Illinois utilities and lawmakers. More than 85 percent of ComEd's customers in this group already are choosing alternative suppliers. Examples of customers in this group include manufacturers, big box stores, large grocery stores, hospitals, and colleges. Ameren's large commercial customers with peak demand of 1MW or greater have also been declared competitive. ComEd customers over 400kW and Ameren customers over 1MW still on a fixed utility electric supply rate can stay on a fixed price service until May 2008, at which time they will need to switch to a competitive electric supplier or receive an hourly-priced default rate from ComEd or Ameren. Ameren customers with peak demand from 400kW to 1MW still on a fixed utility supply can stay on Ameren's fixed supply rate through May 2010.

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For manufacturers seeking a real-time return on investment, enrolling in a demand response program is a smart business decision. The pay-back for participating can be measured in immediate savings. In exchange for enrolling load into the program, a participating manufacturer can begin earning compensation in the form of recurring monthly capacity payments simply for committing capacity to the program. In addition, participants receive an energy payment for their participation during an actual ISO-initiated event. This payment reflects either the going market price or a minimum price per megawatt-hour of the electricity curtailed during the event.

Although a common response to the PJM ISO's directive to curtail energy load is to fire up the back-up generators, there are increasingly more sophisticated and environmentally sound ways to limit energy consumption during peak times, as well as all year, which go well beyond dimming lights and adjusting temperature. This is where the new requirement to work with a competitive energy supplier has the potential to significantly alter the energy landscape. In fact, Illinois manufacturers, in partnership with a competitive energy supplier, can use the demand response paradigm to evaluate and measure electricity usage

and load throughout the entire production process. This information can be used to develop a comprehensive energy management program that is responsive to price signals throughout the year. In this respect, the initial commitment to enroll load in the region's demand response program represents only the first step on a path to participating more fully in the restructured energy market.

Most manufacturing facilities already have an automated management system in place to manage lighting, heating, ventilation and air conditioning throughout a facility from one platform. Working with a competitive energy supplier, load response metering and real-time market pricing can be integrated onto this existing platform. This added information can be used by an energy team to better shape and control usage patterns so as to take full advantage of the opportunities that exist in today's energy marketplace. These include:

- 1) Shaping load via control system upgrades and retrofitting.
- 2) Reducing load via efficiency and optimal consumption strategies.
- 3) Smoothing bandwidth via optimizing control strategies. (See "typical load curve" chart below.)

Fully integrated facilities are more intelligent facilities capable of doing much more than responding to mandatory curtailment demands. Leveraging demand response to

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Capacity Savings: Typical Load Curve

NewResponse Partner Program Mission Affect Load Shape in 3 Ways:



ENERGY BUDGET MANAGEMENT CASE STUDY: Philippi-Hagenbuch, Inc.

If there is one thing small manufacturing owners have in common, it's that they like to have control of their assets. After all, it's their money paying the invoices and their name over the front door.

LeRoy Hagenbuch is no exception. Hagenbuch is the co-founder and President of Philippi-Hagenbuch, Inc. Headquartered in Peoria, Illinois, Philippi-Hagenbuch is a premier supplier of off-highway haulage systems for mining, quarry, construction, waste, and power plant customers.

Hagenbuch is a hands-on manager, who is involved in everything from overseeing the procurement and inventory management of the raw materials — like high-strength, tempered, carbon steel plate — to the obtaining of more than 50 U.S. patents with corresponding foreign patents. So when he realized that Ameren CILCO's bundled rate structure and prices were going to change last year, he decided to take action. "We looked at the debacle brewing in Springfield and realized we had to do something about our electricity supply," said Hagenbuch, referring to the highly politicized rate relief debate that occurred as Ameren's 10 year rate freeze was ending. "We saw the freight train running straight for the canyon with no bridge in sight."

Hagenbuch admits that when he started shopping for an alternate electric supplier he was starting from the beginning, "We started looking around in June but because we were with the Utility for so long, we had no idea how to go about making an educated decision." Hagenbuch went to an IMA/Constellation NewEnergy PowerSeries seminar in Springfield and sent others on his team to one in Peoria; their goals were to get a better understanding of the facts surrounding Illinois' electric market restructuring and identify employable strategies for managing the company's energy budget.

After the seminars, Hagenbuch sat down with Rick Blankenship, a Constellation NewEnergy Business Development Manager, and they agreed on a fixed-price contract with



Left: LeRoy Hagenbuch, co-founder and President of Philippi-Hagenbuch, Inc.

Above: Philippi-Hagenbuch, Inc. HIVOL® Scrap Steel Rear Eject Body on a Komatsu® truck



a three-year term. "The fact that Constellation NewEnergy had been partnering with the IMA for so many years showed me that they were no flash-in-the-pan," said Hagenbuch, "and to me the IMA endorsement of Constellation NewEnergy meant a lot." "We did look at one or two other suppliers," he admitted, "but we felt the most secure working with Rick and an endorsed Fortune 125 market leader like Constellation NewEnergy."

