



Load Profiler Enables Gainesville Regional To Help Customers Reduce Costs

In the past, electric utilities and electricity consumers may have viewed each other as adversaries. But in today's economy, utilities and energy consumers have a vested interest in collaborating to achieve their individual goals. The managers at Gainesville Regional Utilities (GRU), serving the Gainesville Florida area, are working with business customers to provide them the data that will help them manage their consumption, saving money for consumers, while at the same time helping the utility deploy its finite generation, transmission and distribution resources most efficiently to serve the largest number of consumers with as little interruption to their daily operations as possible.

GRU OFFERS BUSINESS CUSTOMERS TWO OPTIONS

Variable time-of-use rates vs. Traditional flat rates

The key to making the necessary changes in order to hold down costs, reduce consumption, and to ultimately best-use our power resources is to understand current consumption as completely as possible. In the short term, one technique available to utilities for managing supply is to use variable rate structures. While such structures dictate that higher energy costs will be applied part of the time, they also provide the opportunity for savvy consumers to reduce their energy use during peak periods and possibly shift some of their consumption from peak to off-peak hours. GRU offers business customers the option of choosing variable time-of-use rates or traditional flat rates that stay the same, regardless of the time of day.

With all the various options that are available to building energy managers, it's critical that they have the information to enable them to make intelligent choices. Here's where utilities and consumers can work together. In GRU's case, the utility has contracted with Automated Energy of Oklahoma City to make available to its commercial users their 15 minute interval consumption data updated daily. Having a daily view of their consumption enables consumers to see how changes in their usage patterns can affect their electrical costs. "Customers crave predictability," said Dan Clark, GRU's Senior Account Representative. "Using Automated Energy's Load Profiler software to make life more predictable offers huge value to our customers."

With the information provided by the Load Profiler service, different customers have the data to make individual decisions depending on their usage. For example, one big box store in GRU's territory used the consumption data to justify the decision to switch to time-of-use billing. By consulting

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Charlie Balanis,
Alachua County Facilities Engineer



the usage graphs (see Figure 1), they were able to see that power usage was already round-the-clock, and they consumed enough power for lighting during nights and weekends that they could save overall by taking advantage of the lower off-peak rates.

Other Gainesville area power users are making changes to their facilities to reduce energy consumption and use the data from the Load Profiler to quantify their savings. For example, the Alachua County government is responsible for a multitude of buildings of varying ages, and the county managers are continually evaluating options for upgrading old facilities versus building new ones. These decisions are often driven by economics. Such is the case with a new chiller plant that replaces 78 distributed rooftop air conditioning units on the county's 298,000 sq. ft. jail facility (see Figure 2) with a centralized system that promises to be more energy efficient. "Load Profiler is a useful tool that's helping us understand if the new plant is meeting its expectations," said Charlie Balanis, Alachua County Facilities Engineer. "We are using a lot less power overall than before the chiller plant was installed, but we're able to use the Load Profiler data to understand whether the new system is as efficient as it can be." See Figure 3a below.

As the chart in Figure 3b shows, the service that feeds the chiller plant consumed less power in July, as was expected, but consumption increased again for a period in August, which alerted personnel to a potential issue. "We think that the increase is due to testing the chillers under full load," said Balanis. "After testing, there was a dropoff, but the result still isn't better than July. So we're digging into the Load Profiler data to help us pinpoint the problem."

"We were able to do monitoring in the past, by tediously building our own spreadsheets as reports," continued Charlie Balanis, "but Load Profiler is easier to use. It saves a lot of time and hassle."

Alachua County has many other buildings on the Load Profiler service, including the County Administration Building, Fairgrounds, Annex, Courthouse, Community Support Center, Fire Rescue Headquarters, Sheriff's Dept., and its IT Building. The county is making energy-saving upgrades to many of them, too. "We put in an energy conservation measure in the administration building, which was the installation of load control via relays on a time schedule, turning off base loads and lighting and equipment," said Balanis. "With Load Profiler we could see the impact of these measures, and with our older systems, when Load Profiler shows us an anomaly, we send over a mechanic to investigate."

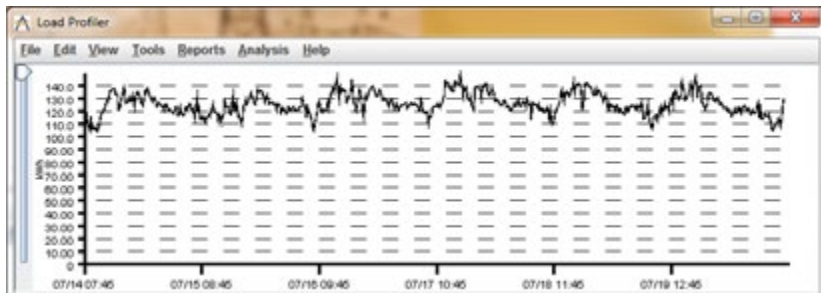


Figure 1. Big box store usage graphs showing consumption around the clock



Figure 2. The Alachua County jail has a new chiller plant that is saving electricity compared to when the building was cooled by 78 rooftop air conditioning units.

