



CASE STUDY

The Charles Machine Works, Inc. Demonstrates Energy Demand Reduction Using Automated Energy

Managing demand is a big issue for electric power providers since at any time power generation and transmission resources are limited. Utilities are getting creative with programs to get and keep energy demand under control. Many of these programs center on reducing demand at utilities' largest individual customers: industrial manufacturing operations. A case in point involves the Oklahoma Municipal Power Authority (OMPA), based in Edmond, Oklahoma. OMPA generates its power from a variety of resources including wind, hydro, natural gas and coal, and delivers it to consumers through agreements with local municipalities. As of the end of 2011, the Agency served 39 Oklahoma cities and towns.

OMPA'S DEMAND ENERGY EFFICIENCY PROGRAM (DEEP) ASSISTS CUSTOMERS IN REDUCING ELECTRICITY SERVICE ENERGY DEMANDS AND COSTS.

To help verify the program's effectiveness, OMPA contracted with Automated Energy Inc.

OMPA's energy conservation program is called the Demand Energy Efficiency Program (DEEP), which is intended to assist qualified customers in member cities to reduce their electric service energy demands and costs by providing financial assistance to customers who take specific steps to reduce consumption. OMPA intends for the reduction in demand to help keep energy rates as low as possible and delay the need to add additional power generation capacity to the system. DEEP provides matching funds to customers who implement energy-saving measures, such as replacing motors with more energy-efficient ones, inefficient lighting with new fluorescent or LED technology lights, making improvements in cooling and heating sources used, and replacing old food service equipment with equipment that uses less energy. The DEEP program is facilitated with the support and cooperation of local municipalities.

To support the verification of the program's energy conservation effectiveness, OMPA has contracted with Automated Energy Inc. to install its Commercial Load Profiler, a web-based service that continuously monitors energy consumption. "Many cities' meters don't record time, they just record power used at a point in time, but they can't tell when the power was used," said Tom Willis, Energy Services Engineer of OMPA, "but the Automated Energy system gives them a graphic way to look at consumption. You can see visually when various systems are turned off or on. In the city if there was a power disruption, the utility can determine graphically exactly when that occurred."



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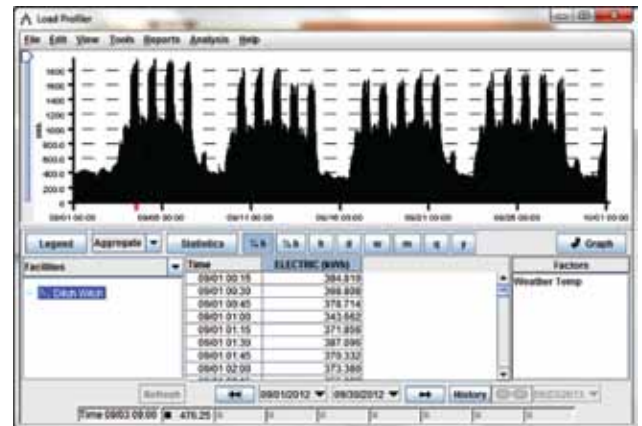
Tom Willis,
Energy Services Engineer,
Oklahoma Municipal
Power Authority



Construction equipment manufacturer The Charles Machine Works, Inc. (CMW), makers of Ditch Witch brand products, consumes over 17 million kWhrs per year

One of OMPA's member cities is Perry, Oklahoma. The largest electricity consumer in Perry is CMW, the company that manufactures Ditch Witch brand trenching and underground construction equipment, and a consumer of over 17 million kilowatt hours of electricity per year. The 23-acre manufacturing, R&D and training campus uses electrical power for welders, dryers, plasma cutters, air compressors, and metal forming equipment, in addition to lighting. OMPA worked through the local Perry municipal power company to offer rebates to the company.

Until the installation of Automated Energy's Load Profiler system, CMW had only a single electric bill line item to reference each month regarding the energy they consumed. They had no way of measuring their instantaneous demand. Hence, they had no means to accurately assess the impact of conservation measures on a daily basis. And it's the instantaneous demand that utilities are most concerned about, since that's what must be met by a utility's power supply infrastructure.



The Load Profiler software from Automated Energy allows CMW to monitor and review trending of their energy consumption, with data updated every 15 minutes.

Reporting helps solve power problems

One of the key features of the Automated Energy equipment is that as it gathers the data it can send the consumption information back to Automated Energy, which can provide reports on outages or other events, and can automatically send a notification to the utility or to the end customer when an anomaly occurs. This can be a benefit to cities or customers' corporate offices which may be located miles away. Because the Automated Energy supplied demand information is web-based, utilities and customers' own staffs can also monitor it remotely in real-time.

"We were able to drop our electricity usage and bring down demand by changing our lights in the plant," said Tony Guinn, CMW Plant Engineer. "We had high pressure sodium and metal halide lamps and old T12 fluorescent fixtures. We went with new Orion T8 fluorescent fixtures throughout that consume approximately 50% less energy overall, and we put some of the lights on motion sensors that will turn them off in parts of the plant that aren't operating." The manufacturer also went from a conventional heating and air conditioning system to ground source heat pumps in their R&D facility. "So far, the changes we've made have allowed us to reduce our peak electrical demand charges by over 12% from 2011 levels," said Tony Guinn. "And this cost reduction happened as our production levels increased."

OMPA wants to get the word out that the CMW experience can be had by other Oklahoma businesses if they will start monitoring their demand more closely and make changes in consumption patterns. "We want to show Oklahoma cities how they can help their customers reduce electrical demand, and by doing that enable them to grow their facilities without needing to grow their consumption," said Tom Willis of OMPA. "Cities are looking at this as a long term way to help their customers. The city also wins because the bill that we charge the cities is in part based on peak demand."

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