

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

Companies gain significant competitive advantages when they review and revamp their existing energy culture.



THE ENERGY MANAGEMENT LANDSCAPE

The energy industry and the utility services industry are in the process of an efficiency revolution. Pressure is mounting as customers, investors, and energy policies emphasize the importance of sustainable practices that combat the negative effects of climate change. Energy costs are rising as both companies and our planet can no longer afford inefficiency. A company's ability to collect and disseminate information and capitalize on energy saving opportunities has become a critical influencer of productivity and profitability. It also notably translates to a reduced carbon footprint.

Energy is costly for businesses. According to the U.S. Energy Information Administration, US businesses spend \$400 billion annually powering commercial building space and industrial facilities. For many commercial operators, utility expenses are the third-largest budget item, trailing labor and material costs. The US Department of Energy (DOE) estimates that commercial facilities account for up to 50% of electricity use, 30% of which is wasted through manageable inefficiencies such as:

- Inaccurate data accumulation caused by enlisting too many third-party services;
- Wasteful office and tenant use;
- Disorganized data gaps created by using multiple Business Management Systems (BMS); and
- Lack of precise energy baselines due to incomplete data.

The DOE says this 30% waste equates to \$120 billion in wasted income. Improving your energy efficiency means tens of billions of dollars in potential energy savings.

Energy management is a constantly changing landscape. To manage energy use across electricity, water, gas, and waste, you need the ability to manage a significant amount of data. Sustainability technology ([Sustainatech](#)) simplifies the daunting

task of managing data by applying technology and software to guide you toward your energy efficiency goals. Sustainatech helps aggregate, analyze, and report these massive amounts of data to leverage a company's success in sustainable practices. Consistently managing the company's consumption, cost, and utility tariff of energy results in an accurate threshold of proficiency which improves energy performance and mitigates risk. With increasing pressure to optimize the performance of commercial facilities and reduce carbon impacts, today's leaders must leverage their data to benefit both the company's bottom line and the environment.

To benefit from this conglomerate of data, a clear path must be established. Analyzing months' or years' worth of data can be a difficult task for an in-house team. Applying Sustainatech's concepts can help ease the process and help you achieve your energy management goals on your [sustainability journey](#).

As you begin your energy sustainability journey, you should take deliberate action across the following 4 steps, which will generate crucial financial and environmental data points to provide you with a strong portfolio of facts and forecasts to facilitate your investment decision process.



4 BASIC STEPS TOWARD REDUCING CONSUMPTION AND MANAGING YOUR ENERGY SPENDING

1. UNDERSTAND YOUR ENERGY OBJECTIVES

Executives, managers, and directors with management responsibility over a portfolio of properties often find themselves walking a fine line between energy efficiency and financial pressures. The ability to achieve required savings may be prevented by an inability or even a refusal to invest in the necessary capital investments required to create these changes – particularly when it comes to energy management.

The value of improved energy management extends beyond energy reduction and cost savings. A holistic view shows it impacts those that occupy the facilities and the facilities themselves. Corporate energy objectives impact working conditions, productivity, and staff motivation, as well as cost savings, energy reduction, and improved cost allocations.

The essential principles of a successful energy strategy are knowledge, context, and execution. Clearly identify your objective by gathering and placing information into the context of the energy objective. Then, shift your focus to execution – measuring, reporting, analyzing, and understanding discrepancies is paramount to modify your existing corporate energy practices. Lastly, verify the execution of your plans to ensure that your promise of energy efficiency is fulfilled.



