



## West Coast Food Corporation Energizes Its Bottom Line



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With over \$3 billion in annual sales, this west coast food corporation is one of the nation's largest and well-known producers of premium quality food and pet products for the U.S retail market. The company boasts recognizable brands, and chances are there's a food product of some sort in most American's houses.

As part of its success in retail sales, they have made it a point to continue efforts towards developing more efficient operations. Energy has a significant impact on efficiency and the bottom line, and as economic and environmental challenges increase, companies are taking a closer look at how they purchase and use energy in their facilities. The food corporation was familiar with enterprise energy management solutions for industrial organizations that are being designed to help achieve higher energy efficiency, while reducing energy-related emissions, costs and downtime.

They wanted to research enterprise technology in order to apply it to the food industry. Their goal was to research world-class enterprise energy management systems to establish a 'best practices' model for the food industry.

As with any large scale project, time, money and resources are vital to its success. So they decided to submit a proposal to The U.S. Department of Energy's (DOE) State Technologies Advancement Collaborative (STAC). STAC projects allow states, territories and the federal government to better collaborate on energy research, development, demonstration and deployment projects. STAC provides up to \$60,000 towards approved projects every year, paid for by a partnership of the National Association of State Energy Officials (NASEO), the Association of State Energy Research and Technology Transfer Institutions (ASERTTI), and the DOE.

As part of the preparation for its STAC proposal, they reviewed Lawrence Berkley National Lab's (LBNL) enterprise energy management research titled Information Technology for Energy Managers by M.A. Piette & N. Motegi published in 2002. The goal was to work with LBNL and apply their research to the food industry. Together with LBNL defined a STAC project to demonstrate state-of-the-art enterprise energy management (EEM) and enterprise asset management (EAM) tools. Although LBNL's initial research focused more on a building perspective, The food corporation was able to apply it to W.A.G.E.S (water, air, gas, electricity, steam), relevant to the food industry.



### Launching the EEM-EAM STAC Demonstration Project

In 2004 they received approval on the EEM-EAM STAC Demonstration Project. Its objective: to optimize US food industry energy supply and demand-side efficiencies and associated manufacturing assets to yield the lowest-effective plant operating cost.

The Director of Energy and Indirect Procurement for the food corporation was asked to lead the charge of this project. With over 25 years of experience in all facets of operations, including engineering, production, technical laboratory, and power plant management – along with a strong background in both EEM and EAM, the Director of Energy happily took the reigns.

When the DOE asked him to do this, he already knew where the project needed to start. They needed to be able to manage energy at an invoice level, every 15 minutes versus the conventional energy management of every month so the first step was to integrate that into more of a financial perspective. The food corporation's objective was to be able to look at where we are against budget and where we are accruing for accounts payable with utilities.

To ensure that equipment runs at an energy efficient mode throughout its life cycle, he also wanted to make sure the aspect of integrating EEM into EAM was included.

As the OEM specifications for maintenance were mapped out, the metered data was required as part of the EEM to trigger work orders at the appropriate interval to ensure that maintenance is done per OEM requirement. That helps minimize the working capital investment. The tools need to work synergistically to manage our energy resources effectively. That will ensure we do predictive and preventive maintenance effectively.

To find the best-in-class EEM solutions, the Director of Energy worked with representatives from the California Energy Commission, California League of Food Processors, LBNL and University of California-Davis, California Institute of Food & Agricultural Research (CIFAR) to screen 27 different provider's offerings of EEMs. After an extremely comprehensive technical, financial and service-related assessment of the proposed solutions was concluded, four qualifying candidates received a formal RFP.

### The Value of Integrated Systems

The group chose Square D® PowerLogic® ION® EEM system from Schneider Electric to provide the energy management platform for the STAC program because Schneider Electric covered most of what was requested, showed flexibility for future software feature expansion, and was the most well-developed.