Energy rate certainty was a top concern for Hagenbuch when he locked in the three-year rate for the 38 year old company. "With my rate secured for three years," he said, "the politicians and power companies can do whatever they want and it won't bother me." When it came to savings, Constellation NewEnergy is currently saving Philippi Hagenbuch approximately \$2,000 per year versus Ameren's Basic Generation Service (BGS). "It may not sound like a lot, but if you assume just a five percent return on the \$2,000, we would have to sell an extra \$40,000 worth of product", claims Hagenbuch.

The 60,000 square foot Philippi - Hagenbuch manufacturing facility processes approximately 250 tons of steel per month and has a fairly even electricity demand. The company usually runs single ten or eleven hour shifts, with occasional Saturday shifts. Most of the electricity is used

by the 18 dual MIG semi-automatic welders, the two electric arc plasma cutters, and the 250 ton and 750 ton brake presses (a new 2,000 ton brake press is set to be online soon).

Philippi-Hagenbuch has been an active IMA member for over 30 years and Hagenbuch says his company continues to receive ongoing value from the proactive association, especially from the IMA's Small Manufacturers' Action Council. Hagenbuch says the group meets five times a year and focuses topics and speakers on issues of importance to the smaller manufacturer. "The Small Manufacturers' Action Council gives the small manufacturer a voice alongside the larger firms," says Hagenbuch. Topics range from labor issues to healthcare and regulatory and legislative concerns. "Many small manufacturers have no idea what's going on in the electric market or how to make an educated energy buying decision," he says, "the IMA is the perfect place to find out what's important so you can make a decision and get back to running your plant."

If you would like to compare your electric supply options go to www.newenergy.com/control to receive a free, no obligation rate quote. Or contact Denise Haggerty at 312-704-8525 or denise.haggerty@constellation.com. ■


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bring the energy supply side of the equation into focus provides up-to-the-minute views of energy usage as well as costs. In turn, this knowledge positions facility managers and energy teams to react to changes in the energy marketplace at any time by shedding load and adjusting consumption to maximize economic efficiency. As a result, manufacturers are able to shift electricity consumption from periods of high prices to periods of low prices and reduce overall energy costs in the process.

For facilities seeking to introduce automation systems into an existing facility, participating in a demand response program represents a significant return on the necessary up front investments. Making the strategic decision to direct the payments earned from participating in an ISO-directed demand response program into additional energy efficiency and energy conservation efforts contributes to decreasing overall energy use. Finally, load response solutions are particularly attractive to businesses that have already invested in intelligent building designs, and wish to leverage the full spectrum of the energy chain to maximize these energy investment decisions.

In today's competitive business environment, a successful manufacturing process relies, in part, on procuring goods at the optimum price and time. Manufacturers know first hand the importance of carefully managing all aspects of the supply chain. While this is possible with many raw materials, the volatile nature of today's energy marketplace presents its own unique challenges. Demand response, coupled with other energy efficiency programs, has proven to be an effective way to leverage a company's energy investments for maximum benefit. Participating in an ISO sponsored



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Can NewResponseSM Work for Your Business?

evaluation checklist	yes	no
1 My business is concerned with the financial impact of capacity markets.	<input type="checkbox"/>	<input type="checkbox"/>
2 My business requires a significant amount of electricity to produce its products or services.	<input type="checkbox"/>	<input type="checkbox"/>
3 My business can reduce consumption during grid emergencies.	<input type="checkbox"/>	<input type="checkbox"/>
4 My business can curtail some electric load without impact.	<input type="checkbox"/>	<input type="checkbox"/>
5 My business has backup generation to respond to reliability events.	<input type="checkbox"/>	<input type="checkbox"/>
6 My business has hourly interval meters installed.	<input type="checkbox"/>	<input type="checkbox"/>
7 My business has the capability to operate its facilities in real time.	<input type="checkbox"/>	<input type="checkbox"/>
8 My business has a total electric peak demand of at least 1 MW.	<input type="checkbox"/>	<input type="checkbox"/>

If you answered "Yes" to 5 out of the 8 statements, it would be worthwhile to explore your business' Load Response options. For more details on these and other NewResponse products, please call 866-237-POWER to speak with a Constellation NewEnergy Business Development Manager, send an email to loadresponse@constellation.com or visit our website at newenergy.com.



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50% RECYCLED, 25% POST CONSUMER WASTE 

Constellation NewEnergy, a competitive energy supplier serving the Illinois manufacturing industry, can work with you to enroll load in the coming demand response program. To evaluate if demand response is right for your business, answer the questions above.

demand response program is one means of turning energy use into a profitable commodity. Equally important, demand response can be a vehicle through which to reduce future energy use which is good for the bottom line and the environment.

The timing couldn't be better for Illinois to restructure the energy market. Introducing both a demand

response program and new competitive customer classes will create a wide range of opportunities for manufacturers seeking to achieve both economic and environmental benefits. Manufacturers who successfully leverage this new energy paradigm to work in partnership with a competitive energy supplier have the potential to reap meaningful savings. ■

Reprinted with permission from:

The Illinois Manufacturer

Winter, 2008 issue



The Illinois Manufacturer is the official publication of the Illinois Manufacturers' Association (IMA)
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