2. MEASURE AND REPORT ON CONSUMPTION

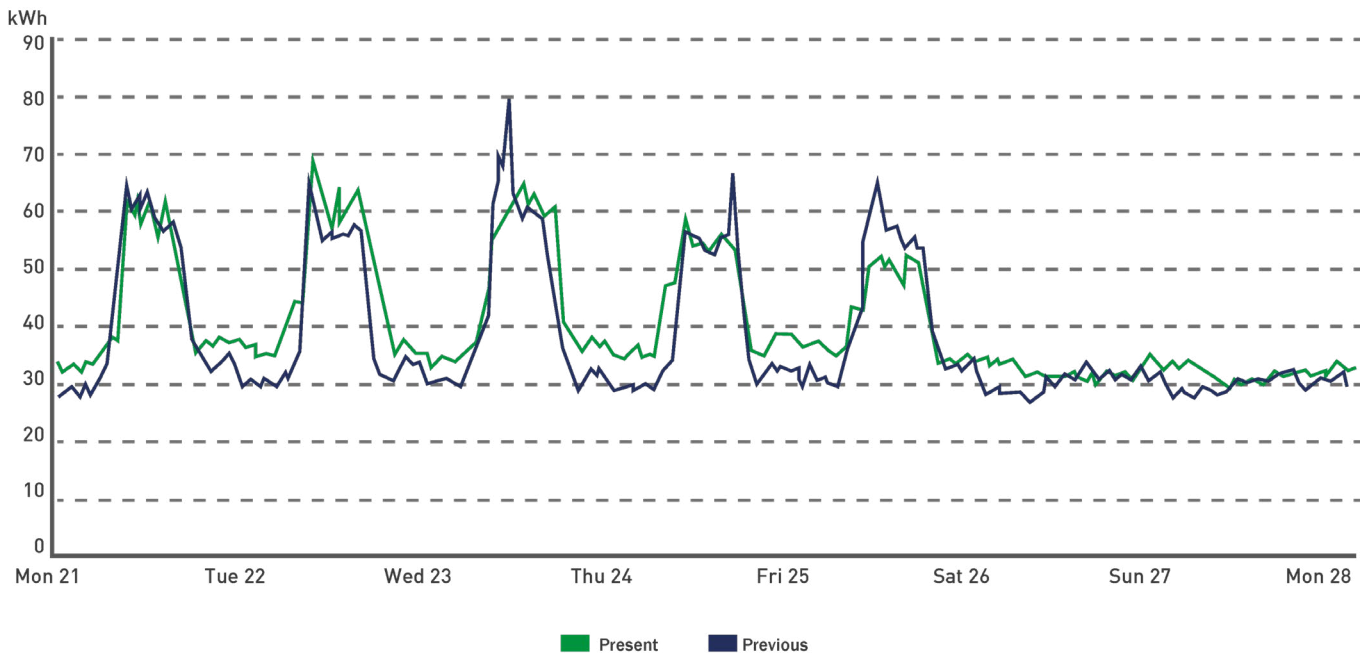
For large companies with multiple locations, the key to fully understanding the energy footprint of your organization lies in accurately processing energy invoices and effectively reporting that data. Determining energy usage across an organization’s portfolio is essential to the energy efficiency process. This information will supplement you in identifying wasted energy-related expenditures that can be fixed with improvements to your entire system. Effective invoice data and analysis is unique to each site location and vital to the success of your business.

Your energy usage portfolio is broken down into the following categories:

- What you are consuming;
- How you are consuming; and
- The quantity you are consuming in relation to the periods of “peaks and valleys” in your energy usage.

The foundation of energy management is established with cost and consumption baselines over a period of time. Reporting these trends is critical to evaluate your risk and performance.

Figure 1: Facility Electricity Consumption



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.

Gathering accurate measurement data is necessary to conduct your energy analysis. It creates the basis for ongoing recommendations to modify operational behavior that increases your investment-based savings. Continuous measuring and reporting are central to identifying trends and/or events that may be cause for concern or triggers for increased consumption.

