

# UTILITY ENERGY DATA MANAGEMENT: 4 STEPS TO REDUCE YOUR CONSUMPTION AND GAIN CONTROL OF YOUR ENERGY SPENDING

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## THE ENERGY MANAGEMENT LANDSCAPE

The energy industry and, more specifically, those employing utility services are in the process of an information and efficiency revolution. For example, the US and Canadian combined gas and electric efficiency program budgets reached \$9.4 billion in 2015, a decrease of 5 percent, down from \$9.9 billion in 2014.<sup>1</sup> Internal and external pressures are placing increased demands on corporate CEOs, real estate owners and energy management executives. The ability to collect and disseminate information, and take advantage of every opportunity to increase energy savings is becoming so critical that it is influencing productivity and profitability.

Companies that understand and set energy objectives, measure and report energy consumption, analyze the data, and modify their existing energy culture quickly benefit from these cost-saving measures, resulting in a substantial competitive advantage.

Energy is costly for businesses. In fact, according to ENERGY STAR®, US businesses spend \$400 billion annually powering commercial building space and industrial facilities.<sup>2</sup> For many commercial operators, utility expenses can be their third-largest budget line item, often trailing labor and materials. The US Department of Energy (DOE) estimates that commercial facilities account for up to 50 percent of electricity use, nearly 30 percent of which is wasted through controllable inefficiencies such as:

- inaccurate data accumulation caused by enlisting too many different third-parties
- office use and behavior of tenants
- difficult data gaps created by multiple types of Business Management Systems (BMS) deployed throughout a portfolio
- lack of a baseline due to incomplete historical data.

The Department of Energy says this 30 percent waste accounts for \$120 billion. Improving efficiency means tens of billions of dollars in potential energy savings for owners and tenants.<sup>3</sup>

Energy management is an ever-changing landscape. In order to manage energy use across electricity, water, gas and waste, companies need to manage a significant amount of data. Managing the consumption, cost, and utility rate tariffs, while consistently sifting through the data to ensure you are within specific ranges strengthens a company's bottom line, improves environmental performance and mitigates risk. With increasing pressure to optimize the performance of multiple facilities and reduce carbon impacts, today's CEOs are committed to obtaining and leveraging data to their benefit.

In order to benefit from this data, a simple yet clear path must be established. However, looking for outliers, and analyzing months' — or years' — worth of data is a difficult task for an in-house team. The following four steps can smooth the process and allow corporations to achieve their energy management goals.



<sup>1</sup> Consortium for Energy Efficiency (2016). Consortium for Energy Efficiency, 2015 State of the Efficiency Program Industry

<sup>2</sup> U.S. Department of Energy Better Buildings program. 19 March 2015

<sup>3</sup> Alta Terra (2011). Facilities Resource Management Solutions: Emerging IT Tools Reshape Building Energy Management

## 4 BASIC STEPS TOWARD REDUCING CONSUMPTION AND MANAGING YOUR ENERGY SPENDING

### 1. UNDERSTAND YOUR ENERGY OBJECTIVES

Executives, Managers and Directors with management responsibility for a portfolio of properties often find themselves walking a fine line with respect to energy efficiency. Unrelenting financial pressure on organizations of all types is reflected in the ongoing pressure to drive down costs across all aspects of the operation, including facility costs. But, the ability to achieve the required savings is often hamstrung by a refusal, or even an inability, to invest the capital required – particularly when it comes to energy management.

Interestingly, the value of improved energy management is not restricted to energy reduction and cost savings. A holistic view shows how it impacts the facilities themselves, and those occupying the facilities. When determining your corporate energy objectives you must understand the impact the decisions have on working conditions, productivity and staff motivation, enhanced external image, cost savings, energy reduction, and improved cost allocations.

The reasons why an organization looks at its energy management strategy are wide-ranging and may differ significantly depending on whether the impetus emanates from the boardroom or elsewhere. The energy market is constantly growing, evolving and changing. Corporate decision-makers are faced with a disparate array of companies offering a choice of technology options, which all effectively offer an identical promise – reduced energy consumption and costs.

The keys to a successful energy strategy are knowledge, context and execution—the corporate objective must be clearly identified. Information must be gathered and placed into the context of the energy objective. Then focus must shift to execution—the ability to measure, report, analyze and understand discrepancies, modify existing corporate culture, and verify the actions taken and the investments. Only then can you ensure those promises are actually fulfilled.