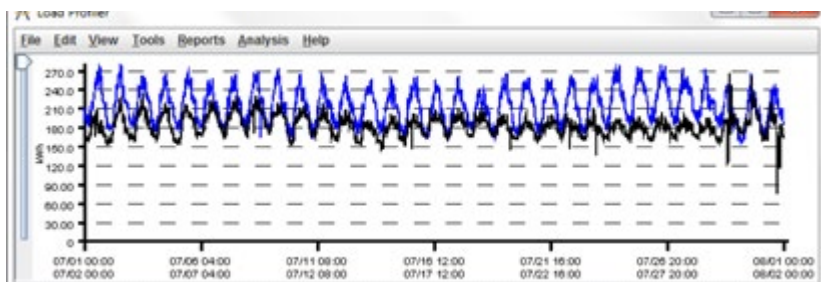


Figure 3a. Alachua jail usage graph shows 2012 data (in blue) over 2013 data (in black) highlighting actual energy savings that the new chiller plant is generating this year as compared to same time last year before the plant was installed.

“Anytime you change rates you can change the economics for individual users,” said GRU’s Dan Clark. “It’s better that the customer knows what their costs will be before the rates change than after rates change when there’s no time to react.” Since rates can change frequently, it’s important for consumers to continually monitor their consumption and re-evaluate past decisions on how to price their service. “Because of available data, I was able to identify one of our customers that was on time-of-use rates and who saved money before, but will not save money under the new rates that will take effect soon,” said Clark. “In this case, the fuel adjustment is going up and the base demand rate is going down. I was able to advise the customer of that ahead of the rate change, avoiding a costly surprise. I like being able to grant that type of service.”

Load Profiler does more than simply report on electric consumption over time. The data can be adjusted for outside temperature in order to make year-to-year comparisons possible, and the software contains an algorithm that can predict a particular consumer’s future electrical use based on past use.

Continuous measurement is also important to the utility for planning its own resource allocations. For example, GRU is the first utility in the country to institute a solar feed-in tariff, and it is getting ready to put its solar generating meters on Load Profiler. GRU buys electricity at a certain rate from solar farms and system operators and will use Load Profiler’s analysis and predictive capability to help them make supply decisions. “We can get the data out of our meters already, but Load Profiler provides a way to display and analyze the data much more easily,” said Clark.

By making available the Load Profiler data to its customers, GRU gives action to its commitment to providing excellent customer service. “Without Load Profiler we couldn’t track the customer’s individual economics,” said Clark. “The sweet spot where the benefits of the Load Profiler service are most tangible is with our medium-sized customers whose facilities are too small to justify the installation of their own building automation system, but large enough whereby electrical consumption is a major operational cost item.” The tool is a key resource enabling the utility’s key accounts reps to be customer advocates.

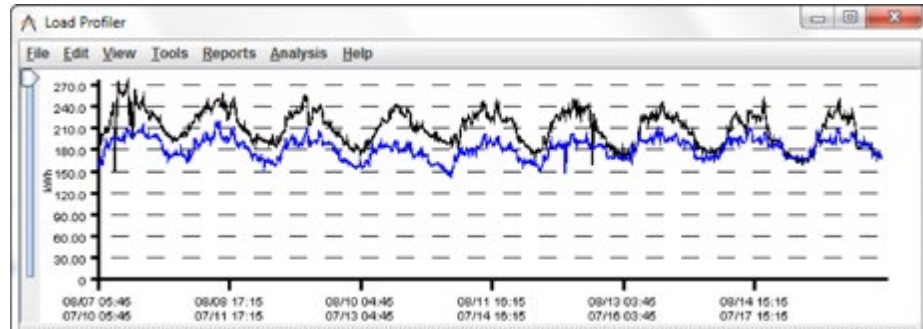


Figure 3b. The Alachua jail usage graph produced by the Load Profiler software highlights the anomaly between July (blue) and August (black), which indicates a problem needing investigation.



Figure 4. Charlie Jackson, Director of Facilities for Alachua County (standing), discusses Alachua County’s energy use with Lee Pinkoson, Alachua County Commissioner (at right), and Charlie Balanis, Alachua County Energy Management Specialist (seated).

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