One of the required components of the EEM system was the ability to collect and archive facility energy consumption data. The energy manager was quoted as saying "When we can see it, we can manage





it.” Data related to key energy drivers such as operating hours, tons per hour, weather and tariffs needs to be presented in a meaningful fashion so that it can be used for effective decision making and help calculate energy costs at an invoice level. By accurately modeling energy usage patterns, companies can benchmark and compare the performance of multiple facilities or processes to reveal savings opportunities and help managers set clear and achievable goals.

Another component that was crucial to the food corporation’s team was a web-enabled dashboard that reported on key performance indicators to help programs stay on track and validate the resulting return on investment of efficiency projects. PowerLogic® ION EEM software has a built-in rate engine to support accurate utility bill analysis, cost allocation, forecasting and rate comparisons. The software also offers advanced power quality event classification, filtering and correlation to quickly isolate conditions that may be causing production disruptions or equipment damage.

“The PowerLogic® ION EEM software solution encompasses differing utility types, data sources and geographical locations to quantify the costs of energy and relates them to an enterprise’s everyday business processes,” explains the Director. The application complements and extends the benefits of existing energy information resources like digital control systems (DCS) and energy management systems (EMS), power monitoring and control systems (PMCS), EAM, and utility information sources by providing the collective information needed for a complete view of energy performance.

This gives businesses the information they need to set and track energy performance goals; generates reports for stakeholders and participants that highlight ongoing energy performance; and facilitates participation and collaboration between multiple business divisions and users. Real-time and historical data can be translated into actionable information, proactively reducing energy-related business risks and controlling energy costs.

The PowerLogic® ION EEM system technology uses an open platform design with Web-based reporting and analysis tools. Its modeling and forecasting tools, user personalization of content and data quality processes ensure accurate and complete data. For companies in the food industry, this means, the ability to identify opportunities to increase effectiveness and energy efficiency, while reducing the operating costs of the monitored systems. It also helped corporate finance officers, energy program directors and plant managers collaborate on decisions, and share best practices to sustain savings, meet emissions standards and boost productivity.

“Essentially, you have a comprehensive one-stop-shop as opposed to a piecemeal approach to a power quality system or another type of control system. You can see all your data under one umbrella and put the cost dimension to it as well.”





Part of that comprehensive solution is preventive maintenance.

With very large facilities; facilities that span for miles, before, it would be a catastrophic failure when they didn't have any remote access or instrumentation to our air compressors to see when, say, amp loads were increasing. Because the PowerLogic® ION EEM system gives ongoing energy data monitored as well as hour meter data from the forklift, the food corporation can see when they are out of spec per OEM requirements in order shut down before there is a catastrophic failure. The system has proven to be ideal for identifying those problems that creep up from time to time and helping the food corporation in dealing with them.

### The Food Corporation Enjoys the Benefits of ION EEM

The PowerLogic® ION® EEM system also helps improve its operational decision making. By getting the data necessary to not only help justify investments, like boiler replacements, it also that shows which boiler should be replaced first. In addition, EEM gets down to the SKU level. Arriving at that number has been difficult in the past for the food plants that manufacture multiple products – to know what the energy cost is at a SKU level. But ION EEM gives us the ability to track that better at a 15 minute interval time-frame.

With data inputs like integrated electricity and piped utilities consumption, weather and real-time pricing feeds, the software is able to reveal inefficiencies, track performance metrics and support accurate budgeting exercises, which are showing a significant impact on the bottom line.

“The PowerLogic® ION® EEM system delivers actionable intelligence the food corporation needs to support the complete energy and emissions management program. The energy and power management system provides them with the capability to monitor, control, automate and report our energy, which in turn lowers our energy costs, improves the reliability of the energy we use and increases the efficiency of our usage.”

For the food corporation, the design of the PowerLogic® ION EEM system answers the needs of their diverse applications that include power quality management, operations management, billing support, and distributed generation.

“We've learned a lot over the past three years in doing this and are able to look at the next generation and forecast analytics in a more advanced mode,” says the Director of Energy.

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