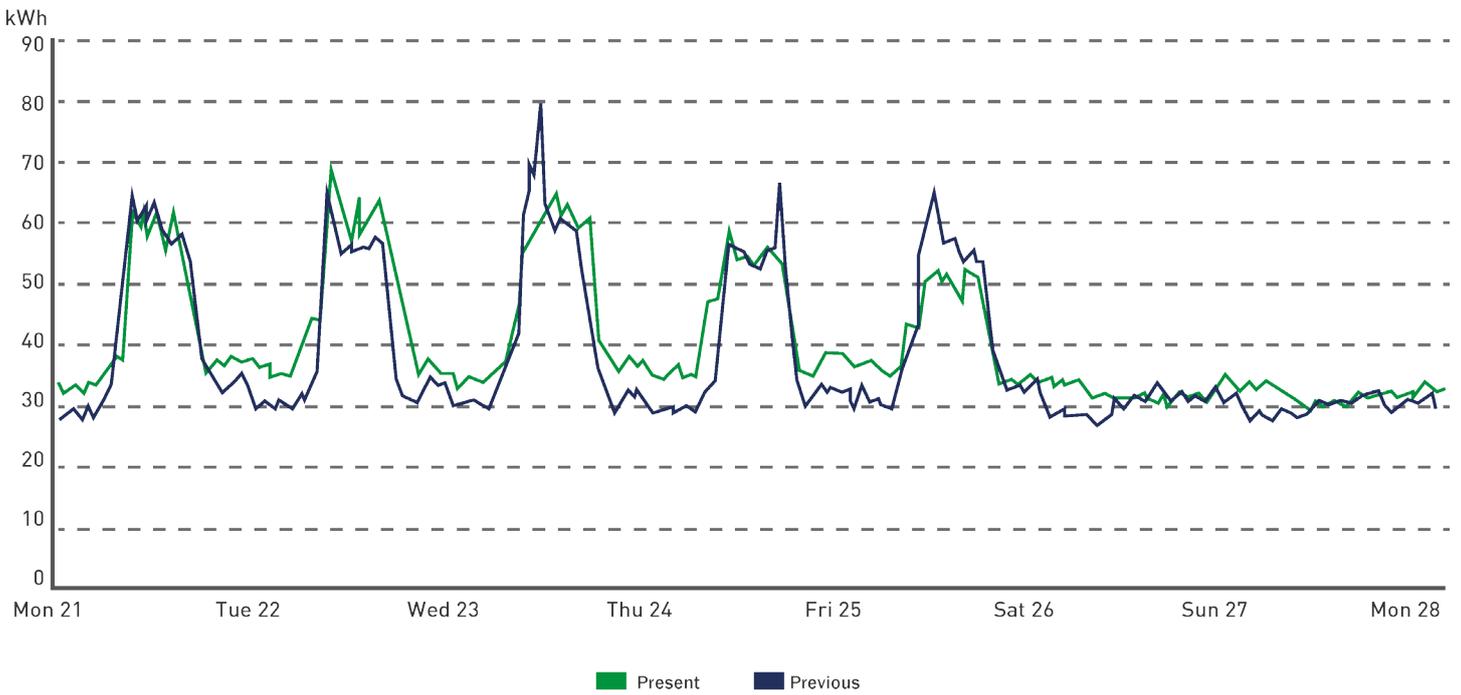
However, before any major investment decision is made or even considered, there are actions every organization can and should implement. These actions will generate the financial and environmental data points that will provide the organization's decision-makers with a solid platform of facts and forecasts on which to base any prospective investment decisions.



## 2. MEASURE AND REPORT ON CONSUMPTION

For large companies with multiple locations, effectively and accurately processing and paying energy invoices, and reporting on that data holds the key to fully understanding the energy footprint of your organization. One cannot hope to capture lost energy-related expenditures, and prioritize improvements and other initiatives without first identifying energy usage across the portfolio. Effective invoice data capture and analysis is unique to each site location and paramount to the success of the business.

It is impossible to understand and effectively manage the energy usage of a portfolio of properties without knowing how you are consuming, what you are consuming, the quantity of your consumption, and the periods when your consumption hits peaks and valleys. The most basic energy management activities are establishing cost and consumption baselines over time. Reporting on these trends is critical in order to accurately evaluate risk and performance.