3. ANALYZE DATA AND UNDERSTAND DISCREPANCIES

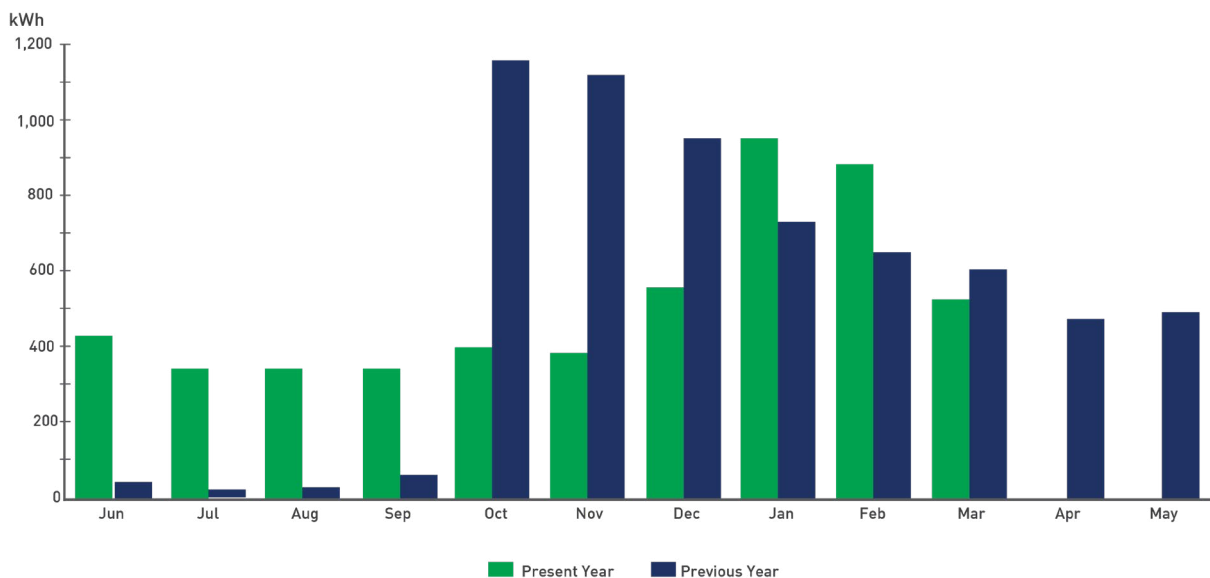
Having access to the operational utility data allows businesses and their energy managers to identify outliers, understand usage discrepancies, understand cost variances, and improve facilities that are not performing up to standard. This data also provides companies with valuable energy information relative to competitors. Energy managers can customize and fine-tune this information into data sets that include custom parameters for targeted measurements such as productivity, weather normalization, and more.

A successful analysis of utility energy data begins with the audit and analysis of a portfolio's energy consumption history. In many cases, two to five years' worth of historical data is required to construct a complete depiction of your organization's energy profile. This is the most important step in helping you identify the discrepancies that need to be corrected and will allow for more cost-effective tracking moving forward.

The principles of Sustainatech make these tasks achievable for your organization. Applying Sustainatech to your operations helps you gather your data to translate it into purposeful information you can track and report on. Technology solutions give you complete control over your data with the ability to access user-friendly dashboards, automate targeted reports, and set custom alerts. Data management systems can pull information from previous utility invoices and historical records to illustrate the entirety of your company's energy usage.

Below is a sample graph that compares monthly energy consumption data across a two-year period. Historical data makes this analytical process possible.

Figure 2: Sample Energy Consumption Data



Similarly, software applications can serve as an invoice outsourcing process that benefits you by reducing paper consumption, providing electronic access to documents, and lowering operating costs. Effectively outsourcing utility invoice processing and data management provides organizations with a variety of benefits:

- Lower costs;
- Reduced paper handling, routing, and filing;
- Centralized invoice processing functions, eliminating busy processes and multiple systems;
- Electronic archive of invoice documents for safe storage and easy retrieval;
- Relinquished dispute management and supplier inquiries;
- Maximized cash flow with optimally timed invoice payments;
- Optimized AP processes through automated systems utilizing an ERP solution; and
- Complete transparency on invoice status, payment information, and operational metrics - all available online through EDI templates and/or electronic documents.

In addition to improved sourcing decisions, utility invoice data analysis can open doors for new opportunities for optimization, including the ability to calculate carbon dioxide (CO₂) emissions and implement new initiatives to reduce your carbon footprint. These are just a few examples of the many benefits afforded an organization that understands their energy expenses.

