Energy management 170 kWh

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Many organizations don"t fully understand the benefits and importance of adopting power metering and quality monitoring with an energy management system (EMS). As a result, they often delay implementation due to a perception of high costs and low returns. But an EMS can actually accelerate your ROI. In this blog, I outline the immediate benefits an EMS provides, how it can drive what an organization needs long term, and a few other considerations like timing and software options.

In addition, with the right type of electrical metering, your maintenance and operations teams will have the data to understand why a breaker tripped and if any others are close to tripping. This provides safety benefits as well, because when a breaker trips, the equipment shuts off unexpectedly, posing a hazard.

Not only can an EMS solution help you save money, increase uptime, and protect equipment, but it also provides you with the data you need to make informed decisions in the facility going forward.

For instance, an EMS can help you measure progress on sustainability targets and show you where your conservation focus should be. A facility planning a solar installation might use EMS data to decide if it needs new switchboards or panels, ensuring financial viability. As facilities change and expand, or add EV charging, an EMS can show you where you have room to grow safely with existing distribution equipment. Finally, nothing in an operation is ever static. As you make decisions that affect your energy usage, you will quickly be able to see the impact with real data.

An EMS also offers insights into power quality to drive long-term operational resilience. By continuously monitoring your electrical distribution network, it helps you address power quality issues as early as feasible - before they cost you significant downtime or equipment damage. A renewable natural gas client of ours used their power quality monitoring tools to identify a utility fault that was causing system resets. The utility found a hardware issue with the data and they were able to reduce downtime and protect their equipment.

In greenfield and brownfield projects, metering is pivotal in achieving future energy efficiency, uptime, and sustainability. Metering existing facilities can help you understand what future facilities will use. When customers ask us, "When is the right time to install metering and power quality monitoring at my facility?" the answer is simple.

For those who may think, "I can install this later - my capital for my new facility is tight," I urge you to reconsider. In general, retrofit installations cost 40% more, require downtime, and you"ll be paying for wasted energy that could have been detected by an EMS.

In a well-integrated EMS, hardware feeds data continuously to the software, which then analyzes and displays it in a user-friendly way. This allows you to monitor energy usage and develop strategies to reduce costs and

improve resilience. Additionally, an integrated EMS is a powerful tool for compliance and reporting-particularly for tracking and reporting greenhouse gas emissions in near real-time to demonstrate your commitment to transparency and environmental responsibility.

Effective data analysis in an EMS hinges on the software used to interpret the data collected by the hardware. It should clearly visualize energy usage, showing real-time consumption and historical trends while making it easy to compare different times or areas across a facility. The software must also identify power quality issues, such as voltage sags, harmonics, or imbalances. The best EMS software offers predictive insights, analyzing data trends and patterns to forecast future issues. This allows you to proactively tackle problems, preventing them from becoming more significant.

Clients often ask why they can"t use their existing Building Automation System (BAS) for these needs. While BAS can read data from energy meters, an EMS is designed to integrate with energy monitoring hardware immediately. This integration allows for comprehensive data utilization. An EMS excels in visualizing energy usage, power quality issues, and equipment state with minimal programming required. It provides predictive information to alert users about potential failures before they occur, enhancing proactive maintenance.

Combining short-term savings with long-term sustainability achievements, EMS achieves its full potential. Immediate cost reduction supports the strategic move toward a sustainable future. Reducing energy consumption and preventing downtime improve the bottom line in the short term. The data creates a foundation for long-term sustainability initiatives, expansion, and continued conservation. As you enjoy today"s benefits, you gain more confidence, based on the data, to invest in projects that support sustainable practices and conservation.

Learn more about Schneider Electric"s commitment to a sustainable future, or feel free to contact us at FTI to discuss how we can help you drive your sustainability goals with data.

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Web: https://www.hollanddutchtours.nl/contact-us/
Email: energystorage2000@gmail.com
WhatsApp: 8613816583346