The above chart identifies the consumption of electricity for one facility over the course of one week. This type of reporting allows the end user to more fully understand consumption peaks and valleys and plan accordingly.

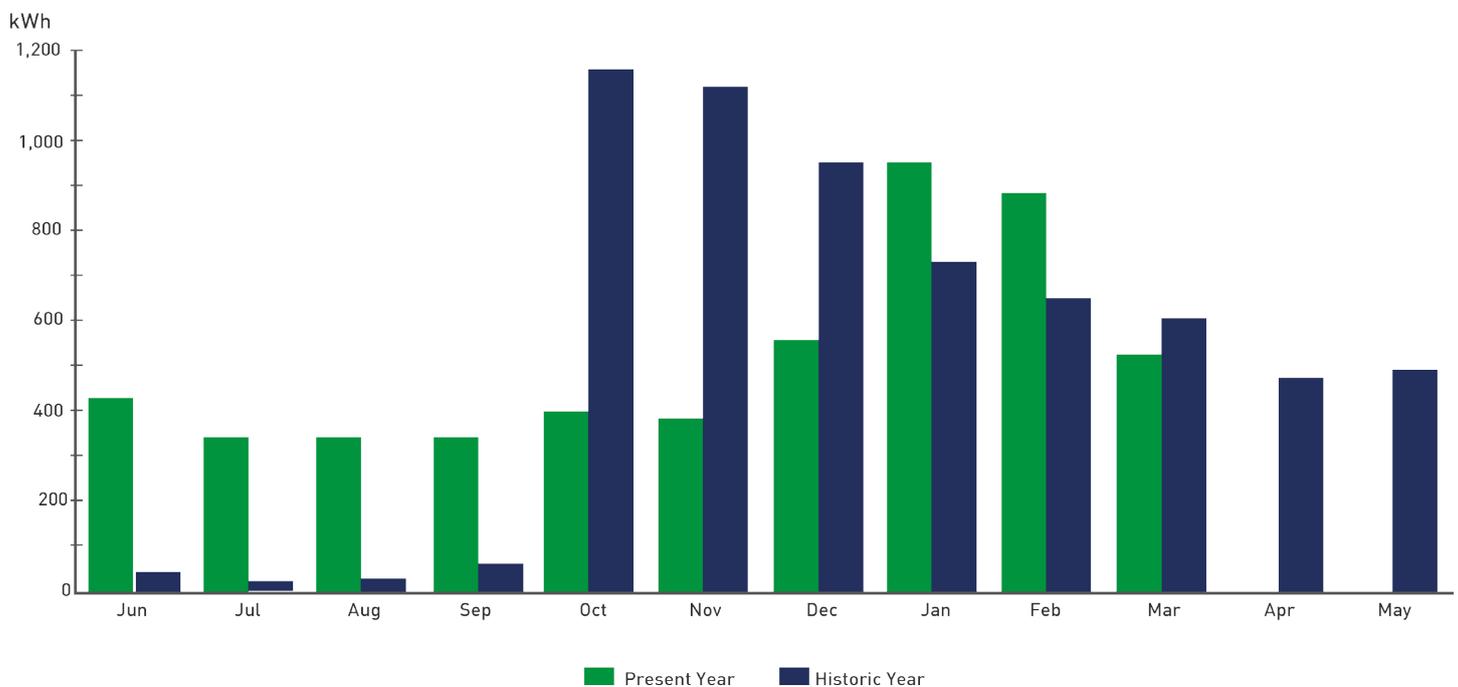
Measurement is necessary to accurately move to the next level and conduct energy analytics. It creates the basis for ongoing recommendations to modify or change operational behavior, and increase investment-based savings. Ongoing measurement and reporting is key to identifying trends and events that may be cause for concern.

### 3. ANALYZE DATA AND UNDERSTAND DISCREPANCIES

Having access to utility data via dashboards, reports, alerts, etc., allows corporations and their energy managers to easily identify outliers, understand discrepancies in usage and cost, and target facilities that are not performing up to expectations. This data also provides companies with valuable energy information relative to competitors. Energy managers begin to customize and fine-tune their views into certain data sets, adding parameters to craft targeted solutions such as productivity and weather normalization, which allows for better energy management decisions.