4. MODIFY EXISTING ENERGY MANAGEMENT PROCESSES TO MEET YOUR OBJECTIVES

Information obtained through utility data analysis supports you in deciding where and how to innovate and improve your energy management systems in order to achieve your goals. For example, this data can help you determine where to invest for energy improvements. It can also inform when exactly your properties are wasting energy—from season to season, week to week, or time of day. Once your organization applies Sustainatech to analyze and mitigate energy consumption, you can build an energy strategy that optimizes your energy usage and minimizes waste.

Analyzing utility data may also uncover new information that can help you craft energy solutions that fit your needs, environment, and budget. For example, major infrastructure investments such as lighting retrofit, HVAC replacement, cool roof installation, and window tinting may be suitable for some businesses—but not others. Instead, you may find that alternative solutions are more viable for your organization, such as simple energy saving methods like shutting off lights during times that they are not needed. Newly gathered, accurate data is the key to determining what strategy is right for you and your energy management goals.

Rate tariffs are another common source of wasted energy assets. Rate tariff modification can be applied in situations where an organization is charged a rate tariff inconsistent with their facility's actual energy usage. Customers are divided into classes of service (residential, commercial, industrial, etc.). These classes are further distinguished by factors such as demand levels, voltage, applications, etc. It is common for corporations to be charged a tariff rate that is higher than the amount of energy they are using. Careful analysis of these tariffs provides the opportunity to save your organization a significant amount of money.

Several sustainability measures can be implemented to modify a company's culture. For example, the first step in invoice processing and data management is measuring total electricity consumption. Once your benchmark has been established, the next step is to reduce consumption. Simple changes include turning off lights and computers during unnecessary "peak" energy consumption times. There are additional measures grounded in Sustainatech that simultaneously reduce costs and conserve resources, such as:

- Air quality index improvement;
- Water consumption reduction;
- Waste reduction; and
- Emission reduction.



CONCLUSION

The ability to analyze your organization's energy data is critical to reducing your energy consumption and lowering your operational costs. Leveraging your data to determine what solutions are the best fit for your organization and its energy goals are a key part of a robust overall sustainability strategy. Sustainatech principles can help your business become more efficient and operationally sustainable.

As the energy industry continues to evolve, setting consumption baselines and having access to all your company's data empowers you to intelligently set and efficiently achieve new goals and objectives. Forecast and mitigate risks across your entire portfolio with a clear scope of your data. Reduce the carbon impact of your facilities and create a sustainable business practice that will reduce your expenditures and maximize your portfolio, while simultaneously adapting to the negative effects of climate change.

ENERGY MANAGEMENT SOLUTIONS

AT THE FOREFRONT OF ENERGY AND ENVIRONMENTAL DATA MANAGEMENT, ADEC ESG SOLUTIONS HELPS YOU APPLY SUSTAINATECH PRINCIPLES TO NAVIGATE THE CURRENT ENERGY LANDSCAPE WHILE PREPARING FOR WHAT LIES AHEAD. WE HELP YOU MANAGE YOUR DATA SO YOU CAN MAKE INFORMED DECISIONS ON WHERE TO INVEST YOUR LIMITED RESOURCES.

ENDNOTES

“About the Commercial Buildings Integration Program.” Energy.gov. Accessed August 6, 2021. <https://www.energy.gov/eere/buildings/about-commercial-buildings-integration-program#:~:text=buildings%20is%20enormous.-,On%20average%2C%2030%25%20of%20the%20energy%20used%20in%20commercial%20buildings,gas%20emissions%2C%20of%20commercial%20buildings.>

“U.S. Energy Information Administration - EIA - Independent Statistics and Analysis.” United States - SEDS - U.S. Energy Information Administration (EIA). Accessed August 6, 2021. [https://www.eia.gov/state/seds/data.php?infile=%2Fstate%2Fseeds%2Fsepsum%2Fhtml%2Frank_ex_sector.html&sid=US.](https://www.eia.gov/state/seds/data.php?infile=%2Fstate%2Fseeds%2Fsepsum%2Fhtml%2Frank_ex_sector.html&sid=US)

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