



Business Minutes

Transcript of Website Audio

1. Why should business owners care about their utility bills and/or energy fixed costs?

In most companies, energy represents a top five operating expense and in Connecticut, we have some of the highest energy costs in the country, making the it even more painful. Compared to other large expenses like payroll, insurance or rent, curtailing energy costs are particularly challenging given the opaque nature of commercial utility bills and a lack of visibility into how a company's operations are integrated with their energy expenditures. Luckily, energy analytics technology has advanced to where companies can gain the visibility they have been missing to monitor and analyze usage and draw meaningful insights on how to operate more efficiently.

2. What are energy analytics and how can learning more about them help a business owner?

Energy analytics software provides insight into what is going on behind the meter at a facility. They typically drive value in three buckets. Number one is energy cost transparency and optimization; so, based on a company's energy usage profile, what are the most painful utility tariffs for their given operation and are they enrolled into the most favorable distribution and supply rates. Number two is Operational Improvements, so simple things like moving a non-critical process to less-expensive, off-peak hours, to more complex decisions like shifting production to another location when energy costs of goods sold reach a certain threshold. Number three is identifying investment opportunities, which can be done by sub-metering on-site equipment to identify performance anomalies, catching and replacing faulty equipment before production is interrupted, and identifying and prioritizing different energy investments to maximize energy savings and return on investment.

3. Are there other ways a company can lower costs other than using less energy?

Absolutely, and this gets to the crux of what makes managing energy so difficult. Here's an example. Blindly setting back thermostats and turning off lights when a building is unoccupied is a prudent general practice, but sometimes this strategy actually uses more energy than running certain equipment strategically during the weekend. For instance, depending upon the current weather and grid conditions, it often makes more sense to break the unoccupied, energy efficient HVAC schedule over the weekend and pre-cool the building rather than starting everything up on Monday morning. If the building is sitting idle all weekend in hot weather, it collects excess heat that is difficult to dispel. When the HVAC systems come on line Monday morning, they have to work harder to cool the building during times the company is charged more expensive, peak utility rates. There are many unintuitive situations like this, where analytics can help a building make more intelligent and informed decisions.

4. How can energy suppliers and customers help each other?

Using an energy analytics system can help energy suppliers gain a better understanding of how and when their customers use energy and help them to identify good candidates for the various energy conservation programs that they offer. Further, by helping their business customers improve the sustainability and volatility of their usage, energy suppliers are effectively reducing their capacity and demand risk and can offer these customers more favorable rates as a result, so it's a win-win for both businesses and energy suppliers.

5. How can analytics help with sustainability?

A common misconception is that using less energy is the only way to become more sustainable. Certainly, curtailing usage and making investments in energy efficient equipment is critical, but time of use is also a major factor. For instance, some energy analytics platforms provide companies with real-time visibility into the specific fuel sources being burned at the grid. During periods of high grid demand, less efficient power generators are fired up to satisfy demand. By understanding the "dirtiness" of the fuels being used at a given time, a company can curtail their usage during these periods, thus reducing the carbon emissions they are responsible for. Further, reporting on the specific fuels that were burned provides a much more accurate assessment of a company's true carbon footprint, leading to a higher level of transparency for their corporate or regulatory sustainability requirements.

6. How can business owners use sustainability as part of a marketing strategy?

Luckily, the perception that pursuing sustainability is at the cost of profitability is dying. For instance, take an LED lighting retrofit or mechanical system upgrade. Commonly these projects have a return on investment in two years or less. This means that a company will make 50% per year on their investment. The long-term average annual average of the S&P 500 is about 10%, which is 5x worse, excluding the utility incentives that exist which make ROIs even more attractive. Further, according to a recent Nielsen study, 66% of global respondents reported a willingness to pay more for sustainably made products and services, which is up from 55% and 50% for the previous two years. This percentage is even higher for the coveted millennial demographic that companies are competing over. So not only does sustainability make sense from a business investment point of view, but it's what consumers want.

7. How can employees become more engaged in sustainability?

Nielsen did a Sustainability study recently and 66% of global respondents reported a willingness to pay more for sustainably made products and services, which is up from 55% and 50% for the previous two years. This percentage is even higher for the coveted millennial demographic, where 75% are willing to pay more. Further, millennials now occupy more jobs in the workforce than any other generation. The bottom line is that increasingly, US citizens that work at our companies and consume our products and services really care about sustainability, and businesses need to take this seriously. One way to engage employees effectively is the creation of inter-office sustainability competitions where different departments or buildings are engaged to partake in sustainable practices for a period where financial or non-financial rewards are given to the winning team. Aside from reduced energy costs, this type of engagement helps create a more cohesive culture and strengthens inter-office relationships.

8. What is smart manufacturing and what do small manufacturers need to know about it?

Smart manufacturing involves the integration of instrumentation, sensing, monitoring, controls, and process optimization technologies. It merges IoT technologies, analytics and manufacturing processes to manage energy, productivity, and costs in real-time across different product lines, factories, and companies. The key goals are to reduce energy usage and greenhouse gas emissions and minimize costs per-good-unit-produced. The technological advances and ability to integrate different, previously siloed technologies is the driving force behind this trend and it is very important that companies of all sizes get involved to stay competitive and operate as efficiently as possible.

9. How can analytics help business owners' budget better?

First, gaining a better understanding of the seasonality of their energy usage and the different risk profiles of each month of operation. For instance, in Connecticut the summer months tend to be when the power grid ultimately reaches their peak demand for the year. It's not as simple as using less during this period. If your facility is using a lot of energy during the grid's peak hour for the year, you will be assigned a very costly capacity tag. This is basically the grid's way of determining the overall capacity requirements that they need to account for when evaluating their power generation inventory. Second, by using dashboards and alerts to become informed when your building reaches a certain level of cost, usage or demand, a company can take remedial action beforehand and make sure they reach their budgetary goals. When evaluating a utility bill, all avoidable cost opportunities have already passed and you're looking through the rear-view mirror.

10. How does the internet of things intersect with energy management?

We have all seen the massive market projections for IoT, and IoT-enabled software and equipment is becoming ubiquitous. For example, in the past, when building management systems first became connected to on-site systems using wired protocols, it was a transformative innovation that enabled companies to setback thermostats and turn off lighting systems when the building was unoccupied. With today's technology and integration capabilities, systems can consider additional data points and become significantly more intelligent and versatile. For instance, rather than just going to a unoccupied setback schedule, systems can analyze occupancy sensor data autonomously to determine periods throughout the day that portions of the building should be curtailed, or using weather and grid capacity forecasts, a system can identify instances where HVAC equipment should be turned on over the weekend because it will be more cost effective than firing them up on Monday morning during more expensive, peak billing times after the building has been idle and excessively hot from collecting heat all weekend.