The key to successful analysis of utility energy data begins with the audit and understanding of a portfolio's consumption via historical records. Two, three and, in many cases, five years of historical data is necessary to get a complete picture of your organization's energy profile. It is, without question, the only manner by which you will identify discrepancies, correct them, and allow for more accurate and cost-effective tracking going forward.

Below is a sample graph comparing monthly energy consumption data across a two-year period. Historic data are keys to this analytical process.



In addition to improved sourcing decisions, analysis of utility invoice data produces other opportunities for optimization. For example, an organization using utility invoice management can calculate carbon dioxide (CO<sub>2</sub>) emissions and then work on a myriad of initiatives to reduce its carbon footprint. These are just a few examples of how organizations that understand their energy expenses ultimately improve their bottom line.

#### 4. MODIFY EXISTING ENERGY MANAGEMENT PROCESSES TO MEET YOUR OBJECTIVES

There are a number of ways in which a corporation modifies its behavior once the analysis of their utility data has been completed. Capital improvement projects, rate tariff modifications and increased sustainability measures are just a few of the more obvious ways in which organizations enhance their corporate energy culture to affect real change.

Prior to any capital improvement projects, however, the process of outsourcing utility invoice and data management leads to a number of efficiencies typically unseen in an organization that tackles this process in-house. These efficiencies can be realized without any additional capital expenditure – representing potential major savings at a relatively minor cost.

Effective outsourcing of utility invoice processing and data management benefits organizations with multiple locations in a number of ways:

- Lower costs
- Reduced paper handling, routing and filing
- Decreased workload with the need to manage only exception invoices
- Centralized invoice processing functions for complex invoices, eliminating disparate processes and multiple systems
- Archived invoice documents electronically for fast retrieval
- Offloaded dispute management and supplier inquiries, allowing a focus on core responsibilities
- Maximized cash flow with invoices paid at the optimal time
- Reduced AP workload through automated, correct cost allocations and accruals sent directly into an ERP system
- Complete visibility into invoice status, payment information and operational metrics online, and by viewing as EDI templates or digitized documents.

Once you are able to analyze the utility data, the direction of capital for energy improvements will become much clearer. In addition, you will be able to more accurately determine when a property is wasting energy. Even the most efficient infrastructure incurs some amount of waste. For example, waste occurs if energy is being used when it isn't actually needed. However, once an organization has reported, measured, and analyzed its energy consumption, it can build an energy strategy that incorporates these foundations, and the element of waste will be reduced significantly.

Going forward, analyzing utility data also facilitates the more accurate measurement of the benefits of any prospective major capital investment in infrastructure, such as lighting retro-fits, HVAC replacements, cool roof installations, window tinting, and chiller and boiler upgrades and replacements. Reducing the overall building energy demand in turn reduces the size of future investments.

Similarly, rate tariffs can be another source of wasted assets. Rate tariff modification is necessary in cases where an organization is charged a rate tariff that doesn't match their facility usage. Customers are divided into classes of service (residential, commercial, industrial, etc.), and classes are then determined by a number of factors, such as demand levels, voltage, applications, etc. Instances do exist where a customer is being charged too high a rate tariff for their usage and voltage. Careful analysis of these tariffs has the potential to save a significant amount of money.

There are a number of increased sustainability measures that can be taken to modify a company's culture, but the first step is benchmarking the current rates. For example, the first step in invoice processing and data management is measuring total electricity consumption. Once the benchmark has been established, the next step is consumption reduction. Typical behavioral changes in the facility to meet this goal include turning off lights and computers, etc. There are many other sustainability measures that can be added to the ones conventionally performed, such as:

- air quality index
- water consumption reduction
- reducing the amount of waste going to landfills
- reduction of emissions.



## CONCLUSION

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With energy management and the handling of utility data in a constant state of change and evolution, knowing your goals and objectives, and having access to massive amounts of data gives you the ability to improve energy performance while at the same time, strengthening your bottom line. Utility data management allows corporations to forecast and mitigate risk across your entire portfolio, a capability that didn't readily exist 10 years ago. As pressure increases to maximize the performance of each facility and reduce the carbon impact across a portfolio, you cannot efficiently commit resources towards this goal without the access and analysis of utility data.

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